교과과정

「과목 개요(대학원과정)」

GRADUATE COURSE DESCRIPTIONS
2018 서울대학교
교과과정
「과목 개요(대학원과정)」
GRADUATE COURSE DESCRIPTIONS
서울대학교
SEOUL NATIONAL UNIVERSITY
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This course in the form of a small-scale lecture or an intensive seminar is designed to provide incoming graduate students with the knowledge of their specialized field in the broad context of humanities. It is offered by individual departments with a specific topic as its subtitle and can be run in a more flexible format than regular graduate seminars in 3 units.

**Core Courses**

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**Exploring Classical Korean Literary Texts**

This course will allow students to examine important authors and works from the Enlightenment Period to the 1960s. Their studies will include delving into specific research methodologies, such as looking at basic concepts that are needed to interpret the poets or works from these periods or even attempting a new interpretative methods. Focusing on the characteristics of modern Korean novels, students will discuss various approaches and methods to the study of literary texts, focusing on the unique features of modern Korean literature.
언어를 사용하는 화자들의 언어 능력은 소리와 형태, 의미에 대한 지식을 가지고 문법에 맞는 문장을 만들어 내는 것이라고 이해할 수 있다. 그리고 이러한 문법적인 문장을 만들어 내고 사용할 수 있도록 해서 의사소통을 할 수 있는 것이다. 성공적인 의사소통을 위해서는 실제로 언어가 사용되는 맥락에 대한 사회문화적 지식이 필요하다. 사회언어학은 바로 인간의 언어가 그 것이 사용되는 구체적인 사회문화적 맥락과 관련하여 연구하는 분야이다. 이 과목에서는 사회언어학의 이론적 바탕을 이해하고, 나아가 한국이라는 한 언어 공동체 속에서 우리말이 화자들의 계층, 세대, 나이, 성과 같은 사회적 요인과 구체적으로 어떻게 관련되어 사용되는지, 이러한 사회적 요인들이 국어 속에 어떻게 반영되어 있으며 구조화되어 있는지를 경험적 자료를 통해 살필 수 있도록 한다.

Language proficiency means making grammatically correct sentences with the knowledge of sound, form, and meaning. However, just because someone can make grammatically correct sentences does not mean that they can communicate well. Sociocultural knowledge of the context in which language is used is necessary for successful communication. Sociolinguistics is the field of research that studies the relationship between a language and its sociocultural context. In this course, students will come to understand the theoretical foundations of sociolinguistics. They will also examine, through experiential materials, how the Korean language, within the Korean language community, is connected to such social factors as class, generation, age, and speaker’s sex, as well as how these social factors are reflected and structured within the language.

Method of Research in Korean Linguistics

이 과목은 국어학 전공자들을 대상으로 국어를 연구하는 데 필요한 기본적인 방법론을 이해하도록 함을 목적으로 한다. 먼저, 지금까지 주로 국어학이 어떤 주제를 어떤 방법으로 다루어 왔는지를 간단히 살펴 다음, 국어학 연구에서 어떤 문제들이 앞으로 해결해야 할 것인지, 또 어떤 하위 분야의 연구가 더 깊이 있게 연구되어야 하는지 같은 연구 대상 또는 주제, 각각의 문제들을 어떠한 방법론에 입혀야 하는지 하는지 방법론, 기타 국어학에서 서로와 이론의 상호 관계 등을 깊이 있게 검토한다. 이를 바탕으로 수강생들은 자신이 전공하려는 하위 분야에 적합한 연구방법을 찾아보도록 한다.

The goal of this course is to help students majoring in Korean linguistics learn the basic methodologies necessary to study the Korean language. First, we will briefly examine what subjects Korean linguistics has addressed and to what results. Second, we will examine in-depth such research subjects as problems in the study of Korean linguistics, as well as which sub-fields require further research. Lastly, we will determine which methodologies are appropriate for each problem, and examine the interaction of materials and theories. These steps of studies will subsequently allow students to find suitable research methods for their chosen sub-field.
한국어어휘론(한국어어휘론특강) 3-3-0

Reading and Research

한국어어휘론(한국어어휘론특강) 3-3-0

Topics in Korean Semantics

한국어국문학과(Dept. of Korean Language & Literature)

Vocabulary is one of the basic elements comprising a language. In order to properly understand the Korean language, a general understanding of the system of Korean vocabulary must come first. When vocabulary is taken as the subject of linguistic study, one can approach it from a morphological perspective or focus on semantics. This course focuses primarily on the semantic aspect of vocabulary and examines the antonymic and synonymic relations between words, word field theory, constituent analysis theory, and the unique character of the Korean vocabulary, a large part of which is occupied by Sino-Korean words.

Topics in Korean Phonology

이 과목은 학생들로 하여금 실제 자료들에 속하는 것들을 알아보는 데 목적이 드린다. 먼저 새로운 여러 학습자들을 개관한다. 그리고 과학의 주제별로의 비교를 통해 공동특성을 추출해내고 국어의 계통적 위치를 파악한다. 강의는 주로 알타이 가설, 나아가 스째드와 포페 등의 연구성과를 검토하면서 진행된다.

The goal of this course is to investigate where the Korean language belongs in the genealogy of language. Firstly, we will survey various academic achievements in the field of the genealogy of language. Through comparisons with neighboring languages, we will extract common characteristics. This lecture is based primarily on the Altai hypothesis, and will progress with an examination of Ramstedt and Poppe.
101.508A 한국어학특강 3-3-0

Topics in the History of Korean Linguistics

이 과목은 국어에 대한 연구가 어떤 것들이 있었으며 그 경향의 변화 방향은 어떻게 일어났는지를 목적으로 한다. 먼저 국어학자의 시대방식에 대해 알아본다. 그리고 시대방식의 종류에 대해 알아보고, 그와 음운의 관계를 설명한다. 그려서 학생들은 학자직에서 이루어진 연구를 통해 학문적 발전을 동반하는 것으로 진전되었다.

The goal of this course is to inquire into what sorts of study have been done in Korean linguistics and what the major trends have been. We will look into the periodic divisions of the history of Korean linguistics and then survey the results from the studies of selected scholars from each period. Students will be assigned one scholar on which to give a presentation and discuss in class.

101.509A 한국어학연습 1 3-3-0

Seminar in Korean Linguistics 1

이 과목은 최근에 국어문법사 연구에서 이루어진 주요 연구성과를 비판적으로 고찰하여 학생들에게 보다 풍부한 한국어문법사 연구를 수행할 수 있도록 한다. 학생들은 학습한 연구성과를 적용하여 한국어문법사 연구에 대한 새로운 접근을 제시할 수 있도록 한다.

The goal of this course is to allow students to build a foundation for a higher level of study in Korean grammar. They will critically examine the recent results of major researches conducted in the history of Korean grammar. Students may be asked to give presentations on those results along with a critical reading of the documentary materials.

101.601A 한국음성학특강 3-3-0

Korean Phonetics

이 과목은 음성학 연구의 기초 학문인 음성학에 대한 이론을 습득하고 이것이 국어음성론 연구에 어떤 영향을 미치는지를 살펴본다. 강의는 다음과 같이 진행된다. 1) 음성학의 종류 가운데 조음 음성학에 대해 자세히 알아보고, 2) 국제음성기호를 정확히 습득하여 여러 음성들을 표기할 수 있는 능력을 얻고 3) 국어의 음성에 영향을 끼치는 것이 있으며 이와 음성의 관계는 어떤지에 대해 살펴보는 형식으로 한다.

In this course, students will learn the theories of phonetics, the foundational science in the research of phonology, and what influence it has had on Korean phonological research. The course will progress as follows: First, among the various kinds of phonetics the articulatory phonetics will be examined in detail, then the students will accurately learn the international phonetic(IPA) symbols and gain the ability to transcribe various sounds, and finally the class will examine the ingredients that make up Korean phonetics and what relationship it has to phonology.

101.602 훈민정음특강 3-3-0

Topics in Hunminjeongeum

이 과목은 ≪해례본 훈민정음≫을 통해 훈민정음의 창제원리를 정확히 알고 기거에 반영된 국어의 모습을 파악하는 데 목표를 둔다. 먼저 ≪훈민정음≫을 문구 하나하나에 유의하면서 자세히 강독한다. 다음으로 훈민정음의 창제와 관련한 여러 쟁점들을 검토한다. 그리고 문자와 음운의 관련 하에 훈민정음이라는 문자에 국어의 음운론적 정보가 반영되어 있는가에 초점을 맞춰 강의를 진행시킨다.

The goal of this course is to accurately understand the origin of Hunminjeongeum and identify features of the Korean language reflected in it. First, we will closely read the Hunminjeongeum text in detail. We will then examine the various issues concerning the creation of Hunminjeongeum, focusing on the phonological information reflected in Hunminjeongeum.
This course attempts to understand the methodology by which systematic features of selected dialects may be understood. The class will be divided into geographical and social dialectology. In geographical dialectology, one may study the phonological, grammatical, and lexical characteristics of the dialect from a particular region or compare different dialects altogether. In the former case, however, the characteristics of Korean dialect are generally limited to the phonology. In social dialectology, one will look at the varieties of use, which is dependent on various social factors, and practice its systematic description.

The goal of this course is to examine the changes in Sino-Korean pronunciation, which has developed independently from the Chinese pronunciation. The class will examine, through fragmentary written materials, how the sounds of early Middle Korean through fragmentary written materials, how the sounds of early Middle Korean have changed. Also discussed in class is how Sino-Korean pronunciation, which has developed independently from the Chinese pronunciation, has been influenced by Chinese pronunciation and grammar. The class will examine the changes in Sino-Korean pronunciation, which has developed independently from the Chinese pronunciation, through fragmentary written materials.

The goal of this course is to help students understand the basic theories on compiling dictionaries. They will examine current dictionaries, point out existing problems, and devise a method of compiling a better dictionary. The class will divide the subject matter into such sections as the recording of the target material must precede any study of that material. Through this course, students will learn how to evaluate materials related to the study of Korean linguistics from the bibliographical viewpoint and broaden their understanding of Korean linguistic research materials.
synchronic characteristics of the late Middle Korean will be examined. Also discussed, along the way, is the trend of diachronic changes in Middle Korean.

101.705A  근대한국어연수 3-3-0

Studies in Modern Korean

이 과목은 근대한국어 시기의 문헌들을 통해 그 시기 한국어의 발전 모습을 파악할 수 있도록 합니다. 먼저 다양한 표기법과 그 변화양상에 대해 알아본다. 그리고 문헌자료로 표기된 문헌뿐만 아니라 한국어에 대한 여러 문헌들을 통해 당시 근대한국어의 점으로부터 본다. 또한, 근대한국어 시기에 일본인 한국어사상의 변화에 관점을 둔다. 이 강의는 이들 각 주제별로 학생들이 연구·발표하고 토론하는 형식으로 진행된다.

In this course, the students will be explore the characteristics of the modern Korean through their study of literary works from that period. First, we will inquire into the various writing systems and the aspects of change therein. We will elucidate the modern Korean of the time not only through literature written in the system of Hunminjeongeum, but also through evidences concerning the Korean language. We will also look into the change that arose during the period of modern Korean. Students will research the above subjects and then give presentations which will be discussed by the class.

101.707A  현대한국어연수 3-3-0

Studies in Current Korean

한국어의어를 대상으로 음운, 형태, 통사, 의미 등의 면에서 정적인 사실들을 확인하고 이해하는 작업이 이 과목의 목적이다. 연지는 고정되어 있는 것이 아니라 시간의 흐름에 따라 계속해서 그 모습을 달리하며 동시에 있어도 지역이나 세대, 계층, 성 등에 따라서 연지는 달라진다. 우리는 이 과목을 통해 현대한국어의 전반적인 구조, 체계를 살펴볼뿐만 아니라 다양한 연지 변화에의 모습들도 살아 있는 연지 자료에 대한 기법을 통해 살펴보기로 된 것이다.

The goal of this course is to confirm and understand contemporary Korean with respect to phonology, morphology, syntax, and semantics. Language is not a fixed thing, but something that changes over time, and even during the same period the languages of different areas, generations, classes, and sexes are different. Through this course, we will not only examine the overall structure and system of current Korean, but we will also examine the diverse variations in language by studying living language materials and texts.

101.709A  한국어의미론연습 3-3-0

Seminar in Korean Phonology

이 과목은 한국어자료를 대상으로 한국어의미론을 연구하는 과정을 각 단계별로 실제 연습을 통해 이해함을 목적으로 한다. 강의는 세미나식으로 운영되며, 1) 자료수집, 2) 자료분석과 정리, 3) 음소목록 설정과 음운체계 작성, 4) 기저형의 설정, 5) 규칙의 설정, 6) 음운과정의 설명 등의 순서로 진행된다. 대상 연지는 한국어의 어휘, 문장, 의미 등에 대한 연구 결과들을 비판적으로 이해하고, 이를 바탕으로 사용법들이 한국어의 의미 현상과 관련한 연구 논문을 작성할 수 있는 능력을 기여한다.

In this course, we will do a concentrated examination and analysis of domestic and foreign doctoral theses in the field of Korean semantics. This will allow students to gain a critical understanding of the results from recent researches in Korean sentences, as well as lexicological and discourse meanings. With this foundation students will acquire the ability to write a research thesis concerning Korean semantics.
이 과목은 한국어의 문법사와 관련된 국내외의 박사학위논문들을 검토, 분석함으로써 최근의 연구 성과들을 비판적으로 이해하고 이론을 실제 자료에 적용하는 과정을 연습하여, 이러한 과정은 연구 논문을 작성할 수 있는 능력을 기르는 데 목적이 된다.

The goal of this course is to critically understand the results of recent research by examining and analyzing both Korean and foreign doctoral theses related to Korean lexicology. The students will also practice the process of applying theory to actual materials, fostering the ability to write a research paper in the field of lexicology.

이 과목은 한국어에 대한 연구가 아직 것들이 있으며 그 경향의 발전 방향은 어떤것을 알아보는 것을 목적으로 한다. 먼저 한국어학사의 시대구분에 대해 알아본다. 그리고 각 시대별로 중요하다고 생각하는 학자들을 택하여 그 연구 성과가 어떠했는지 알아본다. 강의는 학생들이 한 학자씩 맡아 발표를 하고 이를 토론하는 형식으로 진행된다.

This course surveys the various studies that have been performed in the field of Korean linguistics and the trends they have observed. First, we will inquire into the historical periods of Korean linguistics. We will also inquire into the results of the studies by representative scholars from each period. Students will be assigned one scholar on whom they will research and present to the class.

Language changes unceasingly with time. Contemporary Korean has passed through various stages, such as ancient Korean, medieval Korean, and modern Korean which will be the foundation for future Korean. This course focuses on the history of grammar within the Korean language, examining diachronically morphological and syntactical characteristics. It will help students understand contemporary Korean through the knowledge of its historical languages.

This course closely examines the creation of the Korean hangeul writing system, that is, Hunminjeongeum, such as the general principles that created the characters and its methods of use. Also studied are the process of change in the writing system along with various issues concerning its use.

이 과목은 고대한국어에 대한 연구가 아직 것들이 있으며 그 경향의 발전 방향은 어떤것을 알아보는 것을 목적으로 한다. 먼저 한국어출판물의 시대구분에 대해 알아본다. 그리고 각 시대별로 중요하다고 생각하는 학자들을 택하여 그 연구 성과가 어떠했는지 알아본다. 강의는 학생들이 한 학자씩 맡아 발표를 하고 이를 토론하는 형식으로 진행된다.

This course surveys the various studies that have been performed in the field of Korean linguistics and the trends they have observed. First, we will inquire into the historical periods of Korean linguistics. We will also inquire into the results of the studies by representative scholars from each period. Students will be assigned one scholar on whom they will research and present to the class.
성과들을 검토하고, 이 연구 성과들은 국내외 연구 성과들과 비교 해 볼 수 있게 함으로써 통합적인 한국어학의 방향성을 모색하게 되는 목적을 가진다. 이를 위하여, 우선 각 세대에 이루어진 연구 성과들을 일본, 미국, 유럽 등의 지방별로 그리고 한국어학의 하위 분야별로 고찰할 것이다. 그리고 한국어학의 미학을 위하여, 국내외 연구 성과들 해외의 연구 성과들과 어떻게 상호 발전적으로 교류할 수 있음을 모색할 것이다.

The course investigates the results of Korean linguistics from overseas and compares them with the literature published in Korea, trying to find the way for a unified study on Korean linguistics. First of all, those results through the world are classified and examined according to the regions such as Japan, USA or Europe and the various fields of Korean linguistics such as phonology, morphology, syntax or semantics. Furthermore, we are going to survey what to do with both those results and the domestic results for the future of Korean linguistics.

국문학전공(Korean Literature Major)

101.563A 한국현대작가론특강 3-3-0

Topics in Korean Modern Authors

개화기에 1970년대까지의 작가들 중, 문학적인 작가들 선정 하여 그 작가의 이념세계와 그 작가의 소설작품의 특징을 깊이 있게 파악하도록 한다.

This course focuses on select, controversial Korean authors from the Enlightenment Period through the 1970’s. The class will attempt at a deeper understanding of these authors’ ideologies and the characteristics of their novels.

101.565A 한국현대시인론특강 3-3-0

Topics in Korean Modern Poets

한국의 대표적인 시인들을 선정하여 그 작품이 갖는 문학적 특징과 해석에 대한 견해를 바탕으로 한국의 현대시의 이념세계와 그 시의 소설작품의 특징을 깊이 있게 파악하도록 한다.

In this course, modern, Korean, representative poets are selected and the relevant issues concerning their literary works, including biographical information, will be studied. The goal of this class is to compose and discuss theories about these poets by carefully examining the results and limitations of existing researches, as well as identifying future research topics.

101.567 한국한문문학연구 3-3-0

Studies in Sino-Korean Prose

한국한문학의 전반적인 실상을 살펴보고 그에 대한 기존의 연구 성과를 정리하여 비평론, 문제론, 주제론 등 다양한 시각에서 한문학 작품을 분석하고 해석하는 연구를 시도한다. 한문학이 도입되기 시작한 시기부터 근대에 이르기까지 한문학의 다양한 갈래들과 그에 해당하는 작품들을 두루 망라하여 각 갈래의 특성을 파악하고 각 갈래에 적합한 작품의 연구방법을 마련하고 그에 따라 실제 작품을 분석하고 해석하는 연구를 시도한다.

This course provides an introduction to Sino-Korean prose literature and its related researches. We will cover all of the various genres of Sino-Korean prose, from the period when Sino-Korean was introduced until the end of the Josen Dynasty, as well as works corresponding to each genre. Thus, the students will come to understand the characteristics of each genre. We will also establish research methods suitable for each genre, and the students will attempt to analyze and interpret works according to those methods. At the end of the semester, they will be called upon to give an interpretation of Sino-Korean prose based on such aspects as criticism, style, and subject.
한국 고전소설의 전반적인 실상에 대한 이해를 바탕으로 고전소설 작품을 분석하고 해석한다. 이와 함께 개별 작품과 갈래론 등에 대한 기존의 연구 결과를 바탕으로 검토하여 각각에 대한 탐구의 입문을 마련해 보도록 한다. 각 갈래의 문예적적 특징, 다른 갈래와의 영향 관계, 내적 발전의 원리를 발견하고 소설적 인물론을 가르는 것이 주요한 연구 과제가 된다.

We will analyze and interpret classical novels based on a comprehensive understanding of Korean classical novels. Students will also critically examine existing research on individual works and the genre as a whole, developing their own arguments on these subjects. The primary goals of this course are to discover the literary-aesthetic characteristics of each genre, the influence the different genres have on each other, and the principles of internal development, gaining the ability to see works in terms of the history of novels.

한국 고전시가연구

이 과목은 고전시가 분야에서 다루어야 할거나 과목이 마련되지 않았다든가 특별히 주목할 만한 연구 대상이나 방법론적 대상으로 하여 학생 스스로가 연구를 진행하며 나름의 입문을 마련하도록 한다. 고전시가의 주제론, 양식론, 갈래론, 배경론 등에 대한 연구 필요성이 있을 때 개설함으로써 개설할 때마다 그 부재가 달라진다.

The goal of this course is to allow students to engage in independent study concerning particularly important research subjects or methodologies in the field of classical poetry. Though it centers on the field of classical poetry, the themes covered in this course will vary according to the needed area of research at that time.

한국구비문학연구

이 과목에서는 고대가요에서부터 다루어야 할 것, 과목이 마련되지 않았거나 특별히 주목할 만한 연구 대상이나 방법론적 대상으로 하여 학생 스스로가 연구를 진행하며 나름의 입문을 마련하도록 한다. 고전시가의 주제론, 양식론, 갈래론, 배경론 등에 대한 연구 필요성이 있을 때 개설함으로써 개설할 때마다 그 부재가 달라진다.

The goal of this course is to allow students to engage in independent study concerning particularly important research subjects or methodologies in the field of classical poetry. Though it centers on the field of classical poetry, the themes covered in this course will vary according to the needed area of research at that time.

한국현대문학과 시대

이 강좌는 문학사에서 주요하게 다루어지거나 주목할 만하다고 여겨지지 않았던 작가를 발굴하고, 그들의 삶과 현대 문학의 관계를 파악하고, 그들의 작과 그의 작품의 특징을 담으며, 나아가 작가 연구의 방법론을 마련하는 데 그 목적이 있다.

This course will conduct their own research dealing in-depth with authors deemed important in literary history or uncovering worthwhile authors who have so far been ignored. The goal of this course is to comprehend the relationship between author and work from a variety of viewpoints and perspectives and to establish a methodology for studying authors.

한국현대문학과 시대

이 강좌는 한국현대문학 작품들을 그 시대와의 연관 아래 분석하고, 검토하는 과정을 통해 학생들이 문학 작품에 관한 맥락을 이해하도록 하는 것을 목표로 한다. 또한, 그 과정에서 다른 시대의 문학을 자신의 시대와 연결시켜 생각할 수 있는 기회를 제공하여 문학에 대한 이해를 높일 수 있도록 유도하고자 한다.

This course aims to help students understand the socio-cultural contexts of Korean modern literature. This course offers students the chances to re-experience the origin and evolution of the Korean modern literary works and to re-
think our contemporary literature in comparison with that of another age.

M1232.000600 한국현대드라마연구방법론 3-3-0

Methods of Research in Korean Modern Drama

This course is aimed to help students understand and appreciate the Korean modern drama of various genres. To this end, we will train students to have a critical point of view concerning the forms of representation in Korean modern drama text, and to gain a new perspective of the modern drama in the new media environment.

101.682B 한국현대문학과 이론 3-3-0

Topics in Korean Modern Literature and Research Methodology

This course is a doctoral course. It studies the history of modern Korean poetry from the Enlightenment Period to the 1950s. The history of the modern Korean poetry will be divided into distinct periods and studied in depth. In addition, various issues, including schools of thoughts and specific poets, concerning current Korean poetry will be analyzed and examined. The students are expected to be the active moving problem to understand the literature and the historical contexts of the works as well as its interrelations with other genres.

101.765A 한국현대시사연구 3-3-0

Studies in the History of Korean Modern Poetry

This course is a doctoral course. It studies the history of modern Korean poetry from the Enlightenment Period to the 1950s. The history of the modern Korean poetry will be divided into distinct periods and studied in depth. In addition, various issues, including schools of thoughts and specific poets, concerning current Korean poetry will be analyzed and examined. The students are expected to be the active moving force that pushes the class along by preparing presentations for each period and leading the class discussion. Through this course, the students will come to understand the literature and the historical contexts of the works as well as its interrelations with other genres.

M1232.001100 서사학이론연습 3-3-0

Seminar in Narratology

This course is a doctoral course. It studies the history of modern Korean poetry from the Enlightenment Period to the 1950s. The history of the modern Korean poetry will be divided into distinct periods and studied in depth. In addition, various issues, including schools of thoughts and specific poets, concerning current Korean poetry will be analyzed and examined. The students are expected to be the active moving force that pushes the class along by preparing presentations for each period and leading the class discussion. Through this course, the students will come to understand the literature and the historical contexts of the works as well as its interrelations with other genres.
The period that is covered in this class will be from the end of the 19th century to the end of the 20th century.

### 101.774A 한국고전문학과 세계문학 3-3-0

**Korean Classical Literature & World Literature**

This course arranges the literary criticism of modern Korean literature by period and examines the characteristics of each. This class will also tackle the challenge to reconcile traditional literary stylistic theory and modern genre theory. In order to accomplish this, students will prepare research presentations that provide evidence for the possibility of original critical theory within the gap between literary principles and actual criticism.

### 101.775 한국고전작품론연습 3-3-0

**Seminar in Classical Korean Literary Works**

The focus of this course is modern Korean poetry. We will study the works themselves as well as the critical theory set forth by the poets and critics of the modern era. The class will concentrate on understanding and analyzing the modern poetry that is created from an historical point of view the various genres that were created, grew, and died out from ancient times to the end of the Joseon period. We will determine the historical context and principles on which the various ontological aspects of Korean literary works are founded. We will also conduct comparisons with other literary histories, shedding light on the universality and uniqueness of Korean literary history. In addition, through a study existing research and theories on periodic division and genre systems students will develop their own insights into Korean literary history and acquire their own methods for studying literary history.

### 101.779A 한국문학사연구 3-3-0

**Studies in Korean Literary History**

This course is to research literary works, interpret their meaning, and find their significance in the history of literature. According to historical and at the same time to analyze specific works, preparing the foundation for balanced research.
Studies in Korean Modern Poets

This course will examine critical theories of modern Korean poetry and its unique characteristics. A variety of theoretical approaches to Korean poetry and their results, as well as the unique stylistic development of Korean poetry will be developed. Finally, the findings of such research will be presented in a manner of a formal seminar.

Studies in Korean Modern Novel

This course will study the critical theory of modern Korean novels. We will examine both the various theoretical approaches to the Korean novels as well as their, the novels', stylistic development. Finally, the findings of our research will be presented and discuss in a form of a seminar.

Studies in Korean Modern Authors

Students in this course will conduct their own research and arrive at their own conclusions, dealing in-depth with authors deemed important in literary history or uncovering worthwhile authors who have so far been ignored. There are many classical literary works whose author's are unknown, but if one is not properly able to demonstrate those abilities or share that knowledge with others, they could easily be rendered useless. The goal of this course is to train students to be able to more effectively present their research results in English by practicing the skills required to make clear points and then convey those points articulately and eloquently.

Studies in History of Korean Modern Literature

Generally, the final stage in the research of a literary work is how it is situated in the larger literary tradition. Accordingly, then, an understanding of the history of literature is important. From this perspective, this course studies the methods of describing the history of literature, the interrelation of the literary history and history of philosophy, as well as the connection between the history of literature and the history of society.

Academic Presentations Practicum in Korean Studies

The purpose of graduate school is to prepare students to stand confidently as scholars on the world stage. Improving one's academic abilities and accumulating knowledge is, of course, the core of that process. But if one is not properly able to demonstrate those abilities or share that knowledge with others, they could easily be rendered useless. The goal of this course is to train students to be able to more effectively present their research results in English by practicing the skills required to make clear points and then convey those points articulately and eloquently.
Students will be trained in the various approaches that have been used throughout Korean classical prose, enabling them to conduct their own research and establish their own arguments. We may study a variety of subjects, such as the concepts, origin, genre theory, or author theory of classical prose. Accordingly, subtitles to the course title for each semester will clearly explain the character of the course for that semester.

Thematic Inquiries in Korean Literature

Thematic Inquiries in Korean Literature is being run as a Group Ⅱ course, with a subtitle selected from important themes in Korean literary history—such as love, friendship, marriage, family, disease, aging, death, nature, ecology, travel, politics, ideology, power, and art—and encompassing the interests of students who will be taking the course (to be determined by a preliminary survey). Examples would be: “Love and Friendship in Korean Literature,” “Korean Literature and Family,” “Disease and Aging in Korean Literature,” “Korean Literature and Ideology,” “Korean Literature and Nature,” “Korean Literature and Travel,” etc. Students will share research results from their specific fields (oral literature, classical poetry, classical prose, classical Chinese, modern poetry, modern novels, drama, etc.) and receive guidance on conducting integrated research on the theme.
방법론 등에 대한 연구를 중심으로 진행된다. 본 강좌는 ‘사고’·‘사자’·‘공사’의 현대의 역할 및 의미를 간략히 설명하고, 전통 문학과 현대 문학의 관계를 다루며, 학문적 분석에 전념하였다. 예를 들어, 19세기 말의 서구의 현대적인 희곡이 수입되기 이전까지의 노래와 사설이 혼합된 형식을 본격적으로 탐색하였다. 이 과정을 통해 전통 문학과 현대 문학의 관계를 이해하고, 현대 문학의 문제를 겸비하여 해석할 수 있는 기술을 배우는 데 주력하였다.

고전문학이론 연습 3-3-0

102.617 China Drama 3-3-0

이 과목은 역대의 중국 희곡 작품에 대한 시대별·각각별 심층 연구를 위해 개설되었다. 중국 희곡은 중당시기 이후 상공업 발전의 결과로 성립되어 시민 사회의 점증하는 문화적 욕구에 발맞춰 발전하였고, 19세기 말 서구의 현대적인 희곡이 수입되기 이전까지의 노래와 사설이 혼합된 형식을 본격적으로 탐색하였다. 이 과정을 통해 전통 문학과 현대 문학의 관계를 이해하고, 현대 문학의 문제를 겸비하여 해석할 수 있는 기술을 배우는 데 주력하였다. 본 강좌는 역대의 시학 및 문학사상과 전통 희곡을 대상으로 작품의 분석과 감상·비평 및 작품한·사설·시대별 사상·중국시사사·중국시가사 연구 방법론 등에 대한 연구를 중심으로 진행한다.

This course provides students with opportunities to read and analyze the works of such masters as Li Bai, Du Fu, Wang Wei, and Bai JuYi to expand the students' understanding of Chinese poetry.

세미나 중학문학이론 연습 3-3-0

102.619A Seminar in Literature and Chinese Prose 3-3-0

본 강좌는 중국의 신문에 대한 체계적인 이해를 돕기 위해 개설된 과목이다. 본 강좌를 통해 수강생들은 당대 문화로의 중심인 중요성을 인식할 수 있으며, 역대의 시학 및 문학사상과 전통 희곡을 대상으로 작품의 분석과 감상·비평 및 작품한·사설·시대별 사상·중국시사사·중국시가사 연구 방법론 등에 대한 연구를 중심으로 진행한다.

This course is designed to introduce comprehensive and full realities of theories of literature in Pre-Modern China, selectively investigating important literary documents and theories in areas such as poetry, history of literature and Chinese literary. This course investigates literary documents and theories dating from Qin to Qing dynasty and also deals with modern research on theories of literature in Pre-Modern China. Given that the quantity and length of the period stated is too broad, this course selects various subjects of critical issues in classical literature and proceeds with providing systematic knowledge, insights and application capabilities regarding theories of literature in Pre-Modern China. Therefore subjects differ every semester and subtitles will be provided publicly in advance. Depending on the subtitle, this course would include reading original texts, holding discussions and seminars about specific subjects, reading related thesis, critical reading and writing essays.
This course aims for students to enjoy a comprehensive study of Chinese linguistics. For each semester a different topic will be explored.

**102.648A 중국사곡연구 3-3-0**

*Studies in Chinese Ci Poetry & Sanqu Literature*

Ci poetry is a lyric poetry prevalent in Song Dynasty and Sanqu Literature is a popular poetry in Yuan Dynasty. Both were lyrics developed from anonymous popular songs and created by literary classes into a representative Chinese poetic literary genre. This course intends to provide a systematic understanding and analysis of poetry and literature. Based on readings of poetry works, this course will offer different theses every semester and critical readings and essay writing would be required.

**102.653A 중국현대문학이론연습 3-3-0**

*Seminar in Theories of Literature in Pre-Modern China*

This course will include modern and contemporary Chinese literature, namely from the 1840's Opium War, the May Fourth Movement, the establishment of People's Republic of China, the Reform and Opening up until the present day. This course aims at investigating Modern Chinese literature studies carried on in China and other regions.

**102.655A 중국어어법연습 3-3-0**

*Seminar in Chinese Grammar*

This course in designed to provide students with systematic knowledge of different Chinese grammar subjects not covered in Studies in Modern Chinese Grammar. The subjects will differ every semester and subtitles will be provided publicly in advance.

**102.660 제자백가연구 3-3-0**

*Studies in Philosophy of Hundred Schools*

This course will investigate how best to study Chinese phonetics. We will illuminate the development of Chinese phonetic structure in terms of recent theories as well as generative phonetics.

**102.661 중국어의미론연구 3-3-0**

*Studies in Chinese Semantics*

This course will allow students to engage in focused semantic research by means of a systematic study of relevant works and theses.

**102.664 중국고문법연구 3-3-0**

*Studies in Classical Chinese Grammar*

This course aims for students to gain a systematic understanding of ancient Chinese grammar.
The Chinese Traditional Oral Performance Arts is an early form of Oral Performance Art's revived since the Middle Ages. In this Oral Performance Art, the development of a story appears to have been performed through songs and narrations accompanied by simple music. This course investigates the historical development of the Oral Permanence Arts from the earliest ages and it analyses representative art works. Moreover this course aims at examining the historical importance of performance art heritage and its modern understanding through looking at performance arts theories and critiques.

102.667 Chinese Traditional Novel

Studies in Chinese Traditional Novel

This course aims for students to engage in a systematic study of Chinese fiction by examining the various forms found in this genre. The themes for the course will vary each semester.

102.667A Chinese Philology

Studies in Chinese Philology

This includes studies of Chinese traditional elementary learning. This course includes every subject of traditional elementary learning with the exception of Studies of Chinese Character which is dealt in a separate form of Oral Performance Art's. This includes studies of character, historical events, and building a groundwork for intellectual approach to Chinese philology which was the mainstream of Chinese science.

102.665A Chinese Language and Literature

Studies in Chuci & Hanfu Literature

This course investigates the historical development of the Chinese Traditional Novels from the earliest ages and it analyses representative art works. Moreover this course aims at examining the historical importance of Traditional Novel heritage and its modern understanding through looking at novel theories and critiques of all ages and countries.

102.665 Chinese Language and Literature

Studies in the Oral Performance Arts of China

The Chinese Traditional Oral Performance Arts is an early form of Oral Performance Art's revived since the Middle Ages. In this Oral Performance Art, the development of a
Studies on Texts of Pre-Qin Period

This course analyses documentary records and writings dating from Ancient China to the Spring and Autumn Period. During this period ‘literature’ was not a specialized field and for that reason this course covers mixed documents and writings regarding intellectual, cultural, societal phenomena of the era. The purpose of this course is to obtain a general knowledge of cultural and intellectual, cultural, societal phenomena of the era. This course is based on critical reading of thesis regarding documents of the Qin Dynasty and its history of culture and intellect of the period. Presentations, seminars and essay writings will be included in the course.

Studies on Literatures of Han-Six Dynasties Period

This course studies documents and writings dating from the Qin and Han Dynasties, when the literary endeavors flourished, to the Southern and Northern Dynasties. This course covers literary works and mixed documents and writings regarding intellectual, cultural, societal phenomena of the era. The purpose of this course is to obtain a general knowledge of cultural, intellectual, cultural situations and documents of the period. This course is based on critical reading of thesis regarding documents of the period and its history of culture and intellect. Presentations, seminars and essay writings will be included in the course.

Studies on Literatures of Tang Song Dynasties Period

This course covers documents dating from the Tang Dynasty, followed by the Ming Dynasty and finally to the Qing Dynasty. This course covers literary works and mixed documents and writings regarding intellectual, cultural, societal phenomena of the era. The purpose of this course is to obtain a general knowledge of cultural, intellectual, cultural situations and documents of the period. This course will be taught in connection with investigations in Performing Arts because during these periods popular arts were expressed in the form of dramas and it enriched the chinese literature. This course is based on critical reading of thesis regarding documents of the period and its history of culture and intellect. Presentations, seminars and essay writings will be included in the course.

Studies on Literatures in Modern China

Modern China refers to the period between the 1840 Opium War and the 1919 May Fourth Movement. This course deals with documents of the period. It covers literary works and mixed documents and writings regarding intellectual, cultural, societal phenomena of the era. The purpose of this course is to obtain a general knowledge of intellectual, cultural situations and documents of the period.
This period is famous for the introduction of western society’s intellectual experience and modern literature. This course is based on critical reading of thesis regarding documents of the period and its history of culture and intellect. Presentations, seminars and essay writings will be included in the course.

102.679 
중국현대문학연구 3-3-0

Studies on Literatures in Contemporary China

중국현대문학은 1917년 문학혁명 및 1919년 오사신문화운동 이후부터 지금까지의 문학을 가리킨다. 본 강좌에서는 이 시기 전후의 문헌과 글쓰기를 다룬다. 수업은 이 시기의 문학적 자료를 중심으로 그와 연관된 지적, 문학적, 사회적 현상을 병합적으로 고찰하는 방식으로 진행된다. 이를 통해 이 시기의 글쓰기와 지식, 문학적 상황에 대한 포괄적인 안목을 갖추는 것이 본 강좌의 주요 목표이다. 특히 이 시기는 중국 사회주의혁명의 수행, 중화인민공화국의 수립 및 개혁개방의 단행 등 정치사회적으로 급변하던 때임에 주목하여, 근대성 관련 문헌 등과 연계하여 수업을 진행한다. 수업은 이 시기의 문헌과 관련 연구논의의 강도와 비판적 입자를 중심으로 진행하면서, 당시의 지성사, 문학사 관련 연구 논의 등의 강도와 비판적 입기를 반영한다. 또한 발표와 세미나, 에세이 작성 등도 병행된다.

Contemporary China dates from the 1917 Cultural Revolution and the 1919 May Fourth Movement to the present day. This course deals with documents of the period. It covers literary works and mixed documents and writings regarding intellectual, cultural, societal phenomena of the era. The purpose of this course is to obtain a general knowledge of intellectual, cultural situations and documents of the period. This period is related to drastic political changes through events such as the introduction of socialism, the establishment of the People's Republic of China, and the execution of the Reform and Opening Up program. This course is based on critical reading of thesis regarding documents of the period and its history of culture and intellect. Presentations, seminars and essay writings will be included in the course.

102.680 
한대중국어어법연구 3-3-0

Studies in Modern Chinese Grammar

본 강좌는 한대 중국어어법의 체계적인 이해와 그에 대한 비판적인 안목을 기르기 위해 개설된 과목이다. 한대중국어어법 연구로 대상으로 언어계획의 내적 규칙성을 탐구하고, 이를 바탕으로 정확한 한대중국어 구사능력 및 문법과 연구 역량을 형성하는 것이 본 강좌의 주요 목표이다.

This course is designed to provide students with a systematic knowledge and critical understanding of Modern Chinese Grammar. Based on modern Chinese language, the purpose of this course is to examine internal rules of Chinese language system and help students develop and manage language abilities correctly.

102.681 
한중문학교류연구 3-3-0

Studies in Intercommunication of Literature between China & Korea

본 강좌에서는 전통시기부터 근현대시기까지, 중국문학과 한국 문학 사이에 이뤄졌던 제반 문화적, 문학적 교류를 다룬다. 개개 작품 혹은 작품에 대한 비교 연구에서부터, 양자 간의 지식, 인적 교류 및 양자 간의 문화적 교류 등을 병합적으로 다룬다. 이를 통해 중국문화학을 바로알문화학과 혹은 동아시아 문화학의 한계 포괄적이 고 역사적인 시장에서 객관적으로 접근할 수 있는 비평적 안목과 역량을 함양하는 것이 본 강좌의 주요 목표 가운데 하나이다.

This course deals with cultural and literary exchanges between China and Korea from traditional times to the present. It examines broadly human, cultural, intellectual exchanges from comparative studies of representative works or authors. The main purpose of this course is to develop capabilities to understand critically and objectively the comprehensive area of East Asia and Chinese Character cultivated countries.

102.682 
중국문학연구방법론연습 3-3-0

Seminar in Research Methodology of Chinese Literature

본 강좌는 중국문학 연구의 다양한 이론과 실제를 설명하기 위해 개설되었다. 동시적으로는 전통시기 한자문화권에서 활용된 연 구방법론부터 근현대인 연구방법론을 다루며, 지역적으로는 중 국과 대한, 홍콩과 같은 중화권 및 우리나라, 일본, 그리고 근대 이후 중국학 연구의 주요 근거로서 성장한 영국과 미국, 프랑스 등의 연구방법론을 다룬다. 다면 상관방법의 그 양과 깊이가 상대적으로 강화하기 때문에, 실제 강좌는 중국문학연구방법론에 대한 체계적인 안목과 깊은 통찰력 및 응용력을 배양하는 방식으로 진행한다. 따라서 주제와는 별 관계없이, 부제의 형태로 사전에 공지된다. 강의형태는 부제에 따라 세부 주제에 대한 토론과 세미나, 연구논의의 강도와 비판적 입기와 에세이 작성 등의 방 식을 선택적으로 운용한다.

This course proposes to deal with various theories and practices of Chinese Literature Research. Chronologically it encompasses from the research methodology of traditional ages of Chinese Character cultivated cultures to the present day. Regionally it deals with research methodology used in Chinese dominated regions such as China, Hong Kong and Taiwan, Chinese border regions such as Korea and Japan and other regions developed by the influence of China such as England, US and France. Given that the quantity and length of the period stated is too broad, this course selects various subjects of critical issues in Research Methodology of Chinese Literature and proceeds with providing systematic knowledge, insights and application capabilities regarding Research of Chinese Literature. Therefore subjects differ every semester and subtopics will be provided publicly in advance. Depending on the subittle, this course would include reading original texts, holding discussions and seminars about specific subjects, reading related thesis, critical reading and writing essays.

102.683 
중국어학연구방법론연습 3-3-0

Seminar in Research Methodology of Chinese Linguistics

본 강좌는 중국어학 연구의 다양한 이론과 실제를 설명하기 위해 개설되었다. 동시적으로는 전통시기 한자문화권에서 활용된 연구방법론부터 근현대인 연구방법론을 다루며, 지역적으로는 중국과 대한, 홍콩과 같은 중화권 및 우리나라, 일본, 그리고 근대 이후 중국학 연구의 주요 근거로서 성장한 영국과 미국, 프랑스 등지의 연구방법론을 다룬다. 다면 상관방법의 그 양과 깊이가 상대적으로 강화하기 때문에, 실제 강좌는 중국어학연구방법론에서 주요 논점이 되는 다양한 주제를 선정하여, 이를 매개로 중국어학연구방법론에 대한 체계적인 안목과 깊은 통찰력 및 응용력을 배양하는 방 식으로 진행한다. 따라서 주제와는 별 관계 없이, 부제의 형태로 사전에 공지된다. 강의형태는 부제에 따라 세부 주제에 대한 토론과 세미나, 연구논의의 강도와 비판적 입기와 에세이 작성 등의 방식을 선택적으로 운용한다.
This course is intended to deal with various theories and practices of Chinese Linguistics Research. Chronologically it encompasses from the research methodology of traditional ages of Chinese Character cultivated cultures to the present day. Regionally it deals with research methodology used in Chinese dominated regions such as China, Hong Kong and Taiwan, Chinese border regions such as Korea and Japan and other regions developed by the influence of China such as England, US and France. Given that the quantity and length of the period stated is too broad, this course selects various subjects of critical issues in Educational Methodology of Chinese Language and proceeds with providing systematic knowledge, insights and application capabilities regarding Research of Chinese Literature. Therefore subjects differ every semester and subtitles will be provided publicly in advance. Depending on the subtitile, this course would include reading original texts, holding discussions and seminars about specific subjects, reading related thesis, critical reading and writing essays.

102.684 중국어교육방법론연습 3-3-0

Seminar in Educational Methodology of Chinese Language

본 강좌는 중국어교육방법의 다양한 이론과 실제를 설정하기 위해 개설되었다. 통사적으로는 전통시기 한자문화권에서 활용된 연구방법론부터 근대적인 연구방법론을 다루며, 지역적으로는 중국과 대만, 홍콩과 같은 중화권 및 우리나라, 일본, 그리고 근대 이후 중국학 연구의 주요 기조로 성장한 영국과 미국, 프랑스 등지의 연구방법론을 다룬다. 또한 상술한 범위는 그 양과 깊이가 상당하므로, 실제 장강은 중국어교육연구방법론에서 주요 논점이 되는 다양한 주제를 선정하여, 이를 매개로 중국어교육연구방법론에 대한 체계적인 안목과 깊은 통찰력 및 응용력을 배양하는 방식으로 진행된다. 따라서 주제는 매 학기 달라지며, 부제의 형태로 사전에 공지된다. 강의형태는 부제에 따라 세부 주제에 대한 토론과 세미나, 연구논지의 강독과 비판적 읽기 및 에세이 작성 등의 방식을 선별적으로 운용한다.

102.685 중국문헌전제연습 3-3-0

Topics on Chinese Texts

본 강좌에서는 시대와 사회의 주요 인문적 흔적을 능동적으로 다룰 수 있는 시대적이고도 구체적인 주제에 선정하여, 이를 역대 중국의 문헌을 중심으로 다룬다. 본 강좌는 특정 주제에 대해 '통 합 학문적 고찰 위에 임기'와 '다시 쓰기'를 중심으로 진행된다. 

This course studies in depth successive generations of Chinese texts and it selects specific and occasional subjects that can actively deal with the generation's society and topics in humanities. This course is centered on 'reading' and 're-writting' the comprehensive study of knowledge.

102.686 중국고대의 문화, 지식, 텍스트 3-3-0

Culture, Knowledge and Texts in Ancient China

통통시기 한자문화권의 경우, 문학은 문화의 근간이자 지식의 핵이었다. 따라서 문학연구의 문화사와 지식사의 맥락에서 다양적으므로 수행할 필요가 있다. 본 강좌에서는 중국의 역대 문헌 가운데 이러한 작업을 수행할 수 있는 텍스트를 선정하여, 문학과 문화 및 학문(지식) 사이의 상관성을 고찰한다.

In the traditional ages, literature was considered as the root and center of cultural knowledge. Therefore the study of literature is essential in learning the various facets of the history of culture and knowledge. This course is intended to express the relationship between literature and culture-knowledge through examining selected texts closely related to this topic.

102.687 중국문학의 원형과 변용 3-3-0

Archetype of Chinese Culture and its Transformation

본 강좌에서는 역대 중국의 시가, 산문, 소설, 희곡, 선화 등에 담겨 있는 중국문화의 원형을 발견, 정리하고 이를 문학적으로 변용한 역사와 그 실제 및 기체를 다룬다.

The purpose of this course is to discover the archetypical Chinese Culture and its historical and present literary transformation in areas such as poetry, novel, prose, drama and myth.

102.688 중국문학의 사회적 기제 3-3-0

Social Mechanism of Chinese Literary Tradition

문학에 대한 문학사회학적 접근을 토대로, 역대 중국에서 중국 문학이 생산되고 유통, 향응되어온 사회적 기제를 다룬다. 또한 문학적, 인문학적 관심사와 사회학적 관심사가 교차하는 지점에서 개개 텍스트 및 주제에 대한 다면적문 제시식을 시도한다.

Based on Literary and Social approach of Chinese Literature, this course aims at showing the social mechanisms used to explain the chinese successive generations of literary production, circulation and enjoyment. This course also attempts to give varied analysis to the texts and topics intersecting literary, cultural and social interests.
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<th>Course Code</th>
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<tr>
<td>102.689</td>
<td>중국어와 중국인의 사유형식</td>
<td>Chinese Language and the Way of Thinking</td>
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본 강좌에서는 언어에 대한 철학적, 지성사적, 사회학적 접근을 통해, 고대중국어 [한문]과 현대중국어에 반영된 중국인의 사고방식을 미시적이고도 실증적으로 다룬다. 이를 통해 중국인의 사유형식을 논리적으로 재구성하고, 이에 미친 제반 인자를 고찰해본다. 본 강좌의 주요 목표이다.

This course is intended to provide a philosophical, intellectual and social approach to the Chinese Language, dealing with detailed and empirical methods to explore the way of thinking reflected in ancient Chinese characters as well as in present Chinese language. The purpose of this course is to reconstruct the logic in the way of thinking of Chinese people and to examine its factors and roots.

| 102.690 | 중국어의 역사적 변천 | Historical Change of Chinese Language |

중국어의 역사적 변천에 대한 사적 고찰을 수행함과 동시에 이를 통해 역대 중국의 인문적 전통을 미시적으로 추적한다.

The purpose of this course is to understand the Historical Change of Chinese Language and track down the traditional study of humanities of China throughout history.

| 102.803 | 대학원논문연구 | Reading and Research |

본 강좌는 대학원생들을 대상으로 효과적인 논문 작성법을 지도하기 위해 개설되었다. 수강생들은 지도교수의 지도 아래 논문 작성법을 훈련받게 된다.

The course trains and refines the academic research and writing skills of graduate students.
103.601 영문학 입문론 3-3-0

English Introduction

This course introduces students to the major concepts of literary analysis and critical methods. It also offers training in composing academic papers. This course is required for all incoming graduate students of literature.

103.603 영어사 3-3-0

History of English Language

This course provides a general overview of the history of the English language. It focuses on the various linguistic developments in phonology, morphology, and syntax, exploring the origins and grammatical changes in each area.

103.605 영어음운론 3-3-0

English Phonology

This course introduces students to the basic concepts and issues of generative phonology, surveying topics related to English phonetics, distinctive feature theory, feature geometry, syllabification, and stress.

103.606 영어통사론 3-3-0

English Syntax

This course introduces students to the fundamental ideas and analytic methods of syntactic theory and to the major empirical syntactic phenomena of English.

103.608 영어의미론 3-3-0

English Semantics

This course introduces students to the basic concepts and issues of generative semantics, surveying topics related to English semantics, including meaning, reference, and truth conditions.
대학원 (Graduate School)  :: 영어영문학과 (Dept. of English Language & Literature)

연구대상에 포함시킬 수 있다.

Class will be conducted as a seminar and focuses on the American novel of the Twentieth Century. Authors include early twentieth-century novelists such as Faulkner, Hemingway, Fitzgerald, post-Modernists, and contemporaries.

103.625A 현대영미학과 3-3-0

Modern English and American Drama

Ibsen 이후 absurd drama에 이르는 현대영문학의 흐름 속에서 영국과 아일랜드의 현대문학과 미국 현대문학의 위상을 구체적인 작품을 읽음으로써 점차적으로 탐구한다.

Seminar will focus on the modern English, Irish, and American drama from the time of Ibsen to that of the theater of the absurd.

103.626A 시학 3-3-0

Shakespeare

시학의 비극, 희극, 사극, Roman Plays, 문제극, 로맨스극 등의 작품을 읽음으로써 집중적으로 다룬다.

Students will discuss select topics within the works of Shakespeare. Content and emphasis may vary with instructors.

103.627C 비평이론 3-3-0

Critical Theory

다양한 문학비평이론을 섬도 있게 다루는 고급시설로서 일반적이고 포괄적인 비평이론의 흐름을 개괄적으로 소개한다.

This advanced seminar concentrates on the comprehensive introduction to and survey of the criticism and theory in contemporary terrain of discourses.

103.630A 미국문학 3-3-0

American Poetry

Anne Bradstreet에서 Whitman, Dickinson, Frost, Pound, Stevens, Williams, Plath에 이르기까지 미국문학 전체에 대한 개관을 하거나 특정 분야에 대해 연구한다. 특정 시인 또는 시인들을 집중적으로 다룰 수도 있다.

Seminar on American poetry includes works of Bradstreet, Whitman, Dickinson, Frost, Pound, Stevens, Williams, and Plath. It can be organized either as a historical survey or as a thematic study concentrating on a select number of authors.

103.631A 중세영문학 3-3-0

English Medieval Literature

영글로스 및 시대부터 15세기말까지의 영국문학 작품들을 선별적으

로 개관한다. 텍스트에 대한 이해와 더불어 문학전통과 사회문화적 맥락에 대한 이해를 도모하며 Chaucer의 작품들과 Middle English에 대한 훈련을 반드시 포함한다.

Pro-seminar in English literature from the Old English Period to the late fifteenth century; lecture-oriented period study encompassing all literary genres; course requirement includes comprehensive exam.

103.659A 19세기 미국소설 3-3-0

19th-Century American Novel

포, 호슨, 멜빌, 트웨인, 제이콥스, 크레인 등 19세기 미국 작가의 대표적 작품들을 읽고 분석함으로써 19세기 미국소설의 특성과 전통을 이해한다.

This is a seminar course in the American novel of the nineteenth century. Authors studied in the course include Poe, Hawthorne, Melville, Twain, James, and Crane.

103.673 영문학특강 1 3-3-0

Topics and Issues in English and American Literature 1

영미문학 연구의 주요 주제나 생점을 선정해 집중 검토하는 고급특강이다. 사학의 구문 없이 영미문학의 전반적인 분야에 해답하

며, 주제와 생점을 학기마다 달라질 수 있다.

Advanced seminar in special topics, issues, genres, and au-
언어학과(Dept. of English Language & Literature)

103.674 영미문학특강 2 3-3-0

Topics and Issues in English and American Literature 2

영미문학 연구의 주요 주제나 쟁점은 선정해 집중 검토하는 고급 세미나. 시대의 구분없이 영미문학의 전반적인 분야에 해당하며, 주제와 쟁점은 학기마다 달라질 수 있다.

Advanced seminar in special topics, issues, genres, and authors in English and American literature. It deals with above categories and others regardless of the periods and may vary from semester to semester.

103.675 영미문학특강 3 3-3-0

Topics and Issues in English and American Literature 3

영미문학 연구의 주요 주제나 쟁점을 선정해 집중 검토하는 고급 세미나. 시대의 구분없이 영미문학의 전반적인 분야에 해당하며, 주제와 쟁점은 학기마다 달라질 수 있다.

Advanced seminar in special topics, issues, genres, and authors in English and American literature. It deals with above categories and others regardless of the periods and may vary from semester to semester.

103.676 로네상스영문학 3-3-0

English Renaissance Literature

16세기 초부터 17세기 중반까지의 영국문학을 심도 있게 개괄하는 프로세미나. 전 문학 장르를 망라하는 강의 중심의 시대론 과목으로 기말패퍼와 함께 종합시험을 부과한다.

Pro-seminar in English Literature from the early sixteenth to the mid-seventeenth century; lecture-oriented period study encompassing all literary genres; course requirement includes comprehensive exam.

103.677 18세기 영국문학 3-3-0

18th-Century English Literature

왕정복고기부터 18세기 말까지의 영국문학을 심도 있게 개괄하는 프로세미나. 전 문학 장르를 망라하는 강의 중심의 시대론 과목으로 기말패퍼와 함께 종합시험을 부과한다.

Pro-seminar in English literature from the Restoration to the late eighteenth century; lecture-oriented period study encompassing all literary genres; course requirement includes comprehensive exam.

103.678 19세기 영국문학 3-3-0

19th-Century English Literature

18세기 말부터 19세기 말까지의 영국문학을 심도 있게 개괄하는 프로세미나. 전 문학 장르를 망라하는 강의 중심의 시대론 과목으로 기말패퍼와 함께 종합시험을 부과한다.

Pro-seminar in English literature from the late eighteenth to the late nineteenth century; lecture-oriented period study encompassing all literary genres; course requirement includes comprehensive exam.

103.679 20세기 영국문학 3-3-0

20th-Century English Literature

20세기 초부터 현재까지의 영국문학을 심도 있게 개괄하는 프로세미나. 전 문학 장르를 망라하는 강의 중심의 시대론 과목으로 기말패퍼와 함께 종합시험을 부과한다.

Pro-seminar in English literature from the early twentieth century to the present; lecture-oriented period study encompassing all literary genres; course requirement includes comprehensive exam.

103.680 19세기 미국문학 3-3-0

American Literature up to 1900

19세기까지의 미국문학을 심도 있게 개괄하는 프로세미나. 전 문학 장르를 망라하는 강의 중심의 시대론 과목으로 기말패러와 함께 종합시험을 부과한다.

Pro-seminar in American literature from the Colonial Period to the late nineteenth century; lecture-oriented period study encompassing all literary genres; course requirement includes comprehensive exam.

103.681 20세기 미국문학 3-3-0

20th-Century American Literature

20세기 초부터 현재까지의 미국문학을 심도 있게 개괄하는 프로세미나. 전 문학 장르를 망라하는 강의 중심의 시대론 과목으로 기말패러와 함께 종합시험을 부과한다.

Pro-seminar in American literature from the early twentieth century to the present; lecture-oriented period study encompassing all literary genres; course requirement includes comprehensive exam.

103.682 최근영미소설 3-3-0

Contemporary English and American Novel

20세기 중·후반 이후에 왜건 영미소설을 다루는 세미나. <현대영국소설>과 <현대미국소설>에서 읽기 힘든 최근 영어권 작가들을 골라 연구한다.

Seminars in contemporary English and/or American fiction; focuses on Anglophone authors not coverable in <20th-Century English Novel> and <20th-Century American Novel>.

103.685 영미문학특강 4 3-3-0

Topics and Issues in English and American Literature 4

영미문학 연구의 주요 주제나 쟁점을 선정해 집중 검토하는 고급 세미나. 시대의 구분없이 영미문학의 전반적인 분야에 해당하며, 주제와 쟁점은 학기마다 달라질 수 있다.

Advanced seminar in special topics, issues, genres, and authors in English and American literature. It deals with above categories and others regardless of the periods and may vary from semester to semester.
대학원(Graduate School)

Topics in Critical Theory
문학비평이론의 여러 갈래 중에서 역사주의, 말르스주의, 신비행, 구조주의, 탈구조주의, 신학자주의, 페미니즘, 정신분석 등 구체적이고 특화된 분야의 이론을 선택해 집중 조명할 수 있다.
An intensive advanced seminar on specific literary theories, including, among others, Historicism, Marxism, New Criticism, Structuralism, Poststructuralism, New Historicism, Feminism, Psychoanalysis, and etc.

103.687 영어학 연구방법론 3-3-0
Research Methods in English Linguistics
이 과목에서는 영어 음성/음운론, 통사론, 의미론, 심리언어학, 사회언어학, 교육 및 코퍼스 등 영어학의 다양한 영역에서 사용되는 양적 연구 방법의 원리를 학습하고 적용해 본다. 문헌연구로부터 연구 설계, 가설의 설정, 데이터의 통계적 분석, 결과의 해석 및 논문 집필에 이르는 양적 연구의 전반적 과정을 공부한다.
The purpose of the course is to introduce students to principles and applications of research methods in various fields of English linguistics and language studies. A full range of research steps and procedures involved in quantitative language studies will be discussed, which include literature review, hypotheses formulation, research design, statistical data analysis, and interpretation of results. Students will be required to write a draft report.

*103.688 응용영어학연습 3-3-0
Seminar in Applied Linguistics
영어교육 및 응용영어학에 대한 기초과목을 이수한 학생들에게 관련 분야의 최근 논문들을 통해 이론 및 최근 연구 경향들을 소개하고 이를 응용한 연구를 수행할 수 있도록 하는데 초점을 둔다. 구체적인 강의 내용은 매 학기 담당교수가 강의계획서를 통해 공지한다.
This course is an advanced-level seminar in English education and applied linguistics which introduces various theoretical approaches and recent research findings in the related fields. recent research findings in the related fields.

103.689 영어학연구 3-3-0
Topics in English Linguistics
영어학이나 영어사 분야의 고급 과목으로 최근 연구 주제들과 이론적 발전에 대해 연구한다. 구체적인 강의 내용은 매 학기 담당교수의 선택에 따라 달라질 수 있다.
This course introduces advanced topics and recent theoretical developments in English linguistics and Historical linguistics. Topics to be announced.

M2169.000200 영어영문학주제연구 1 3-3-0
Directed Study in English Language and Literature 1
개별적인 학위논문 준비작업과 병행하거나 그에 선행하여 영어영문학의 연구방법을 각자의 전공분야와 연관시켜 상세하게 검토함으로써 박사과정 연구의 전반적인 수준을 향상시키고 논문준비 작업의 효율성을 높이는 것을 목표로 한다.
This course aims at examining the methods in theses writing in relation to individual topic and enhancing the level of post-graduate research. Students in this course are arranged individually with a dissertation supervisor.

M2169.000300 영어영문학주제연구 2 3-3-0
Directed Study in English Language and Literature 2
개별적인 학위논문 준비작업과 병행하거나 그에 선행하여 영어영문학의 연구방법을 각자의 전공분야와 연관시켜 상세하게 검토함으로써 박사과정 연구의 전반적인 수준을 향상시키고 논문준비 작업의 효율성을 높이는 것을 목표로 한다.
This course is a continuation of Research Methods in English Studies I. It further enhances the graduate research and study skills that the students learned in the previous class. As with Research Methods in English Studies I students are arranged individually with a dissertation supervisor.

103.803 대학원논문연구 3-3-0
Dissertation Research
특정한 주제를 정하여 한 학기 동안 학생의 논문을 강의보다는 개별 연구를 통해 진행한다.
This course is set in a style of an independent study. Students will select a topic and study on it individually with a dissertation supervisor.
This course, students study various phonological and phonetic changes in French which occurred during its evolution from Latin to modern French. Through this course, students will hopefully reach a deeper understanding of the fundamentals of the French language as well as its foundations in relation to other, neighboring languages.

In this course, students will examine selected papers in the sub-fields, such as lexical semantics, formal semantics, and pragmatics, during which the different notions and the diachronic development of semantics will be surveyed. Students are expected to get a comprehensive and multi-dimensional understanding of meaning including recent studies in the cognitive sciences and semiotics.

This course is designed to introduce the student to the interrelations of the different theories and currents of modern French linguistics. Through the study of interrelations and the mutual influence among the theories as well as their role in the history of linguistics, the students will be able to further investigate trends and predict future progress of the modern French linguistics.
따라서 본 과목에서는 바로크만이 가지고 있는 화려하고 장식적인 문학양식을 중심으로 하여 그것만이 가지고 있는 독특한 미학을 이해하는 것을 목표로 하며 동시에 바로크 문학과 고전주의 문학 간의 상관관계를 파악해보고자 한다.

Overshadowed by Renaissance literature and Classicism, Baroque literature was long overlooked as an independent literary genre. This course focuses on the special magnificence and ornamental literary styles of the Baroque period. Through this examination the course aims at understanding its characteristic esthetics and relations between Baroque and Classic literature.

104.643 프랑스실존주의연구 3-3-0
Studies in French Existentialism

본 과목은 현대 프랑스가 아니라 전세계 문학 및 사상계에 지대한 영향을 가한 실존주의의 사상이 실제 문학작품에서의 이행을 구체화하고 있는가를 규명하기 위해 개설한다. 투르, 사르트크, 베르트로, 티케이, 몽드로 등 20세기 후반의 프랑스 문학계와 사상계를 대표하는 작가들의 실제 작품 및 문학론을 분석하고, 베르트로, 사르트크의 사상적 민도의 전개와 관계를 연구하게 될 것이다.

In this course, students will examine how Existentialist philosophy is portrayed in French literary works. Actual works and literary theories of mid-20th century French intellectual world by Andre Malraux, Saint-Exupery, Camus, and Sartre will be analysed. In addition, the students will study the unfolding and the development of Existentialist thought.

104.644 현대문화와 불문학 3-3-0
Contemporary Culture and French Literature

문학작품 한 시대의 문화가 집적된 표상이라고 파악할 때, 문학작품의 이해를 위해서는 복잡한 다양한 현대 문학에 대한 종합적인 이해는 필수적이다. 본 과목은, 구체적인 문학작품을 연구함에 있어, 작품이 다양한 문학현상과 맺고 있는 관계를 규명함으로써 작품의 총체적 이해에 다가가는 방법론을 모색한다.

Presupposing that a comprehensive understanding of the diverse and intricate aspects of today’s culture is a prerequisite for the understanding of literary works, we will look into the relations between literature and various cultural phenomena. This will allow us to gain a more comprehensive understanding of literature.

104.645 프랑스낭만주의연구 3-3-0
Studies in French Romanticism

19세기 들어 시도 breve와 스타브 부인에 의해 태동을 보이는 낭만주의는 인간의 자유로운 상상력의 권리를 옹호하면서 이성의 그 초에 가려져 있던 인간의 감성의 전면으로 부각시키고자 하는 노력의 일환이다. 본 과목에서의 초기 낭만주의에서 시작되는 라마르크, 외고, 발베르크에 이르는 낭만주의의 다양한 발현을 살펴보고 그 이론적 전개로 연금술, 신비주의의 배경도 살필 것이다.

Romanticism can be perceived to have been born with Chateaubriand and Madame de Staël in the 19th century. It was part of an effort to highlight the sensibility of man and man’s right for a free imagination, which were threatened by rationalism. This course will study the various manifestations of Romanticism, from early Romanticism to Lamartine, Hugo and Balzac. It will also survey the diverse backgrounds that served as inspirational sources such as alchemy and mysticism.

104.646 프랑스상징주의연구 3-3-0
Studies in French Symbolism

본 과목에서는 프랑스 19세기 후반 문학사의 큰 호름을 이루고 있는 프랑스 상징주의의 실존주의의 사상에 대해 연구한다. 주로 음악성이 뛰어난 작품을 쓴 베르트로, 상징주의의 구체적 여가로 보이는 보들레르의 세계의 양극단을 보여주는 행복과 밀라르메의 작품과 사상을 살펴본다.

In this course we will study French Symbolism, found widely in late 19th-century French literature. We will focus on Verlaine, a master of musicality, and also on Rimbaud and Mallarme, whose works respectively show the two extreme views of the world that Baudelaire represented.

104.647 프랑스사실주의연구 3-3-0
Studies in French Realism

19세기 들어 황성화되기 시작한 소설이라는 장르를 중심으로 탄생한 사실주의는 베르트로와 스탈로의 산하에서 이르는 철학적 세계를 이룬다. 본 과목에서는 주로 이 세 작가들 중심으로 하여 19세기 후반과 20세기 들어 활발하게 나타난 비평가들의 이론작품에서 각자의 세계를 탐구하게 될 것이다.

Realism was born mainly in the genre of the novel, which started to show active progress in the beginning of the 19th century, reaching its peak with the works of Flaubert, Balzac and Stendhal. This course will center around these three authors and their critics, surveying and analyzing their works.

104.650 현대프랑스소설연구 3-3-0
Studies in Modern French Novel

20세기에 들어 서양대전을 겪으면서 소설이란 장르가 다시 활할한 창작영역으로 등장하는데 이들은 이미기존의 소설과는 다른 형식의 소설들이다. 본 과목에서는 새로운 사상과 양식의 현대소설을 연구대상으로 한다. 지드, 모리악, 프루스트 등의 대표적인 작가와 말로, 카뮈, 사르트크 등의 실존주의의 작가, 사르트크, 베토벤, 로브그리예, 사동, 뉘스 등의 누보로망작가의 작품을 고찰한다.

The 20th century novel, after the experience of the two World Wars, was recreated in a style and thought entirely different from those of the past. This course deals mainly with the modern French novel. We will study the works of the main authors like Gide, Mauriac, Proust, as well as Existentialist writers, such as Malraux, Camus, Sartre. Also included in this list are writers from the ‘Nouveau Roman’ period such as Sarraute, Butor, Robbe-Grillet, Simon, and Duras.

104.651 현대프랑스희곡연구 3-3-0
Studies in Modern French Drama

본 과목은 현대 프랑스 작가들이 쓴 희곡작품을 주요 연구대상으로 한다. 이로소를 과감한 가이드와 사르트크의 희극작과 무라노로로의 급이 알려진 이오네스코의 작품, 그리고 그 밖의 아르토 등의 작품을 살펴보고 20세기의 시대적 상황과 이들의 극작품이 지난 과거적 형식에 대한 고찰도 병행한다.

In this course, students will study the dramatic works of modern French writers. We will look at the works of Camus and Sartre, Jean Genet and Artaud as well as Ionesco and Beckett who are famous for absurd theatre. We examine closely the unconventionality of these authors and their
writings. In addition, the various circumstances particular to the 20th century will be observed and analyzed to bring a more comprehensive understanding of their works.

104.652 17세기 프랑스작가연구 3-3-0

Studies in 17th Century French Authors

This course complements 'Studies in French Classicism'. It takes a general approach to the 17th century French literature by focusing on its main authors. Some of the writers that are surveyed are Corneille, Racine, and Molière. The students will also study the different characteristics of these writers and their work.

104.653 18세기 프랑스작가연구 3-3-0

Studies in French Classicism

This course is complementary to 'Studies in 18th Century French Authors'. The 17th century is regarded as the period of the completion of Classical esthetics in French literary history. In Classical dramaturgy, the dramatic unities were established, and aesthetics based on principles of harmony and order were realised. In this course, students will examine the later works of Corneille and Racine to gain a closer look into the Classical aesthetics as both the main current of the 17th century and of the French literature.

104.654 프랑스초현실주의연구 3-3-0

Studies in French Surrealism

Surrealism was not merely a literary movement but came to be a movement that influenced almost all art genres of the early 20th century. This course aims at understanding the essence of this movement through the study of the thought and works of some of its leading writers. Included in the list are Breton Tzara, Aragon, Soupault, and Eluard.

104.655 현대프랑스시연구 3-3-0

Studies in Modern French Poetry

Modern French poetry and the various poetic attempts, this course aims at understanding the poetic spirit of Ponge, Char, Michaux and other French modern poets through close examination of their works.

104.702 구조주의 언어학특강 3-3-0

Topics in Structuralist Linguistics

We will study the scientific background of the birth of Structuralist linguistics and the influence of Structuralist linguistics on other disciplines. A comparative study of the theoretical characteristics of diverse Structuralist schools, such as the Geneva school, the Copenhagen school, the Prague school, and American Structuralism will be conducted. We will also take a look at the Structuralist tradition in France.

104.703 불어학특강 3-3-0

Topics in the History of French Linguistics

Modern French linguistics is divided into various disciplines such as the Geneva school, the Copenhagen school, the Prague school, and American Structuralism will be conducted. We will also take a look at the Structuralist tradition in France.

104.704 중세문학연구 3-3-0

Studies in Medieval French Literature

This course complements 'Studies in French Enlightenment'. We will focus on 18th century literature and focus closely on thought and works of the masters of the 18th century, namely Montesquieu, Voltaire, Diderot and Rousseau. We will discuss with special emphasis on their similarities and uniqueness as thinkers of the Enlightenement period.
Students will conduct a detailed analysis of the different categories of French grammar and basic vocabulary, based on the speech act theory of Culioli. Moreover, we will also try to understand and apply various interpretations of this theory.

104.719 불어문학연구 3-3-0

Studies in Francophilic Literature

This course will provide students with an understanding of the history and development of French literature from the Middle Ages to the present day. The course will cover the works of major French authors and their contributions to the development of French literature.

104.723 불어역학연구 3-3-0

Studies in French Translation Theory

This course will introduce students to the theories and practices of literary translation. Students will learn about the history of translation, the process of translation, and the various methods and techniques used in translation.

104.725 프랑스계몽사상연구 3-3-0

Studies in French Enlightenment

This course will explore the ideas and theories of the French Enlightenment, including the works of Montesquieu, Voltaire, and Rousseau. Students will gain an understanding of the intellectual and cultural developments of this period and their impact on contemporary thought.

104.811 불어(논자시) 3-3-0

French (Graduate school)

This course will focus on the study of French literature and language at the graduate level. Students will gain an understanding of the major literary and linguistic developments in French, and will develop the skills necessary to conduct research in the field.

- 30 -
We will start from pronunciation to basic grammar and further develop reading and expression skills with practice in easy writing.

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>104.803</td>
<td>대학원논문연구  (Reading and Research)</td>
<td>3-3-0</td>
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This graduate-level course is designed for students preparing their thesis. Students will decide on a topic and conduct research for their topic under the guidance of a faculty member.
German Pragmatics

The course will cover German pragmatics in 3 separate fields: Speech-act theory, Pre-supposition, and Implication. Discourse structures and thematic relations in topology will also be discussed in this lecture.

105.608 독어통사론연구 3-3-0

Studies in German Syntax

This class is a study and application of grammar theory. In this lecture, students will analyze the syntactic structure and thematic relations in topology. Discourse structures and thematic relations in topology are discussed in this lecture.

105.618 과테연습 3-3-0

Seminar in Goethe

This lecture focuses on the 'expressionism argument' between Brecht and Lukacs in the early 20th century. The course will survey two literary traditions, realism and modernism, which influenced each other in the stream of German literature. Further studies will include the social realism developed since the 'expressionism argument' and the arguments by postmodernists.

105.620 19세기 독문학특강 3-3-0

Topics in the 19th Century German Literature

In this course we learn about stylistics, a field of text linguistics that analyzes texts and provides guidelines for language usage. Stylistics developed from the tradition of purification/formation of language and literary works from the 19th and 20th centuries. In this lecture, the various fields and theories of stylistics will be reviewed and discussed.

105.651 독립이념체와 모더니즘문학 3-3-0

Realism and Modernism in German Literature

This lecture takes a deeper and broader look into 19th century German prose, novels, dramas, and poetry.

105.638 독문학연구방법론 3-3-0

Methods of Research in German Literature

Studies in German Morphology

This lecture course examines German pragmatics in 3 separate fields: Speech-act theory, Pre-supposition, and Implication. Discourse structures and thematic relations in topology will also be discussed in this lecture.

105.642 독어형태론연구 3-3-0

Studies in German Stylistics

In this seminar, students will learn about morphological forms, verb conjugation, word class, and methods of classification. In addition, students will be introduced to research on tense and aspect as they are reflected in the morphological forms of verbs. The lectures will cover the structural methods of analysis and classification of morphological units.

105.610 독어문학특강 3-3-0

Studies in German Syntax

This lecture course takes a deeper and broader look into 19th century German prose, novels, dramas, and poetry.

In this course we survey scientific approaches to literary texts, from the positivist and structuralist methods to the ‘Away from the structualism’, dismantlement, and constitution methods. Students will gain a broader view of the literary sciences and theories through scientific treatment of German literature.

105.641 독어문학특강 3-3-0

Literature

This lecture course takes a deeper and broader look into 19th century German prose, novels, dramas, and poetry.

In this course we survey scientific approaches to literary texts, from the positivist and structuralist methods to the ‘Away from the structualism’, dismantlement, and constitution methods. Students will gain a broader view of the literary sciences and theories through scientific treatment of German literature.

105.622 19세기 독문학특강 3-3-0

Topics in the 19th Century German Literature

This lecture course takes a deeper and broader look into 19th century German prose, novels, dramas, and poetry.

In this course we survey scientific approaches to literary texts, from the positivist and structuralist methods to the ‘Away from the structualism’, dismantlement, and constitution methods. Students will gain a broader view of the literary sciences and theories through scientific treatment of German literature.
105.654 현대독문학연습 3-3-0

Seminar in Modern German Literature

현대독문학계의 이론들을 구체적으로 속대할 수 있는 주제로 한다. 대표적인 이론들은 이론과를 통해 속대물 뿐만 아니라 개개의 작품에 적용하여 속대적으로 분석되고 연구된다. 수강생들은 체계적인 이론적 지식을 개별적인 작품분석을 통하여 속대함으로써 그 장·단점과 효용성을 검토할 수 있다.

이 주제로 한다. 입학과의 역할을 이해하고 그의 작품을 통해 속대적 맥락과 대응점을 파악할 수 있다.

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105.656 독어학연구방법연습 3-3-0

Seminar in Methods of Research in German Linguistics

독어학은 독일어의 음성·음운, 형태·동사 및 의미·화용론적 인 특성에 대하여 연구하는 분야이다. 독어학이 독일어의 언어학적인 특성을 연구하는 학문인만큼 독어학 연구를 위하여는 언어학의 하위분야에 대한 이론적 지식뿐만 아니라, 각 분야에 적합한 연구방법론 습득이 매우 중요하다. 따라서 이 과목은 대학원에서 역학을 전공하는 학생들에게 다양한 독어학 연구방법론을 접할 수 있는 기회를 제공할 것이며, 이를 위해 2주 과목으로 운영된다.

The course covers various fields in German Linguistics such as Phonetics, Phonology, morphology, Syntax, Semantics and Pragmatics etc. In this course students will learn about the theoretical knowledge and practical methods for the research in German Linguistics. Diverse themes on German Linguistics will be dealt with and discussed in this course. Thus this class will help students to gain a border view of German Linguistics.

105.657 독어학연습 3-3-0

Seminar in German Linguistics

이 강좌에서는 현대 독어학계에서 심도 있게 논의되고 있는 이론들 중 하나를 베이귀 이의 영향성과 주요 성장사를 고민하고, 이 이론의 대표적인 논문들 읽으며 이 이론의 문제점에 대하여 고찰하고 해결책을 찾아본다.

The course inquires into the linguistic theories actively discussed in German linguistics and introduces methodology, merits, and problems through readings of important papers and criticisms on theory.

105.660 독일문예학연습 3-3-0

Seminar in German Literaturewissenschaft

구성주의의 입증의 철학적 인식론적 조류로 분류될 수 있는 사상의 영향이다. 이는 물론 다중의 사상들을 포괄함으로써 하나의 집합 개념으로 이해될 수 있다. 이 경우 인간의 관심사가 대상에 있는 것이 아니라 인간관계의 구조에 대한 대상에 이르는 것이다. 이러한 생각을 관계론적으로 부각시키는 것이 므럴 (사상구성의 이론에 대한 비판적 검토가 이 연습과목의 과제가 될 것이다.

Constructivism is classified as one epistemic branch in philosophy, and is considered to include various thoughts. The common idea is that cognition lies not in objectives but in the construction of cognitive systems. This course will critically examine this constructive 'Literaturwissenschaft.'

105.661 독일고전주의문학연구 3-3-0

Studies in German Classicism

‘고전주의’ 개념의 이론적 의미에서 출발하여 독일 고전주의의 사조의 시대적 배경, 문학적 전통의 의의, 문학 이론과 조력의 역할을 개관하고, 독특과의 준립으로 주요 작품을 선발하여 강독·분석한다. 벨만, 모리츠, 헤르만, 페테의 이론적 곡적과 특히 심베르의 인생교육적 예술관을 연구하고, 고전주의의 사조의 대표적인 작가인 Iphigenie auf Tauris, <Torquato Tasso>, Faust, <Wilhelm Tell>, <Wallensteins Tod>와 서사시 <Hermann und Dorothea>, <Iphigenie auf Tauris>, <Torquato Tasso>, Faust, <Wilhelm Tell>, <Wallensteins Tod>와 서사시 <Hermann und Dorothea>, <Wilhelm Meisters Lehjahrre>, <Hyperrion> 등과 주요 시청기 및 당시를 취급한다. 강의는 세미나 형식으로 진행한다.

In this course we will analyze selected literary works of Goethe and Schiller and take a closer look at dramas like Iphigenie auf Tauris, Torquato Tasso, Faust, Wilhelm Tell, Wallensteins Tod; at epics such as Hermann und Dorothea; and at ‘Bildungsroman’ such as Wilhelm Meisters Lehjahrre and Hyperrion. Other important lyrics and ballads may be examined at the discretion of the instructor.

105.662 독일낭만주의문학연구 3-3-0

Studies in German Romanticism

낭만주의가 독일에서 지니게 된 독특한 성격을 다양한 작가 그룹들의 성향과 활동, 이론에 중심으로 살펴보고 걱정한다. 남자주의의 조선시, 문학적 성향과 의미가 특히 독일과 유럽의 시대사적 맥락 속에서 탐구될 것이다. 티크, 바렌테스, 노바리스, 슬레델 등의 구체적인 작품들도 나타나면서 한 문학사조에 대한 종합적 조사가 되게 됩니다.

This lecture course will help students analyze theories particular to German Romanticism according to the disposition of certain groups of writers. The historical position and meaning of Romanticism will be reviewed in the context of German and European thoughts of the times. Specifically, students will investigate specific works of Tieck, Wackenroder, Novalis, and Schlegel.

105.668 독일소설 및 이론연습 3-3-0

Studies in German Novel and its Theories

빌란트와 쾌로로부터 토마스 만과 카프카에 이르기까지 주요 독일 소설들이 개관하고 개관주의 이론에 이르기까지 독일에서 나온 주요 소설 이론들(Blankenburg, Hegel, Vischer, Lukacs,
This course surveys significant German novels from Wieland and Goethe to Thomas Mann and Kafka. It will include a historical review on the important theories of novel (such as those by Blankenburg, Hegel, Fischer, Lukacs, Laemmert, and Stanzel) from Enlightenment to current times. (such as those by Blankenburg, Hegel, Fischer, Lukacs, Wieland and Goethe to Thomas Mann and Kafka. It will include a historical review on the important theories of novel until the present age. By proffering, for example, the temporary novels and consider how social context shapes form and content. Literary works surveyed in this transition period include Kafka, Broch, and Musil.

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This course examines German poetry from the Enlightenment to current times. By proffering, for example, the temporary novels and consider how social context shapes form and content. Literary works surveyed in this transition period include Kafka, Broch, and Musil.

This course focuses on the development of skills in German. Ideal students for the course are MA and PhD candidates preparing qualifying exams for thesis submission. It is mainly designed to enhance the reading skills so that students will be able to satisfy the qualification for thesis submission.

This seminar aims to summarize cognitive neurolinguistics which are subcategories of the german linguistics and to investigate the procedure of research. Especially, this course will focus on the development of skills in German. Ideal students for the course are MA and PhD candidates preparing qualifying exams for thesis submission. It is mainly designed to enhance the reading skills so that students will be able to satisfy the qualification for thesis submission.

This course will help students become more familiar with translation theory and creative translation. Throughout the course students will practice translation.

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Seminar 1 in Russian Academic Writing

이러아이 논문쓰기 연습1 3-3-0

Seminar 1 in Russian Academic Writing

<러시아어 논문쓰기 연습 1> 강과는 러시아어 학원 수준의 논문을 쓸 수 있는 능력을 다지는 것을 목표로 한다. 이를 위해 학기 전반부에는 가장 먼저, 1) 수준 높은 문법을 구사하기 위한 고급 문법 사항을 필수적으로 점검하고(특히 전치사나 격에서 주의를 요구하는 고급 문법 단락), 2) 수준에서 가장 빈번하게 등장하는 "논문데어"를 혼란시켜 전체 문맥에서 어순지배로 독해하게 함으로써 비판적 사고와 논문 형식의 실제를 경험하게 한다. 이러한 3) 가장 흔한 결론으로 집합하는 러시아어 논문 두 편을 철저하게 분석, 독해하게 함으로써 비판적 사고와 논문 형식의 실제를 경험하게 한다. 이를 기반으로 학기 후반부에는 4) 러시아 문학의 대표작가들 중 우수작가의 에세이에서 주요 대사를 선택하여 실제로 5-6페이지 분량의 논문(4문 정도)을 대학원생 스스로 쓰게 하고 이를 철저하게 점검함으로써 러시아어 논문 쓰기에 자신감을 가질 수 있도록 도와줄 것이다.

This class, <Seminar 1 in Russian Academic Writing>, is dedicated to encouraging graduate students to have a firm confidence and basic capacity to write Russian Academic Writing of graduate standard. To accomplish this goal this class helps graduate students at the earlier part of semester as following: 1) to prepare high-level grammar for them to have a good command of good and refined sentences, particularly in preposition, case, conjunction in need of attention; 2) to be accustomed to deftly using academic essay vocabularies often shown in Essay Writing; 3) to experience the essence of ideal essay writing form and to foster critical writing ability through analyzing and reading two ideal essay in Russian. Through former training, at the latter part of semester 4) graduate students are introduced to the challenges to write essay by themselves by choosing theme in Pushkin and Dostoevsky(more than 5 pages, four times per semester), and professor helps students to have confidence in writing Russian Essay by surveying and guiding their essays.

Seminar 2 in Russian Academic Writing

<러시아어 논문쓰기 연습 2>는 <러시아어 논문쓰기 연습 1>을 마친 학원생들을 대상으로 본격적인 러시아어 논문 쓰기를 혼란시켜 수준 높은 러시아어 작문 능력을 배양시키는 것을 목표로 한다. 이를 위해 강과는 역시 전반부에 주요한 주제로 진행될 것인. 전반부에는 장르 별로 대표적 작가의 대표적 테마를 선정하여(예: 레프토프와 아호모바, 소설: 톨스토이, 투르게네프, 헤교, 불가코프, 제호프, 폴론, 로트만, 바흐찐, 톨스토이, 우스펜스키) 매우 훌륭한 전범으로 꼽히는 러시아어 논문 두 편을 철저하게 분석, 독해하게 함으로써 비판적 사고와 논문 형식의 실제를 경험하게 한다. 이러한 3) 가장 흔한 결론으로 집합하는 러시아어 논문 두 편을 철저하게 분석, 독해하게 함으로써 비판적 사고와 논문 형식의 실제를 경험하게 한다. 이를 기반으로 학기 후반부에는 4) 러시아 문학의 대표작가들 중 우수작가의 에세이에서 주요 대사를 선택하여 실제로 5-6페이지 분량의 논문(4문 정도)을 대학원생 스스로 쓰게 하고 이를 철저하게 점검함으로써 러시아어 논문 쓰기에 자신감을 가질 수 있도록 도와줄 것이다.

This class, <Seminar 2 in Russian Academic Writing>, is dedicated to encouraging graduate students to foster high-level Russian Essay writing capacity through training graduate students thoroughly who finished <Seminar in Russian Academic Writing 1>, and this class consists of two parts. The former part offers over 7 writing seminars on a wide variety of topics according to genres, from poetry(Lermontov, Akhmatova), novel(Tolstoi, Turgenev), play(Bulgakov, Chekhov), criticism(Bakhtin, Lotman), to linguistics(Uspensky), and students will write more than five-page essay writing every week. At the latter part, graduate students are introduced to the challenges to write more than ten-page essay writing every other week through making attempt of free essay writing by selecting themes concerned with their own dissertation, and graduate students will acquire critical thinking and writing capacity by perusing of professor, and cross-checking among graduate students.
The goal of this course is to survey the formation of the Russian literary language in historical perspective. The roles of Church Slavonic elements, Russian history, literature, individual writers, ideologies of given periods, and other factors will be taken into account. Linguistic, extra-linguistic motivating factors and their interactions and dynamism are main topics of the course. The course focuses on the nature and identity of the Russian literary language and for this reason it provides very essential knowledge for linguistics and literature majors in the graduate program.

106.650 러시아어통사론특강 3-3-0

Topics in Russian Syntax

This course reviews various problems in Russian syntax. In particular, the problem of applying General Syntactic Theory to the Russian language, which has a relatively free word order.

106.653 러시아어형태론특강 3-3-0

Topics in Russian Morphology

In this course, students will study inflection, derivation and various other morphological phenomena of the Russian language.

106.654 러시아문학방법론 3-3-0

Bibliography and Methods of Russian Literature

In this course, students study various modes of Russian Literature, for example, formalism and structuralism.

106.661A 러시아어 담화문법 3-3-0

Russian Discourse Grammar

This course offers explanations for diverse phenomena of Russian grammar and lexicon controlled by discourse and pragmatic factors at all levels of linguistic structure. The course covers diverse topics in Russian phonetics, morphology, syntax, and discourse manipulated by contextual, co-textual factors, speaker-oriented or intersubjective meanings.

106.662 러시아어문체론연습 3-3-0

Seminar in Russian Stylistics

This course reviews theories in Russian stylistics and analyzes the styles of various authors.

106.663 현대러시아어학이론연습 3-3-0

Seminar in Modern Russian Theoretical Linguistics

This course critically examines the possibilities and limitations of applying transformational-generative grammar, ie. GB Theory, to various Russian grammatical phenomena.

106.670 19세기 러시아문학연습 3-3-0

Seminar in 19th Century Russian Literature

Nineteenth century Russian literature occupies a unique position in world literature, boasting world-famous authors such as Pushkin, Gogol, Turgenev, Dostoevsky and Tolstoy. In this course, students will explore the Russian literary traditions and origins manifested in 19th-century Russian literature.

106.671 20세기 러시아문학연습 3-3-0

Seminar in 20th Century Russian Literature

This course familiarizes students with literary trends and movements particular to the Russian Revolution in the early 20th century, offering insight into the creative succession of the 19th century Russian literary tradition.

106.672 러시아소설연습 3-3-0

Seminar in Russian Novel

This course familiarizes students with literary trends and movements particular to the Russian Revolution in the early 20th century, offering insight into the creative succession of the 19th century Russian literary tradition.

Russia has developed the novel as an incessant representation of social interests in literature. This course surveys the various other problems of the novel through practical analysis.
Harvard students will learn to re-appreciate the analysis of Russian poetry through the application of its theories. In the process, students will learn to re-appreciate the diverse ideas and emotions embodied in the poetic language, form and structure of Russian Poetry.

This course allows students to understand the special characteristics of Russian drama and its unique poetics within the plot. We will further explore the inner development of Russian drama as well as its relationship with theater.

In this course, students will study the developing processes of Russian classical literature from its origins in French classical literature. Analysis of representative Russian classical literary works will be included.

This course allows students to understand the special characteristics of Russian drama and its unique poetics within the plot. We will further explore the inner development of Russian drama as well as its relationship with theater.

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대학원(Graduate School) 노어노문학과(Dept. of Russian Language & Literature)

106.731 러시아문학작가연습 3-3-0
Seminar in Russian Major Authors

러시아 문학에서 중요한 위치를 차지하고 있는 작가들 중 한 작가를 선택하여 구체적인 작품을 분석함으로써 그의 사상과 감정이 어떠한 주제와 형식으로 표현되는지를 개관하고, 이 작품들이 러시아문학에서 갖는 의의와 특성을 규명해 본다.

In this course, students will select one author, analyse his or her literary works, and examine the themes and forms that represent the author’s ideas and emotions. Students will also examine meanings and features of these literary works in relation to the history of Russian literature.

106.732 러시아문학작품연습 3-3-0
Seminar in Russian Major Works

세계문학으로 인정받은 러시아 고전 중 몇 작품을 선택하여 내용과 형식적인 측면에서 심도 있게 고찰한다.

In this course, students will work on a few Russian classic masterpieces of their own choice and contemplate them both in contents and style.

106.733 러시아문학비평론연습 3-3-0
Seminar in Russian Literary Criticism

러시아문학에 있어 벨린스키, 게르첸, 체르니스키 등의 시민 비평 및 형식주의 도파니즘 비평을 개관하고, 문학과 비평과의 상관관계를 살펴봄으로써 비평의 내용과 본질을 규명해 본다.

This course introduces students to Russian criticism such as civil criticism of Belinsky, Herzen and Chernyshevsky, and modernistic criticism such as formalism. Students will look into the inter-relationship between literature and criticism and discover the contents and essence of criticism.

106.734 러시아문학특강 3-3-0
Topics in Russian Literature

러시아 문학사에 있어서 중요하게 부각되는 문제들 중 몇 가지를 테마로 선택하여 러시아 문학의 특징을 고찰한다.

This course concentrates on one of the outstanding issues in Russian literature to understand its characteristics.

106.735 러시아문학작품론연구 3-3-0
Studies in Russian Major Works

이 강좌는 러시아 문학 중 중요작품을 선택하여 러시아 문학 전통과 나아가서는 세계 문학 전통에서 그 작가의 위치를 살펴본다.

By choosing a significant work in Russian literature, this course will let students understand the important role of the selected writer and his/her works in relation to the tradition of the world literature as well as Russian literature.

106.736 러시아문학작가론연구 3-3-0
Studies in Russian Major Authors

이 강좌는 러시아 문학사에서 중요한 작가를 선택하여 러시아 문학 전통과 나아가서는 세계 문학 전통에서 그 작가의 위치를 살펴본다.

By choosing a significant writer in Russian literature, this course will let students understand the important role of the selected writer and his/her works in relation to the tradition of the world literature as well as Russian literature.

106.737 러시아문학비평론연구 3-3-0
Studies in Russian Literary Criticism

본 강좌는 <러시아문학비평론>에서 다루어진 다양한 이론들 을 여러 작품들에 직접 적용해 봐서 데문학비평론의 다각적인 제정도를 향상하여 문학작품과 비평 간의 관계를 재정립해 본다.

In this course, numerous theories handled in <Theory of Russian Literary Criticism> will be applied to various literary works. Alongside these theories, students will review the theories of literary criticism from many different perspectives, and eventually re-define the relationship between literary works and criticism.

106.738A 러시아문학사조론연습 3-3-0
Seminar in Russian Literary Trends

러시아문학에서 19세기에 생겨난 낭만주의의 시, 소설, 희곡, 문학이론 등을 다루게 된다. 이 강좌는 낭만주의시대를 개관함과 함께 낭만주의문학 속에서도 여러 작가들의 독특한 낭만주의관을 살펴보고 러시아낭만주의가 서유럽낭만주의와 다른 특성들을 재검토한다.

This course will familiarize students with poetry, novel, drama and literary theories of romanticism which emerged in the 19th century Russian literature. It will offer students an overview of the Romantic Period and several authors’ original views on romanticism, leading to the re-exploration of the features of Russian romanticism that distinguish it from the romanticism of Western Europe.

106.740 러시아어의미론 3-3-0
Russian Semantics

러시아어학의 여러 전문들에 산재해보고, 일반 언어학적 의미 이론의 슬라브어인 러시아어에서는 어떻게 작용이 가능한지를 살펴보는 것을 목적으로 한다.

This course reviews polemics in Russian semantic theory and how these polemics can be applied to semantic theories of Russian language in general.

106.742A 러시아어어법연구방법론 3-3-0
Methods of Research in Russian Linguistics

다양한 연구방법론들을 살펴보고, 이를 연구방법론들이 어떤 방식으로서 작용할 때 어떠한 가능성과 한계를 지니는지를 살펴봄으로서 러시아어의 분석이 환경에 따른 다양한 방법론들이 타당할 것인가에 대한 논의를 한다.

In this course, students will learn various linguistic methodologies, weighing their possibilities and limitations when applying them to the actual language. They will also discern the best methodologies for analysis.

106.744A 러시아문법이론 3-3-0
Theories in Russian Grammar

프로그 학과 이래로 집계해온 여러 문법이론들의 역사를 살펴보고 그 이론들이 해당 시기에 타당성과 장단점을 가졌던 이유들
대학원(Graduate School) 노어노문학과(Dept. of Russian Language & Literature)

에 대해 연구하며, 각 시기의 여러 이론들이 현재 러시아어를 연구하는 데 어떠한 기여를 할 수 있는지에 대해 살펴본다.

This course examines the history of various linguistic theories, analyzing the role of raison d’etre in their times, and the way the theories can contribute to the study of modern Russian.

106.744 러시아어사특강 3-3-0

Topics in History of Russian Language

고대부터 현재에 이르기까지 러시아어의 역사에 대해 살펴보고 그 개별 역사에서 중요했던 언어변화들을 숙지하고, 그러한 변화들이 현재 러시아어에는 어떠한 반영을 남겼는지에 대해 살펴본다.

This course covers the history of the Russian language from the 11th century to the present time. We will study major linguistic changes that occurred in each period and their reflections within modern Russian language.

106.745 고대러시아문학 3-3-0

Old Russian Literature

러시아문학의 구분에 있어 표트르대제 이전의 시대를 고대러시아문학이라 한다. 여기서 러시아문학의 기원을 어디에서 찾을 것인지, 이 시기 동안의 러시아문학으로 간주되어질 수 있는 작품들로는 무엇이 존재하는가라는 물음은 시작으로 고대러시아문학의 특성과 성격을 고찰해본다.

Old Russian literature refers to literature before the age of Peter the Great. In this course, students will explore the characteristics of Old Russian literature, starting with questions related to its origins and composition.

106.746 18세기 러시아문학연구 3-3-0

Studies in 18th Century Russian Literature

18세기는 표트르대제에 의해 취해진 서구화정책으로 다양한 서구문화를 수용하게 된다. 특히 문학사적으로 보면 러시아고전주의와 낭만주의의 전조로서 감랑주의가 이 시기동안 유행하게 되는데, 이러한 두 시조를 중심으로 근대 러시아문학의 토대를 형성하자는 18세기를 고찰하고자 한다.

In the 18th century, Peter the Great’s policy of westernization enabled Russia to accept western culture. In particular, classicism, sentimentalism became popular, preordaining the appearance of Russian romanticism. This course will familiarize students with these two major literary trends. Students will explore the 18th century as a bridge between old Russian literature and contemporary Russian literature.

106.803 대학원논문연구 3-3-0

Dissertation Research

이 강좌는 학위논문을 준비하는 대학원생들을 대상으로 하는 과목이다. 학생들이 지도교수와의 계속적인 면담과 토론을 통해 논문의 주제 및 구체적 방향을 결정하고, 국내외의 자료들을 수집, 연구와 집필을 해나갈 수 있도록 돕는다. 이 과정에서 학생들은 전체 논문학의 구도 속에서 자신의 연구방향을 결정할 수 있고, 깊이 있는 접근을 통해 논문을 완성할 수 있을 것이다.

This course is designed for graduate students preparing their theses. They will research and prepare for their theses under the guidance of their respective thesis advisor. Course specifics will be at the discretion of the individual faculty advisors.
스페인어연구방법론 3-3-0

Spanish Morphology

스페인어의 의미의 최소단위에 해당하는 형태를 연구 분석하며 크게 파생형태론과 문법적 형태론으로 구분하여 습득한다. 파생형태론에서는 접사에 의한 파생관계를, 문법적 형태론에서는 동사론과 관련성을 중심으로 연구한다.

The focus of this course lies in studying the morpheme which is the smallest unit of meaning. This study is related to Derivative Morphology and Grammatical Morphology. In detail, we will deal with the derivative relation caused by affixes in the former and the relation with the syntax in the latter.

스페인어의미론 3-3-0

Spanish Semantics

스페인어 문장의 의미를 분석하는 분야로서 그 이론적 분석과 응용적 연구를 동시에 수행한다. 문장단위의 의미론뿐만 아니라 단일어의 의미론까지 문화론에 대한 연구도 다룬다.

This course offers a study of the meaning of Spanish. The area of concentration will be the theoretical applications related to Spanish semantics. We will deal with the theoretical methodology of semantics in verbal and nonverbal perspectives.

스페인어항태론 3-3-0

Spanish Syntax

이 과목은 현재 스페인어 문장의 동시구조를 변형생성문법과 어휘기능문법으로 분석하고 스페인어 구조를 기술하는 데 있어 적합한 통사론을 연구하는 데 중점을 둔다. 특히, 생성문법의 초기구조에서부터 최근의 최소주의 문법에 이르기까지 통사론의 연구방법론에 대한 전반적인 이해를 목표로 한다. 특히 근대 발달하게 연구되고 있는 흰스키의 생성문법에서 파생된 여러 통사론의 특성을 연구하고 언어자료에 응용할 수 있도록 한다.

In this class, students will analyze the syntactic structure of Spanish sentences using transformational generative grammar and lexical functional grammar. Specifically, this course provides an introduction to syntax, which has been especially developed by the recent minimalist program since the earlier theory of the generative grammar tradition. Students will study the main characteristics of syntactic theories derived from Chomsky’s Generative Grammar, applying them to the linguistic corpus.

스페인어 학점구조는 “학점수-주당 강의시간-주당 실습시간”을 표시한다. 한 학기는 15주로 구성됨. (The first number means "credits"; the second number means "lecture hours" per week; and the final number means "laboratory hours" per week. 15 weeks make one semester.)
In this course, students will choose one topic among important subjects such as 'fantastic literature', 'magical realism', 'modernity and postmodernity' and 'colonialism and postcolonialism', which are highly pertinent to Hispanic-American literature studies. This course will be mainly conducted based on class discussion and presentation of students.

In this course, students will examine various linguistic methodologies, weighing the strengths and limitations of their respective applications. Specifically, they will discuss on which methodology is most appropriate for the analysis of Spanish.

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tigations of how the Code-Switching between both languages is realized. By this kind of activities, the course will re-

search Spanish used in the USA and examine the Code-

Switching phenomenon between English and Spanish as a Hispanic culture.

107.564 스페인언어학과 교수법 3-3-0

Spanish Linguistic Theory and Method of Teaching

This course focuses on the development of feminist litera-

ture of Latin America from Mexico’s Sor Juana Ines de la Cruz, the remarkable author of the colonial period, all the way to the 20th century. The course attempts to explore both particular and universal aspects of the Latin American feminist literature by analyzing some representative works, which allow us to encounter the concrete ways in which literature exercises challenges to machismo and marianismo, and how it yields responses to the significant heterogeneity that characterizes the political and economic situations in Latin America.

107.565 스페인황금세기연극론 3-3-0

Spanish Golden Age Theatre

This course takes an anthropological perspective in understand-

ing Latino Culture: Critical review of the ethnographic literature on Latino covers the traditional times and the con-

temporary period. Theoretical works which attempt to define the characteristics of Latino Culture will be included. The relationship between common American cultural characteristics and those of peculiar to Latino will be emphasized.

107.571 라틴노문학연구 3-3-0

Studies in Latino Literature

This course takes aim at looking for the new method of application of the established Spanish linguistic theory to the education. First, it will examine the possible application of the generative grammar theory to the teaching method. In addition, this course will allow students a chance of teaching. It is expected to strengthen pure theoretical studies, harmonize them with applied linguistics and apply to the practical Spanish education.

107.572 라틴노문화연구 3-3-0

Studies in Latin American Culture

This course focuses on the development of feminist litera-

ture of Latin America from Mexico’s Sor Juana Ines de la Cruz, the remarkable author of the colonial period, all the way to the 20th century. The course attempts to explore both particular and universal aspects of the Latin American feminist literature by analyzing some representative works, which allow us to encounter the concrete ways in which literature exercises challenges to machismo and marianismo, and how it yields responses to the significant heterogeneity that characterizes the political and economic situations in Latin America.

107.582 스페인황금세기연극론 3-3-0

Spanish Golden Age Theatre

This course focuses on the development of feminist litera-

ture of Latin America from Mexico’s Sor Juana Ines de la Cruz, the remarkable author of the colonial period, all the way to the 20th century. The course attempts to explore both particular and universal aspects of the Latin American feminist literature by analyzing some representative works, which allow us to encounter the concrete ways in which literature exercises challenges to machismo and marianismo, and how it yields responses to the significant heterogeneity that characterizes the political and economic situations in Latin America.

This course focuses on the development of feminist litera-

ture of Latin America from Mexico’s Sor Juana Ines de la Cruz, the remarkable author of the colonial period, all the way to the 20th century. The course attempts to explore both particular and universal aspects of the Latin American feminist literature by analyzing some representative works, which allow us to encounter the concrete ways in which literature exercises challenges to machismo and marianismo, and how it yields responses to the significant heterogeneity that characterizes the political and economic situations in Latin America.
107.583 Spanish Post-War Literature

This course takes a socio-historical approach on the Spanish Civil War, which resulted from aggravated problems of Spanish Modernity, and examines how Spanish post-war literature reflects the deep trauma of the past. Through this approach, the course looks into the impact Spanish Civil War had on the identity formation of the contemporary Spanish society. Another important theme of this course is to examine the cultural dimension of the Civil War trauma in Spanish literature reflecting the deep trauma of the past. Through this course, students will be able to analyze and interpret the literary works of Spanish Renaissance.

107.584 Early 20th Century Spanish Literature

This course studies early 20th century Spain, a period of national crisis caused by many tragic accidents, and investigates another Renaissance of Spanish Literature called “Silver Age” in the history of Spanish literature. This course also examines literary heritage of the 9 Generation, 27 “Silver Age” in the history of Spanish literature. This course is designed for graduate students preparing their theses. They will research and prepare for their theses under the guidance of their respective supervisors. Course specifics will be at the discretion of the individual faculty advisors.
pothesis and methodologies developed in Second Language Acquisition (SLA) studies. Throughout the course, the students will be guided and equipped to design and perform their own acquisition research, based on generative approaches to Spanish Second Language Acquisition. To this end, this course is built in two-folds, theoretical approaches and methodological approaches. First, among various approaches taken in the SLA studies, this course finds its foundation in Generative Second Language Acquisition (GSLA). In the second part, we will consider how core grammatical items in Spanish linguistics are studied reading former researches. We will also look into the concept of cross-linguistics influence (CLI), a factor that must be taken into account in acquisitional studies. As a final step, students will learn three major methodologies applied in SLA experiments.
108.518  
**Studies in Phonetics 1**

- The course introduces students to the major research topics in phonetics, including articulatory, acoustic, and auditory phonetics. It will cover various phonological theories and focus on how they are different in explaining attested patterns. Specifically, beginning with the early generative rule-based approach, which has been proposed in The Sound Pattern of English by Chomsky and Halle (1968), this course will go over various phonological theories and their implications for the study of language.

108.519  
**Studies in Phonology 1**

- This course provides an overview of recent developments in phonology. It will cover various phonological theories, including specification theory, feature geometry, and Optimality Theory. The goal of this course is to introduce the major research results, research questions and analytical skills in the field of phonology. We will go over various phonological theories proposed thus far, focusing on how they are different in explaining attested patterns.

108.520  
**Studies in Syntax 1**

- This course introduces students to the syntactic analysis of natural language. It will cover various syntactic theories, including transformational grammar, functional grammar, and minimalist syntax. The course will also study the main characteristics of theories derived from Chomsky's Syntactic Structures (1957) and the research between syntax and semantics.

108.521  
**Studies in Semantics 1**

- In this course, students will research the interface between syntax and semantics. They will study the main characteristics of functional grammar since Chomsky's Syntactic Structures (1957) and its implications for the study of language. This course will also study the main characteristics of theories derived from Chomsky's Syntactic Structures and the research between syntax and semantics.

Semantics, a scientific study of linguistic meaning, deals with the following topics: domain and methodology, knowledge of linguistic meaning and word knowledge and meanings (lexical semantics). This graduate course will also investigate how to compose and interpret complex expressions (compositional semantics) as well as how formal semantics contributes to computerized language (pragmatics).
knowledge of comparative linguistics. Emphasis will be placed on comparisons, outcomes, and problem-solving strategies of Altaic languages such as Manchu-Tungus, Turkish, and Mongolian. Students will apply the Altaic Hypothesis to investigate relations among languages. They will also examine the sufficiency of the Indo-European Linguistic methodology.

Students in Indo-European Linguistics

This course deals with special topics in linguistics. Students will conduct critical analysis of earlier works and the evaluation methods used to analyze these texts.

108.527A Seminar in Phonetics

This course deals with special topics in linguistics. Students will conduct critical analysis of earlier works and the evaluation methods used to analyze these texts.

108.534 Seminar in Syntax & Semantics 1

This course deals with special topics in linguistics. Students will conduct critical analysis of earlier works and the evaluation methods used to analyze these texts.

108.535A Seminar in Computational Linguistics 1

This course deals with special topics in linguistics. Students will conduct critical analysis of earlier works and the evaluation methods used to analyze these texts.
The goal of this course is to expose students to unfamiliar languages. Students will examine and discuss these methods in order to better understand them.

In this course, we will try to understand as well as practice individual languages and their traditions. The scope will include diverse perspectives of not only contemporary languages but languages used in previous times.

Having grasped the historical changes in the object and methods of linguistic research and acquiring a broad understanding of linguistics, students will gain an in depth understanding of the characteristics of the theories of each generation of linguists from ancient times to the present. Furthermore, the course will focus not only on the research direction and the major scholars of each generation of linguistics, but also on their theoretical backgrounds and their effects.

Studies in Computational Linguistics

Having grasped the historical changes in the object and methods of linguistic research and acquiring a broad understanding of linguistics, students will gain an in depth understanding of the characteristics of the theories of each generation of linguists from ancient times to the present. Furthermore, the course will focus not only on the research direction and the major scholars of each generation of linguistics, but also on their theoretical backgrounds and their effects.

Studies in History of Linguistics

This course will cover traditional dialectology up to recent generative and urban dialectology. Analysis will be conducted on geological and social dialects with consideration of sociolinguistic factors, dialectal difference and correlation of language change.

Studies in Psycholinguistics

This course provides an introduction to the general research methods of psycholinguistics. Students will examine and discuss these methods in order to better understand them.
설명된 학기마다 다시 수강신청을 할 수 있다.

In this course, we will discuss papers which deal with recent issues in the field of phonology, exploring a way to resolve them. The main topic of the course may vary depending on semester, and students may register this course more than once for different topics.

108.625A 음성언어처리연구 1 3-3-0

Studies in Spoken Language Processing 1

본 과목에서는 음성언어처리 분야를 이해하는데 필요한 언어학과 공학의 학계적인 기초이론을 음성언어의 구조, 음성언어분석을 위한 신호처리 기초 및 음성신호의 특정 분석, 음성인식 및 음성언어 해법 방법 소개, 음성합성 및 음성정보처리 방법 소개를 중심으로 배우며, 또한 각종 소프트웨어 도구를 사용해서 실질적인 음성언어처리 응용에 언어학의 기초이론들이 어떻게 계산모델로 적용되는지를 확인한다.

Spoken language interface provides the most natural communication for human-computer interaction. Spoken language processing refers to theories and technologies related to speech recognition, text-to-speech synthesis, and spoken language understanding for building a spoken language interface. This course systematically introduces fundamental theories needed to understand the diverse and interdisciplinary subject related to spoken language processing. Furthermore, using various software tools, this course also shows how the fundamental theories can be applied to solve real problems in spoken language processing.

108.703 형태론연구 3-3-0

Studies in Morphology

이 강좌는 형태론 분야에서의 최근이론과 연구과정을 논의한다. 형태론과의 본질, 과정학문론, 문장학문론 및 형태-음운-통사-이취부의 관계를 자세히 다룬 것이다. 한국어와 같은 언어에서의 자료를 함께 다룬다.

This course deals with current theories and research problems in morphology: the nature of morphological structure, derivational and inflectional morphology, the relation between morphology and phonology, syntax, and the lexicon will be discussed in detail. Students will be trained to analyze the morphological phenomena of Korean as well as other lan- guages.

108.716 음성학연구 2 3-3-0

Studies in Phonetics 2

이 과목은 <음성학연구 1>(108.518)의 과목 내용을 기초로 이론의 확대적용 및 발전을 더욱 깊이 있게 모색한다.

This course is an advanced continuation of <Studies in Phonetics 1>. The goal of this course is to expand the students' knowledge of phonetics while deepening their theoretical understanding of it.

108.717 음운론연구 2 3-3-0

Studies in Phonology 2

이 과목은 <음운론연구 1>(108.519)의 과목 내용을 기초로 이론의 확대적용 및 발전을 모색한다. 미해결된 음운론의 문제들에 대한 다양한 논문을 읽고 토의하며 문제에 대한 새로운 해결책을 모색하는 것을 목표로 한다.

This course is an advanced continuation of <Studies in Phonology 1>. We will review recently published papers about some controversial issues in phonology, exploring a way to resolve them.

108.718 통사론연구 2 3-3-0

Studies in Syntax 2

이 과목은 <통사론연구 1>(108.520)의 과목 내용을 기초로 이론의 확대적용 및 발전을 더욱 깊이 있게 모색한다. 미해결된 통사론의 문제들에 대한 다양한 논문을 읽고 토의하며 문제에 대한 새로운 해결책을 모색하는 것을 목표로 한다.

This course is an advanced continuation of <Studies in Syntax 1>. The goal of this course is to further expand and refine the students' knowledge of syntax while deepening their theoretical understanding of it.

108.719 의미론연구 2 3-3-0

Studies in Semantics 2

이 과목은 <의미론연구 1>(108.521)의 과목 내용을 기초로 이론의 확대적용 및 발전을 더욱 깊이 있게 모색한다.

This course is an advanced continuation of <Studies in Semantics 1>. The goal of this course is to refine and expand the students' knowledge of semantics while deepening their theoretical understanding of it.

108.720 역사비교언어학연구 2 3-3-0

Studies in Historical Comparative Linguistics 2

이 과목은 <역사비교언어학연구 1>(108.522)의 과목 내용을 기초로 이론의 확대적용 및 발전을 더욱 깊이 있게 모색한다.

This course is an advanced continuation to <Studies in Historical Comparative Linguistics 1>. The goal of this course is to refine and expand the students' knowledge of Historical Comparative Linguistics while deepening their theoretical understanding of it.
108.725A 역사비교언어학연습  3-3-0
Seminar in Historical Comparative Linguistics

최근 들어 다시 활발해지고 있는 역사비교언어학 연구의 다양 한 방법론과 연구결과들을 검토한다. 특히 개별 언어의 계통연구와 관련한 비교언어학적 연구와 통사변화와 관련한 유형론적 연구도 같이 있게 다룬다. 또한 역사비교언어학의 제한이란이 실제의 언어변화로부터 어떻게 일반화될 수 있는가의 문제를 구체적 언어 자료를 가지고 살펴보며, 사회언어학적 연구방법론과 결과를 언어 변화에 활용할 수 있는 가능성을 탐구한다.

The course aims at evaluating currently used methodologies and their results in the field of Historical Comparative Linguistics. Genealogical studies on particular languages and typological approach to syntactic changes over time will be presented as main subjects of the course. The arguments will be extended to the greater issues like generalization of linguistic phenomena based on Historical Comparative Linguistics theories or Sociolinguistic problems.

108.727 언어유형론연구  3-3-0
Studies in Linguistic Typology

언어유형론은 여러 언어들이 가지는 구조에 근거하여 유사성과 차이점을 발견하고 그 특징을 기준으로 하여 몇몇 유형을 설정하여 그들과의 관계에 대해 연구한다. 다양한 언어에 대한 유형론의 연구는 음운론, 형태론통사론, 의미론 등 언어학 전 분야에서 이루어지며, 또한 유형론 연구는 언어 변화를 규명하고 규칙화하는 데에도 기여하고 있다. 이 강의에서는 지급까지 이루어진 언어유형론에 대한 연구 성과를 살펴보고 그 이론의 발전 방향에 대한 논의도 논의한다.

Linguistics typology looks at the relationships amongst languages based on their similarities and differences. The typological study of a variety of languages should be performed in all fields of linguistics including phonology, morphology, syntax, and semantics. In addition, typological study contributes to the investigation and the regularization of language change. This course will examine the results of studies in linguistic typology, and discuss their directions and developments.

108.730 통사·의미론연습 2  3-3-0
Seminar in Syntax & Semantics 2

이 과목은 《통사·의미론연습 1》(108.534)의 과목 내용을 기초로 이론의 확대적용 및 발전을 더욱 깊이 있게 모색한다.

This course is an advanced continuation of 《Seminar in Syntax and Semantics 1》. The goal of this course is to expand the students’ knowledge of Syntax and Semantics while deepening their theoretical understanding of it.
109.601 한국고대사연구  3-3-0

Studies in Ancient History of Korea

This class will handle subjects selected from the events that occurred during the ancient period of Korean history. This will include the formation of the Gojosun Dynasty and the unification of Shilla. A variety of areas will be covered along with the examination of numerous written and epigraphical texts.

109.605 한국현대사연구  3-3-0

Studies in Contemporary History of Korea

This class will closely examine selected historical events since the establishment of the Gojosun dynasty until the Unified Shilla era. Subjects such as the political structures of the states, definition of the territories and borderlines in those times, social structures, and means of operation will be analyzed in class.

109.613 한국사회사연구  3-3-0

Studies in Korean Social History

This class will handle one of the most important areas in historical studies, namely the social history of Korea. It will highlight the various kinds of social units which have existed throughout Korean history with factual details.

109.618 한국대외관계사연구  3-3-0

Studies in the History of Korean Foreign Relations

This class will closely examine selected historical events since the establishment of the Gojosun dynasty until the Unified Shilla era. Subjects such as the political structures of the states, definition of the territories and borderlines in those times, social structures, and means of operation will be analyzed in class.

109.649 한국고대사특강  3-3-0

Topics in Ancient History of Korea

This course will provide students with detailed studies of the political, social, and cultural changes during the Koryo Dynasty. Also examined will be the unification of Shilla and the establishment of the Gojosun Dynasty. A variety of areas will be covered along with the examination of numerous written and epigraphical texts.
This course will examine the most important political aspects and events of the Koryo Dynasty, including the unification efforts of the early days, the national organization of the administration structure, the insurgents and eventual takeover by military personnel, the series of Mongol invasions, and the eventual collapse of the dynasty. Through this study, the student will be able to get a better understanding of the Koryo Dynasty.

109.672 한국사와 동북아시아 3-3-0
Korean History and North-Eastern Asia

This class will examine the relationships the Koreans have had with the Chinese and Japanese during the early days of their history. Questions such as how the international environment affected the political bodies scattered throughout the region, and how those bodies manipulated their given situations to their advantage will be answered during class.

109.677 규정각차료연습 3-3-0
Seminar in Kyujanggak Collection

The Gyujanggak is one of the biggest document archives in Korea. In this course, the students will analyze numerous historical documents collected at the Gyujanggak Archive, especially those that were created during the Chosun dynasty.

109.683 한국근대사특강 3-3-0
Topics in Modern History of Korea

This class will deal with important subjects selected from events occurring after the Korean liberation of 1945. These important events and their repercussions will be examined with respect to international environments and their significance in the present context.

109.684 한국현대사특강 3-3-0
Topics in Contemporary Korean History

This course will examine new directions in Korean historiography concerning the change from institutional, political, and economic history towards social and cultural history in the 1970-90s, down to present. It will study important emerging methodologies of history, including the cultural turn, linguistic turn, and the history of memory.

109.686 한국사시대구분론 3-3-0
The Periodization of Korean History

This course presents samples of chronological periods of the Korean history with an aim to further students' understanding of the meanings of the historical evolution. Selected periods of time are viewed and examined through the study of the political, economical, social and cultural aspects of the periods.
This course will provide students with a systematic understanding of the history of ancient Korea, leading them to understand its place within the full sweep of Korean history and its relations to other historical periods. It will be helpful not only for those majoring in the history of ancient Korea but also for others who have different fields of interest. This course will also be useful for future lecturers teaching in fields related to Korean history or the ancient history of Korea.

Survey of Medieval Korean History

"Koryo-sa" and other medieval society. Various historical texts, including the 'Koryo-sa, as well as contemporary scholarship, will be examined. Class will address the issues of how Koryo society emerged from its prior ancient order, and the means by which it established its own identity as a newly-formed medieval society. Various historical texts, including the ‘Koryo-sa, as well as contemporary scholarship, will be examined.

Survey of Early Modern Korean History

The Joseon period may be termed the ‘Early Modern Period’ in Korean history. This class will address almost every aspect of the five centuries of the Joseon period, including its political, economic, and cultural history. This course examines the historical processes underlying the formation of the daily life of contemporary Koreans. It will help understand the history of the 20th century Korea by examining the perceptions and emotions of the people reflected in various sources of modern times such as mass media and diaries.

Survey of Modern Korean History

19세기 말에서 1945년에 이르는 기간은 문화형성과 대한제국 수립 및 일제 식민지 시기로 이어지는 격동기이다. 이러한 한국근대사의 주요 사건과 인물, 중심 주제에 관한 주요 연구동향을 파악하는 과목이다.

The period from the late 19th century to 1945 was a turbulent period in Korean history, involving the opening to the outside world, the establishment of the Great Han Empire, and leading to Japanese colonialism. This course examines major scholarship on important events, figures, and themes related to modern history of Korea.

Seminar in Historical Materials of Modern Korea

The period from the late 19th century to 1945 was a turbulent period in Korean history, involving the opening to the outside world, the establishment of the Great Han Empire, and leading to Japanese colonialism. This course examines major scholarship on important events, figures, and themes related to modern history of Korea.
구하는 과목이다. 주요 사료를 선별하여 그 사료에 대한 서지학적, 문헌학적, 역사학적 특성과 구조를 해명함으로써 논문작성을 위한 필수적인 훈련을 쌓는다.

이 과목은 한국의 고대 문화를 둘러싼 여러 영역을 전반적으로 살펴본다. 고대사의 문화 형상, 문화 전반의 변화, 그리고 문화의 구조와 발전을 이해하는 데 필수적인 훈련을 쌓는다. 특히 고대 문화의 구조와 발전을 이해하는 데 필수적인 훈련을 쌓는다.

This class will examine the format and contents of various historical materials necessary for the studies of modern and contemporary history of Korea. Major text materials will be selected and the bibliographical, philological, historical characteristics of those materials will be closely examined so that students will have the opportunity to train themselves for future research.

M1248.001500 한국유교사연구 3 - 3 - 0
Studies in History of Korean Confucianism

한국사에서 유교는 이미 삼국시대에 유입되었으며 시기가 내려울수록 중요성이 커져 사회운영의 핵심리인으로 작용하였다. 특히 조선은 유교가국가라고 할 만큼 국가와 사회의 운영에서 유교의 비중이 점대적이었다. 한국사에서 유교 사상과 문화가 미진 영향을 보인 영역에 쉽게 살펴본다.

This class is a study of Confucianism in Korea. Already introduced to the Korean peninsula during the Three Kingdoms Period, the intellectual position of Confucian thought in Korea grew tremendously, and became the ruling ideology of the Joseon dynasty. This class will highlight and examine in depth its influences over the Korean culture.

M1248.001600 고대문화사연구 3 - 3 - 0
Studies in Cultural History of Ancient Korea

삼국과 통일신라, 발해를 중심으로 한국의 고대국가들이 발전시킨 문화 전반을 체계적으로 학습한다. 이를 기초로 삼국의 정치, 사회적 환경이 어떻게 서로 연관되었는지, 그리고 각국별 특색 있는 문화가 어떻게 창달되었는지 주제를 갖는다. 특히 불교와는 고대문화 여건이 어떻게 영향을 미쳤는지를 탐구한다.

This class will focus cultural aspects that developed in the ancient states of Korea, including the Three Kingdoms, Unified Silla, and Parhae. Based on this, it will examine how the political and social conditions of the three states were interrelated, and how they developed unique culture of their own. It will also trace the changes in ancient Korean culture following the introduction of Buddhism.

M1248.001700 조선시대사상사연구 3 - 3 - 0
Studies in Intellectual History of Early Modern Korea

조선은 유교사상가들에게 의해 건국되고 조선후기에는 주자학이 정치·사회적으로 정착되었다. 그러나 주자학 외에도 유학의 다양한 정치가들이 곳곳에서 모색되고 서학 등이 새롭게 유입되기로 하는 등 정서세척으로 다양한 사상적 편차를 보였던 시기이기도 하다. 지금까지 남겨진 문고에 많은 여러 시기의 사상적 추이와 특성에 대해 심도 있는 학습을 한다.

Founded by Confucian thinkers and Confucian philosophies, the Joseon state acquired an even stronger position as the motive force for the reformation in the late Joseon period. At the same time, other new lines of thoughts were also being introduced by Korean thinkers, including Christianity. This class will analyze the “new” ideas of that period and their influence. Included in the study will be an examination of the vast remaining archives of personal anthologies from that era.

M1248.001800 한국근현대사회사연구 3 - 3 - 0
Studies in History of Social Movements in Modern Korea

개항 이래 근대까지 한국 사회의 변화를 역사적 관점에서 탐구하는 과목이다. 사회 계층, 사회 변동, 사회 운동을 시기별·주제별로 해명하는 작업을 수행하게 될 것이다. 해당 시기와 주제에 대한 연구가 정리부터 자료 독해에 이르기까지 구체적으로 탐구하는 과목을 수행할 것이다.

This course examines Korea’s social changes from the ‘port-opening’ era to the present day in historical perspective. Students will be expected to study social institutions, changes, movements by examining scholarship and the reading of various historical sources.

M1248.001900 한국전근대사회사연구 3 - 3 - 0
Studies in Intellectual History of Modern Korea

한국의 근현대사는 외세의 침략과 이에 맞서서 독립을 지켜내고 우리민족의 새로운 근대국가 건설을 시도하는 다양한 정치·사회적 경향들이 혼재한 시대이다. 주자학적 전통에서 공화주의적 근대국가 건설 방향과 사회주의 사상에 이르기까지 다양한 시대들로의 유입과 변모, 구체적 전개과정에 대해서 학습하는 과목이다.

The modern and contemporary period in Korean history is characterized by numerous political and philosophical efforts intended to struggle against foreign oppressors, achieve national independence, and establish modern nation-state. In this course, students will examine various schools of thought, including Neo-Confucianism, republicanism aimed at the modernization of the country, and socialism.

M1248.002000 한국전근대사회사연구 3 - 3 - 0
Studies in Historiography of Pre-modern Korea

전근대의 역사서술 방식은 현재의 것과는 매우 달랐다. 이 과목은 고대부터 조선시대에 이르기까지 한국 전근대 시기에 한국인들의 의도에서 이루어진 역사서술 방식에 대한 이해와 기에 덧든 사상사적 배경을 연구 및 검토하도록 한다.

The nature and goals of historical narration in Korea prior to the 20th century differed radically from those currently used. This course examines the character of historical narration in Korea from the ancient period through the Choson dynasty, seeking to elucidate a better understanding of the philosophical background that produced it.

M1248.002100 한국근현대사회사연구 3 - 3 - 0
Studies in Historiography of Modern Korea

근대적 역사서술 방식이 새로 유입되면서 설립, 발전한 한국 근현대 역사학의 다양한 조류들을 학습한다. 개항기와 일제 식민지기의 문고 해방 이후 한국 사회사의 전개과정을 정리하고, 각 조류의 서술 방법론과 특성, 역사학적 편향을 복잡하게 연구한다.
This course studies various trends in modern Korean historiography, which was formed and developed by the introduction of modern historical methodologies from the West. Its goal is to examine overall development of Korean historiography in modern era and conduct extensive studies on their narrative methodologies, characteristics, and historical implications.

M1248.002200 한국과학사연구 3-3-0

Studies in History of Korean Science

This course studies various trends in modern Korean historiography, which was formed and developed by the introduction of modern historical methodologies from the West. Its goal is to examine overall development of Korean historiography in modern era and conduct extensive studies on their narrative methodologies, characteristics, and historical implications.

M1248.002700 한국경제사특강 3-3-0

Topics in Korean Economic History

This course examines in depth characteristics of state and society in the Choson period, focusing on specific issues drawn from selected major issues and fields of inquiry. Various specialized topics drawn from political, socio-economic, and intellectual history will be addressed.

M1248.002800 한국문화사특강 3-3-0

Topics in Korean Cultural History

This course examines the special characteristics of the Koryo period within Korean history, through an examination in depth by theme and topic of Koryo society.
This course studies the characteristics of, and the changes in, the kinship and status systems that persisted since the ancient period of Korea by examining relevant primary materials and scholarship. It will help students understand the basic principle of how the traditional society operated through an in-depth examination of various themes related to kinship system and status system that placed restraints on individuals.
111.603 전한시대사연구 3-3-0

Studies in Qin-han Dynasties

전국 시대의 분열을 극복하고 정치, 경제, 사회, 문화 등의 다양한 면에서 중국의 원형이라는 데 부합할 만한 전통적인 성립의 중심으로 그 역사를 이해하는 목적으로 한다. 따라서 이 시대의 주요한 사료와 특성을 이해할 수 있는 논지를 검토하고 있다.

This course is designed to provide students with knowledge of the formation and development of the Qin-Han empire. Such a knowledge will help them understand the major aspects of Chinese politics, economy, society and culture.

111.604 중국남북조시대사연구 3-3-0

Studies in History of Nan-bei-chao Period in China

전국 시대의 분열을 극복하고 정치, 경제, 사회, 문화 등의 다양한 면에서 중국의 원형이라고 할 수 있는 진한 제국의 성립을 중심으로 그 역사상의 이해를 목적으로 한다. 따라서 이 시대의 주요한 사료와 특성을 이해할 수 있는 논지를 검토하고 있다.

This course is designed to provide students with knowledge of the formation and development of the Qin-Han empire. Such a knowledge will help them understand the major aspects of Chinese politics, economy, society and culture.

111.607 명대사연구 3-3-0

Studies in Ming China

동몽의 지배에서 벗어나 한족 중심의 국가를 건설한 명조의 중국 지배 체제의 확립 과정과 그 특성을 검토한다. 또한 명대의 급격한 사회·경제적 변화, 사상적 변화 등의 문제, 그리고 각 지방마다 독자적인 성격이 어떻게 나타나는지에 대해서 높이 이해한다. 따라서 이를 보다 심화하기 위해 이 시대의 주요한 사료와 특성을 이해할 수 있는 논지를 검토하고 있다.

This course is designed to help students understand the social, economic, and political development of Ming China. Documents including articles from the local gazettes will be used for class material.

111.608 청대사연구 3-3-0

Studies in Qing China

1840년 서양의 침략이 본격화되기 이전, 만주지역에서 흥기한 만주족이 중국을 정복, 통치하면서 보이는 특성을 이해하는 것을 목적으로 삼고 있다. 만주가 소수 민족이었기 때문에 복잡하고 명대의 제도를 온전하게 이어온 만주의 변화를 통해서 중국을 이해하려고 한다. 이를 통해 중국의 지배 체제의 특성을 이해할 수 있는 논지를 검토하고 있으며, 그와 관련된 논지를 정리하고 있다.

This course helps students understand the characteristics and continuity of Qing empire Manchus. Readings of basic historical documents and researches will be included.

화점구조는 "학점수-주당 강의시간-주당 실습시간"을 표시한다. 한 학기는 15주로 구성됨. (The first number means "credits"; the second number means "lecture hours per week"; and the final number means "laboratory hours per week. 15 weeks make one semester.

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111.618 중국신사층연구 3-3-0

Studies in Chinese Gentry

명청 시대 과거 제도와 학교 제도의 결합으로 세세하게 된 신사층의 사회 경제적인 역할을 통해서 명청시대 중국사의 이해를 도모하는 것이 본 강의의 목표이다. 따라서 본 강의에서는 신사층의 사회 경제적인 역할이 과연 순기능적이라면, 아니면 역기능적이라는 점을 통해 지방 통치의 실태와 그 전개 과정을 이해한다. 이를 위해 신사층의 역할을 주요하게 엿볼 수 있는 지방지나 족보 등의 구체적인 자료를 분석·점토함으로써 그들의 위상과 역할을 재조명한다.

This class will help students to further their understanding of the social conditions, functions, influence, and modern development of the gentry during the Ming-Qing era of China.

111.619 중국토지제도사연구 3-3-0

Studies in the Evolution of Land-ownership in China

고대 정전제로부터 시작된 중국의 토지 제도의 발전 과정을 이 해함으로써 농경 사회인 중국의 경제의 일단면을 구체적으로 이해하는 것을 본 강의의 목적으로 한다. 따라서 고대 이래 중국의 토지 소유 관계와 그 이념의 변화 과정, 그리고 그 심상을 구체적으로 검토하기 위해 그와 관련된 관계 문헌인 호적, 토지 문서 등 을 구체적으로 검토하고, 그와 관련된 논지를 심층적으로 이해한다.

This class will examine the evolution of land ownership in China, which was basically an agricultural society. It will give students a deeper understanding of the Chinese economy.

111.621 동아시아국제관계사연구 3-3-0

Studies in History of East Asian International Relation

고대부터 현대에 이르는 시기 간밀한 관계를 맺고 있었던 중국을 중심으로 한 동아시아 국가들 간의 정치적인 관계를 이해하려는 것이 본 강의의 주요한 목표이다. 따라서 각 시대에 따라서 나타나는 각 국가 간의 다양한 면모를 구체적으로 이해하기 위해 국제 관계의 이해에 필요한 자료를 토대로 정립, 검토하고 그와 관련된 논지를 정리하여 이해를 심화한다.

This class will examine the history of international relations in East Asia, and help students understand how the international environment affected the political bodies scattered throughout the region, and how those bodies turned such situations to their advantage.

111.622 동서교류사연구 3-3-0

Studies in East-West Relations in Pre-modern Era

동양과 서양의 문화 교류를 매개한 중앙아시아 중심으로 어떻게 다양한 문화가 실크로드를 통해서 전해졌는가 하는 점을 이해하는 것을 본 강의의 목표로 한다. 따라서 동양 세계에 보이는 서양의 다양한 문화 요소가 그 사회의 변화에 어떤 영향을 가져왔고, 또한 반대로 어떤 영향을 보았는가 하는 점을 이해한 다. 이를 위해 동서 교류와 관련된 자료를 철저히 검토하고, 논지를 정리하고 심화 학습함으로써 단순히 동서의 교류에서 끝나는 것이 아니라 구체적으로 한 나라의 세계사상을 이해하는 데 노력한다.

This class will examine East-West relations in the pre-modern era, especially Central Asia and the Silkroad Route which acted as an intermediary between East and West, and will help students to understand how they affected each other.

111.624 정복왕조사연구 3-3-0

Studies in Conquest Dynasties

가관의 요소 성립으로 초원의 유목 사회에 정착적인 농경 지역 을 이중적으로 지배하는 정복 왕조의 성립 이후 집권, 정조로 이어지는 중국 내 정복왕조의 다양한 면모를 이해하는 것을 본 강의의 목적으로 한다. 이러한 사회 체제의 내용과 그 한계, 그리고 그 과정에서 나타나는 문화变了 등의 측면을 이해하여 중국사 상에서 유목 국가가 중국을 지배한 데에 따라서 나타나는 새로운 요소와 특성을 이해하도록 한다. 이를 위해 이중적인 체제의 이해를 위한 사료와 논지를 정확히 이해하도록 한다.

This class will examine various aspects of the Conquest Dynasties which conquered nomadic steppe societies and agricultural Han societies in China, for example the Liao, Jin, Yuan, and Qing Dynasties.

111.626 월남사연구 3-3-0

Studies in Vietnamese History

본 과목은 전설 시대로부터 베트남 전쟁이 종결되는 1975년까 지를 다룬다. 베트남의 역사는 고대부터부터 내려오는 베트남 사회의 고유 특성이 무엇이며, 그 위에 간직한 중국 문화의 영향과 함께 급격히 변화하는 외세의 침입 앞에서 베트남인들이 어떻게 저항을 하였는가 하는 점을 이해하는 것이 주요한 이해의 방법이다. 따라서 이런 점에 주목하여 그와 관련된 베트남의 사료를 정리하고, 그리고 관련된 논지를 심화 학습함으로써 베트남 고유의 역사적인 특성과 함께 보편적인 성격을 또한 추출할 수 있다.

This class will closely examine the history of Vietnam, especially its unique traditions, its relations with China, and its struggle with foreign invasions.

111.630 명치유신사연구 3-3-0

Studies in Meiji Restoration

1868년 일본이 동아시아 국가 중에서 유일하게 근대화에 성공 하고 제국주의 국가로 발전할 수 있던 배경을 이해하는 것을 도모한다. 따라서 명치유신의 발생 배경과 그 개개 과정, 그리고 그 결과와의 의을 검토한다. 따라서 이 시기의 주요한 문헌들에 대해 구체적인 해석과 검토, 그리고 논의에 대한 심층적이고 밀도 있는 탐구를 통해 일본 명치유신의 성격을 이해한다.

This class will examine the background, development, and limitations of the Meiji Restoration. Students will understand the modern history of Japan as a unique example of the success of modernization, but one which has developed into imperialism.

111.632 일본사상사연구 3-3-0

Studies in Intellectual History of Japan

본 강의는 동아시아에서 사상의 중심이라고 할 수 있는 중국으로부터 일정한 거리를 두고 나름의 독자적인 사상을 발전시킨 일본의 그 자체의 사상사의 바탕과 중국적인 영향을 어떻게 변 경시키면서 나갔던 사상 체계를 이해하는 것을 목적으로 한다. 이를 위해 각 시대의 대표적인 사상가의 저작 등을 이해하고, 그들에 대한 논지를 정확히 분석함으로써 일본 사상사의 전개를 구체적으로 이해한다.

This class will examine some books of notable intelle-
Studies in Japanese Warrior Society

본 강의는 동양사학과의 정책에 의해 약한 일본 무사 시대에 대한 이해를 심화하는 것을 목적으로 하고 있다. 일본에서 무사들에 의한 정치적, 경제적, 사회적 성장과 일본의 무사 사회의 성립과 발전을 이해하기 위한 이 시대의 기본적인 사료의 해독과 함께 논쟁을 정리하여 이 시대상의 이해를 심화한다.

This class will provide students with a deeper understanding of Japanese warrior society during the Middle Ages. It will help them perceive the characteristics as being quite different when compared to many other East Asian societies from the Middle Ages.

Studies in Yuan China

본 강의는 초원 지역에서 발전한 몽골족이 중국을 정복, 통치하는 과정, 배경, 성격을 이해하기 위한 강의이다. 특히 유라시아에 걸친 몽골 제국이라는 개념이 맡은 중국을 통치하는 원조에 대한 분석을 대상으로 한다. 그리고 중국의 왕조의 관계, 중국 지배의 형태, 초원 지역에 발전한 다른 몽골 국가들과의 관계 등을 파악하여 중국사상에서 원조의 성격을 규명한다.

This class will examine the characteristics and special facets of the Yuan Dynasty, which had conquered and governed China in the latter 13th to mid 14th Century.

Studies in History of Pre-Qin China

본 강의는 중국의 고전 문화를 형성한 선진 시대의 다양한 면을 이해하는 것을 목적으로 하고 있다. 중국의 정치, 경제, 사회, 문화 등의 전반에 걸친 중국의 문화를 형성한 이 시대의 이해를 도모하기 위한 보통 동양의 고전성과 그와 관련된 다양한 자료들을 정리하고, 그에 대한 정확한 해독을 통해서 동양의 고대 세계에 대한 이해를 심화한다.

This class will closely examine some Chinese Classics to understand original aspects of Chinese politics, economics, society, and culture.

Studies in Ancient History of East Asia

본 강의는 동아시아 고대 사회의 전반에 대한 이해를 심화시키기 위해 개설한 강의이다. 동아시아 각 지역의 고대에 대한 논쟁을 비판적으로 검토하고 나아가 이 시대의 이해에 필요한 사료들을 직접 읽고 토론하는 방식으로 수업을 진행한다.

This class will handle subjects selected from events occurring during the ancient period of Chinese history, including the pre Qin-Han Era and the formation of the Qin Han Dynasty. A variety of themes will be covered, and numerous written and epigraphical texts will be examined, leading the students to positive debates.
111.658 Seminar in Islamic Civilization

This class will handle subjects selected from various aspects of culture in the history of Islamic Civilization. A variety of themes and figures as well as numerous written and epigraphical texts will be examined and discussed by the students.

111.659A Seminar in Modern History of Japan

This class will handle subjects selected from events occurring in the modern history of Japan. Students will study numerous themes as well as people, examining various written and epigraphical texts along the way.

111.660 Seminar in Japanese Social History

This class will handle subjects selected from events occurring in Japanese social history. A variety of themes and figures will be covered as well as numerous written and epigraphical texts along the way.

111.661 Studies in Social History of the Middle East

This course considers the particularity and universality of the premodern Middle Eastern/Islamic societies. Its themes may include: cities and urban notables, relations between the city and its hinterland, ulama and sufis orders, guilds, residence quarters, religious/ethnic-communities, religious/political rituals, women’s legal status and rights. Translated primary sources in English and secondary sources will be read and discussed.

111.662 Studies in Ottoman History

This class will handle subjects selected from events occurring in the modern history of Japan. Students will study numerous themes as well as people, examining various written and epigraphical texts along the way.

111.671 Studies on the Oracle Bone and Bronze Inscription

By examining the Oracle Bone and Bronze Inscriptions, the course will lead students to understand the origin of the Chinese letters and the pre-Qin society.

111.672 Studies in Republican China

This course considers the particularity and universality of the premodern Middle Eastern/Islamic societies. Its themes may include: cities and urban notables, relations between the city and its hinterland, ulama and sufis orders, guilds, residence quarters, religious/ethnic-communities, religious/political rituals, women’s legal status and rights. Translated primary sources in English and secondary sources will be read and discussed.
대학원(Graduate School)

111.674 
수당시대사연구 3-3-0

Studies in State and Society in Sui and Tang Period

고대 동아시아 문화권을 형성한 수당 시대의 성격을 이해하는 것을 본 강의의 목적으로 한다. 수당 시대의 동아시아를 하나로 묶을 수 있는 율령, 한자, 유교, 불교 등을 주변 지역에 널리 전파하였음을 통해, 이러한 세계 제국이 될 수 있었음을 시도한다.

This class will examine the formation and development of the Sui-Tang World Empire—which propagated Confucianism, Buddhism, Chinese characters, and the Tang Code in East Asia. Our study will focus on völkerwanderung and the interrelationship between nomads and the Han race.

111.675 
군대중국의 개학과 혁명의 연구 3-3-0

Studies in Reforms and Revolution in Modern Chinese History

19세기 중반 서양의 중국에 대한 본격적인 침입이 시작된 이후 중국이 어떻게 이러한 도전에 대응하였는지를, 그리고 동양 고찰은 이에 어떻게 반응하였는지를, 그리고 이러한 성격을 이해하기 위해 그들의 문집을 정확히 이해하고, 그와 관련된 논지 등을 정리해 학습 한다.

This class will examine the process of reform and revolution that built a nation-state in modern China.

111.676 
동양사상사연습 3-3-0

Seminar in Intellectual History of Asia

본 강의는 역사학적 방법론을 통합하여, 중국, 일본, 베트남 등 아시아 각국에서 나타난 다양한 사상의 흐름들의 역사적 배경과 의미, 사회적 영향 등을 포괄적으로 이해하는 데 그 목적으로 한다. 그러기 위해 기존의 논문과 저서들의 뒷받침을 받는 것은 물론 당시의 문집이나 수필집, 일기 등 다양한 자료를 접목한 후 학생 상호간에 이를 토론하고, 담당 교수의 의견을 내고, 논문을 작성한다.

This class will handle subjects selected from the intellectual history of Asia. The course will cover numerous themes and examine specific historical thinkers.

111.677 
일본정치사연습 3-3-0

Seminar on Political History of Japan

각 시대별로 중요한 정치적 사건을 다루고, 일본정치문화의 성격을 이해한다. 이를 위해 사료자료의 분석능력을 배양한다.

This course examines the important political events in Japanese history and the political culture of Japan. Students will be trained to evaluate and interpret historical materials and analyze them in this course.

111.803 
대학원논문연구 3-3-0

Reading and Research

대학원 석사 및 박사 논문의 체계적인 지도를 위해서, 논문의 준비에 필요한 사료와 관련 연구에 대한 논지의 이해를 통해 연구사를 정리하고, 논문작성에 필요한 방법 등을 구체적으로 지도한다. 또한, 논문 작성 과정에서 필요한 여러 가지의 문제점을 중심으로 지도교수와 상의하는 방식으로 진행된다. 또한 과목 개설의 매 학기마다 담당교수가 지정하는 부제에 따라서 논문 연구 과목을 개설하고 그에 맞추어 논문을 지도한다.

This class will provide graduate students with the skills necessary for choosing a theme, conducting research, and writing a thesis.
112.632 Seminar in British History

This course inquires into important issues concerning modern British history: the formation of a bourgeois society, conflicts and compromises of social classes, the spread of the British Empire and its dissolution, and the question of modern British identity.

112.633 Seminar in American History

This course deals with the main issues of the early period of American history. We will discuss the establishment of colonies, the American Revolution, slavery, and the Civil War.

112.634 Seminar in German History

This course concentrates on discussing research trends and problems related to controversial issues in German history. It will also provide opportunities for research training for particular issues like data analysis and treatise writing.

112.635 Seminar in French History

This seminar deals with debates on Medieval European history. The students will study central issues by observing the formative epochs of feudalism, the state, the church, and the medieval cities.

112.636A Seminar in Russian History

This course intensively investigates the themes most pertinent to Russian history. We will examine recent historiography, important materials and writings about the related subjects, and discuss them in class. Some of the themes that may be selected for examination are Russian traditional societies, modernization, the fall of Absolutism, the Russian Revolution and the Soviet Union, and Stalinism.

112.648 Studies in Women's History

This seminar deals with debates on Medieval European history. The students will study central issues by observing the formative epochs of feudalism, the state, the church, and the medieval cities.

112.654 Seminar in Modern European History

This course inquires into important issues concerning modern European history: the formation of a bourgeois society, conflicts and compromises of social classes, the spread of the British Empire and its dissolution, and the question of modern British identity.

112.657 Seminar in Modern European History

This course intensively investigates the themes most pertinent to Russian history. We will examine recent historiography, important materials and writings about the related subjects, and discuss them in class. Some of the themes that may be selected for examination are Russian traditional societies, modernization, the fall of Absolutism, the Russian Revolution and the Soviet Union, and Stalinism.
This course inquires into important points in modern Western history since the “Age of Empire,” such as the Russian Revolution, the Treaty of Versailles, the rise of fascism and its characteristics, the Popular Front, in addition to the society and economy from the times of revised capitalism, the Cold War, and neocolonialism.

In this course we will intensively research crucial points concerning Western history post-nineteenth century. We will survey various studies and analyse important historical documents.
The development of Buddhist studies have shown remarkable progress that depart from traditional understandings of Buddhism, through which new findings about Buddhist philosophy have been made possible. This course explores various theoretical and methodological issues that appear in modern Buddhist scholarship. Modern Buddhist studies have dealt with the development of Buddhist philosophy and the meanings of Buddhist texts, based on philological studies, comparative linguistics, religious studies, and textual studies. This course is designed for entering graduate students with the aim of exploring methodological advancement that enabled the progress of modern Buddhist Studies, and investigating the meaning of modern Buddhist scholarship and its relevance to other disciplines.
113.533 Seminar in Neo-Confucian Philosophy

This course focuses on theories from various Neo-Confucian thinkers, with an emphasis on Zhu Xi. Students will read Zhu Xi's commentaries on major Confucian scriptures and discuss the differences in the interpretations of his theories by various Chinese, Japanese, Western, and Korean scholars.

113.534 Seminar in Confucian Philosophy

Yugachugaku is a part of the Japanese curriculum that specifically focuses on the study of Confucianism. In this course, students will further their grasp of specific Confucian theories and its characteristics, with the aid of key concepts.

113.535 Study in Classics of Pre-Qin China

This course surveys the historical background which produced contemporary Neo-Confucians like Hu Shi, Feng Youlan, and Kang Youwei, who lived at the closing of the Qing dynasty. Students will look into the possibility of understanding contemporary Korean Neo-Confucians while considering the development of contemporary Chinese Neo-Confucians.

113.536 Seminar in Taoist Philosophy

This course examines the historical background and cultural characteristics of Indian thought. Students will conduct an in-depth study of both orthodox and non-orthodox schools of Indian philosophy, including Buddhism and Jainism. After reading selections from major Indian classics, they will be required to investigate philosophical problems of ancient Indians.

113.538 Seminar in Neo-Confucian Philosophy

This course will enable students to grasp the main themes of pre-Qin Chinese philosophy both by reconstructing its controversies as well as by explaining the historical development of these themes. The themes will concern human nature, the relationship between man and nature, and of qi (the vital energy of life and the universe).
인도불교는 지역적으로나 학파에 따라 다양하게 발전되어 왔다. 본 강좌에서는 인도철학 전통과 관련하여 불교철학의 여러 주제들이 어떻게 발전되어 왔으며, 그들 학설들은 어떤 내적 연결고리를 통해 초기불교와 아비달마 및 대승의 교설과 서로 연결될 수 있는지를 논구하고자 한다. 이를 통해 철학사적 흐름 속에서 불교철학의 문제들을 이해할 수 있을 것이다.

Indian Buddhism developed along geographical regions and various doctrinal schools. This course will examine the development of these various theories of Buddhist philosophy and how they can be doctrinally and philosophically linked with early Buddhism, Abhidharma thought, and Mahayana Buddhism. By understanding this trajectory of historical thought, we will be able to better understand those issues of Buddhist philosophy.

이 과목은 담사동 이후의 서양사상의 충격과 영향 하에서 자각되는 중국철학의 자체문제를 19세기 이후 주체적으로 형성하고, 난관을 극복하며 전통철학의 장상성을 발전시켜 왔는지를 살펴본 과목이다. 특히 5·10 운동 이후 문화보수주의 학자들의 전통사상 정체성 문제에 관하여 주목하며, 중국 근대철학의 강점과 현실성을 파악한다.

In this course students examine how modern Chinese thinkers after Tan Sitong tried to overcome conflicts from Western thought and justify key principles of Chinese philosophy. The class will focus on Chinese cultural conservatives' apologetics and extend them to understand the reality of modern Chinese philosophy.

조선 성리학은 중국에서 그 원형이 들어온 것이긴 하지만 조선의 중세적 전통에 알맞게 조선에서 재구성되었다. 성리학의 요체는 修身入治, 즉 사회 구성원 각자의, 특히 상층 지적인의 도덕성 확보에 있다. 그래서 성리학의 제재관은 자연의 원리를 설명하는 체학 개념과 도덕의 주제로서의 인간을 설명하는 心性 개념이 仁이라는 가치개념으로 합쳐지는 윤리주의적 세계관으로 발전해왔다. 이런 맥락에서 徐敬德, 金宗直, 趙光祖, 李滉, 李珥 등의 사상을 학습하고자 한다.

The key point of Neo-Confucianism is to cultivate one’s morality and to exercise leadership over others based on a moral order. This is the reason why Neo-Confucianism developed into moral metaphysics. Chinese Neo-Confucianism constituted itself into a Korean form in accordance with the medi eval order of the Joseon dynasty. This course will focus on Korean Neo-Confucianism. In this class, students will study the works of Seo Gyeongdeok, Kim Jongik, Jo Gwangjo, Yi Hwang, and Yi Yulgok to understand better its development.

불교 전반에 대한 기본적 소양을 갖춘 수강생을 대상으로 인도, 중국불교와 다른 한국불교의 특성성과를 중점적으로 규정하고자 한다. 구체적으로 玄樞, 知訥, 義天 등의 대표적 고승들의 사상을 인도, 중국 불교철학과 대비하여 학습하고자 한다.

In this course students examine the unique characteristics of Korean Buddhism which differ from those of Indian and Chinese Buddhism. Students study the works and thoughts of Wonhyo, Jinul, and Euicheon, and compare them with thinkers from Indian and Chinese Schools of Buddhism.
Seminar in Medieval Western Philosophy

This course aims to deepen students' understanding of Patristic philosophy like Augustine's and core issues in Scholastic philosophy. It primarily focuses on the evaluation of problem-solving attempts in original texts. However, it will also encourage students to have an appreciative eye for the historical background in which those problems were raised. By the end of the course, students are expected to have solid knowledge of the various interpretations of the original texts.

Seminar in History of Philosophy

The course is intended to deepen students' understanding of the philosophy of history. For this class, one or two classical texts connected with the history of a selected problem will be examined in order to benefit from this seminar.

Seminar in Historical Philosophy

The course will focus on recent debates concerning problem-solving attempts in original texts. However, it will also encourage students to have an appreciative eye for the historical background in which those problems were raised. By the end of the course, students are expected to have solid knowledge of the various interpretations of the original texts.

Seminar in Comparative Philosophy

The course is intended to deepen students' understanding of ontology. For this class, one or two classical texts concerning ontology from the works of Parmenides, Plato, Aristotle, Augustine, Aquinas, Kant, Hegel, Hartmann, Heidegger will be selected and discussed.

Seminar in Conceptual Analysis

This course deals with 20th century European philosophy: phenomenology, hermeneutics, existentialism, critical theory, structuralism, and postmodernism. Students are required both to give a presentation on given topics and to discuss them in class.

Seminar in Theory of Knowledge

This course is intended to deepen students' understanding of the philosophy of history. For this class, one or two classical texts connected with the history of a selected problem will be examined in order to benefit from this seminar.

Seminar in Continental Philosophy

This course deals with 20th century European philosophy: phenomenology, hermeneutics, existentialism, critical theory, structuralism, and postmodernism. Students are required both to give a presentation on given topics and to discuss them in class.

Seminar in Contemporary Western Philosophy

This course deals with 20th century European philosophy: phenomenology, hermeneutics, existentialism, critical theory, structuralism, and postmodernism. Students are required both to give a presentation on given topics and to discuss them in class.

Seminar in Theory of Knowledge

This course deals with 20th century European philosophy: phenomenology, hermeneutics, existentialism, critical theory, structuralism, and postmodernism. Students are required both to give a presentation on given topics and to discuss them in class.

Seminar in Ontology

This course is intended to deepen students' understanding of ontology. For this class, one or two classical texts concerning ontology from the works of Parmenides, Plato, Aristotle, Augustine, Aquinas, Kant, Hegel, Hartmann, Heidegger will be selected and discussed.

Seminar in Comparative Philosophy

This course is intended to deepen students' understanding of ontology. For this class, one or two classical texts concerning ontology from the works of Parmenides, Plato, Aristotle, Augustine, Aquinas, Kant, Hegel, Hartmann, Heidegger will be selected and discussed.

Seminar in Continental Philosophy

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Seminar in Theory of Knowledge

This course deals with 20th century European philosophy: phenomenology, hermeneutics, existentialism, critical theory, structuralism, and postmodernism. Students are required both to give a presentation on given topics and to discuss them in class.

Seminar in Ontology

This course deals with 20th century European philosophy: phenomenology, hermeneutics, existentialism, critical theory, structuralism, and postmodernism. Students are required both to give a presentation on given topics and to discuss them in class.

Seminar in Comparative Philosophy

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This course is intended to deepen students' understanding of ontology. For this class, one or two classical texts concerning ontology from the works of Parmenides, Plato, Aristotle, Augustine, Aquinas, Kant, Hegel, Hartmann, Heidegger will be selected and discussed.

Seminar in Comparative Philosophy

This course is intended to deepen students' understanding of ontology. For this class, one or two classical texts concerning ontology from the works of Parmenides, Plato, Aristotle, Augustine, Aquinas, Kant, Hegel, Hartmann, Heidegger will be selected and discussed.

Seminar in Continental Philosophy

This course deals with 20th century European philosophy: phenomenology, hermeneutics, existentialism, critical theory, structuralism, and postmodernism. Students are required both to give a presentation on given topics and to discuss them in class.

Seminar in Theory of Knowledge

This course deals with 20th century European philosophy: phenomenology, hermeneutics, existentialism, critical theory, structuralism, and postmodernism. Students are required both to give a presentation on given topics and to discuss them in class.

Seminar in Ontology

This course is intended to deepen students' understanding of ontology. For this class, one or two classical texts concerning ontology from the works of Parmenides, Plato, Aristotle, Augustine, Aquinas, Kant, Hegel, Hartmann, Heidegger will be selected and discussed.

Seminar in Comparative Philosophy

This course is intended to deepen students' understanding of ontology. For this class, one or two classical texts concerning ontology from the works of Parmenides, Plato, Aristotle, Augustine, Aquinas, Kant, Hegel, Hartmann, Heidegger will be selected and discussed.
Seminar in Philosophy of Logic

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113.565A
This course reflectively examines society, the fusion of Eastern and Western cultures, and the effect of the information society on culture. It also examines the particularity and universality of culture as well as the implications of a universalizing media.

113.573 
Studies in Philosophy of culture

This course deals with the methodology of science such as analysis and synthesis, deduction and induction. We will also discuss whether the recently discussed naturalistic method is appropriate for philosophy.

113.574A 
Seminar in Philosophological Methodology

This course deals with three concerns: the ontological question of how to know one's mind as well as another's. Students will read selected classical texts and discuss them.

113.575 
Seminar in Ancient Western Philosophy

This class will hold lectures and discussions on key issues in modern Western philosophy. The course helps students deepen their understanding of Western modern philosophy through philosophical interpretations and systematic analyses of original texts. It will also attempt to find a way to inherit and develop modern Western philosophy from a contemporary perspective.

113.577 
Seminar in Philosophy of Mind

This course reflectively examines society, the fusion of Eastern and Western cultures, and the effect of the information society on culture. It also examines the particularity and universality of culture as well as the implications of a universalizing media.

113.578 
Seminar in Philosophy of Mind

This course deals with three concerns: the ontological question of the relation between mind and body, the semantic question of the meanings of mental terms, and the epistemological question of how to know one's mind as well as another's. Students will read selected classical texts on the above topics and discuss them.

113.665 
Seminar in Western Philosophy

This course is intended to provide an in-depth discussion of important areas in the realm of Western philosophy, e.g. logic, epistemology, metaphysics, ethics, philosophy of science, and social and political philosophy. Through intensive reading and discussion of the major literature concerning a specific theme, students are expected to master the main current discussions.
This course aims to study the fundamental questions in Western philosophy concerning truth, knowledge, the problem of being, value and norms, amongst other things. We will mainly discuss the current philosophical discourses or important themes in Western philosophy as well as the classical texts in its history. The emphasis, however, is laid on an overview of the topics by intensively dealing with specific themes.

**113.751 서양고대철학연구** 3-3-0

Studies in Ancient Western Philosophy

This course deals with more technical topics in ethics and thereby improves students' ability to discover problems and present arguments.

**113.753 서양근세철학연구** 3-3-0

Studies in Modern Western Philosophy

Descartes to Hegel, and their original works, will be studied. The emphasis, however, is laid on an overview of the topics by intensively dealing with specific themes.

**113.754 서양현대철학연구** 3-3-0

Studies in Contemporary Western Philosophy

As a sequel to the <Seminars in Ethical Theory>, this course deals with more technical topics in ethics and thereby improves students’ ability to discover problems and present arguments.

**113.755 인식론연구** 3-3-0

Studies in Epistemology

This course deals with more technical topics in ethics and thereby improves students’ ability to discover problems and present arguments.

**113.757 형이상학연구** 3-3-0

Studies in Metaphysics

This course covers important issues in the philosophy of language, including the relationship between language and world, thought, and culture. More specifically we address questions about the nature of meaning and its relation to truth and the larger world. Also covered are speech acts, lin-
guistic and objectual necessity, proposition, private language, and metaphor. These topics will be examined from the perspective of formal language, transformed language, hermeneutics and structuralism. Students are required to read selected classical texts on the above topics and discuss them.

For this course, a number of topics will be chosen and discussed intensively. Included are scientific rationality, scientific realism, the philosophy of space and time, scientific reduction, and the philosophy of quantum mechanics. Students will read selected classical texts concerning the above topics and discuss them.

This course guides students in collecting and analyzing required materials and in writing their theses. Part of the course requirement will be attendance of colloquiums sponsored by their adviser at least three times, as well as satisfying requirements imposed by their adviser.
This course is a general study of history, literature, idea and performance of Judaism from the biblical age to the contemporary age. It intends to understand Jewish Bible, Jewish and Christianity will be compared in the later part of this course.

This course involves extensive collection of raw materials on religious documentation, orthopraxis, organizations and principles as well as their comprehensive grasp and interpretation.

This course is a study in Shamanism. It will introduce to the students, its history, varying doctrines, and numerous different practices.

This course addresses the critical analysis of key themes and figures in the sociology of religion, with attention to their role in the emergence and current practice of religious studies is conducted in this course.
This course surveys the history of Christian thought and its evolution while focusing on how Christianity was changed by other religions and historical factors.

114.693 도교사연구 3-3-0

Studies in the History of Taoism

도교의 다양한 전통에 대한 전문적이고 깊이 있는 탐색을 추구한다. 도교의 특정 경전이나 문헌의 이해에서부터 도교의 양상별의 조화, 도교의 의례양식 등에 관한 체계적 연구를 시도한다. 도교가 사회의 성격을 형성하는 데 관점을 둔다. 도교는 대사의 사회적 성격과 한국에서 도교사상의 전개양상을 성격을 인식하는 데 주목한다. 도교와 문화, 삶의, 과학, 생활관습 등의 연관성을 해명하며, 유교, 불교, 민간신앙 등 다른 종교와의 연관관계를 이해하는 데 관심을 가질 것이다.

This course examines Taoism in Korea, from its introduction to its cultural assimilation. It will also look at how it developed into one of the major religions in Korea.

114.695 신화와 세계관연구 3-3-0

Studies in Myth and Worldview

신화의 형성과 신화적 사고의 특성을 고찰함으로써 특정한 세계관이 형성되는 과정을 이해하고, 아니라 이러한 신화적 세계관이 고전문화의 세계관으로 이어지는 과정을 파악하는 데 이 강의의 목적이 있다. 구체적으로 학습내용을 살펴보면 다음과 같다. 첫째 신화를 체계적으로 조감하고 대표적인 고대신화의 연구결과를 살펴본다. 둘째 세계신화 전영역의 일차자료를 정리하고 그 가운데서 각자가 선호하는 분야를 탐색하여 연구한다.

This course provides an exploration of the nature, structure, as well as meaning of ritual acts and language. Intensive study is conducted in ritual oratory with particular attention being paid to myth and symbol. Approaches to mythology include the interrelations between different media (oral, aural, tactile, plastic). Also investigated in depth will be the features of formalism, redundancy, and condensation in rituals.
This course offers an introduction to Confucianism in Korea. Special emphasis will be placed on the study of its ritual, morality, and social order as well as its philosophical perspectives and traditions.

114,703 Seminar in the Comparative Study of Religions

114,706 Studies in the Classics of Religious Studies

114,707 Studies in Western Religious Texts

114,708 Seminar in Buddhist History

Buddhism is an important part of Korean history and culture. This course will explore the origins and development of Buddhism in Korea, from its introduction by ethnic groups to its establishment and influence on Korean society. Students will engage with primary and secondary sources to gain a comprehensive understanding of Buddhist thought and practice in Korea.

114,702 Studies in Confucianism in Korea

This course will provide an introduction to Confucianism in Korea, focusing on its historical development and cultural impact. Students will study key texts and figures in Confucianism, as well as its influence on Korean philosophy, literature, and daily life. The course will also explore the relationship between Confucianism and other religious traditions in Korea.

114,704 Seminar in the Comparative Study of Religions

This course will examine the similarities and differences between major world religions, focusing on their historical development, key figures, and major themes. Students will engage with primary and secondary sources from a variety of religious traditions to gain a deeper understanding of the diversity of religious thought and practice.

114,701 Studies in Christian Canons

This course will provide an introduction to Christian texts from the New Testament through modern times. Students will engage with primary sources as well as scholarly commentary to gain a comprehensive understanding of the development of Christian thought.

114,700 Seminar in Buddhist History

This course will explore the origins and development of Buddhism in Korea, from its introduction by ethnic groups to its establishment and influence on Korean society. Students will engage with primary and secondary sources to gain a comprehensive understanding of Buddhist thought and practice in Korea.
rise as one of the leading religions in Korea.

114.709 불교문헌연습 3-3-0
Seminar in Buddhist Classics
세계 각지로 들어가 정착한 불교는 방대한 문헌과 함께 화려한 불교문화를 창조해내었다. 불교문헌은 그 양이 매우 방대하고 접근하기가 쉽지 않기 때문에 불교를 이해하는 것은 이례적으로 만든다. 그러나 불교문헌들은 불교를 이해하기 위해서 반드시 가져가야 하는 수단이다. 그러므로 이에 관한 강좌를 개설함으로써 불교 문헌에 대한 이해를 심화시킬 필요가 있다.

This course provides an opportunity to read selected texts from various Buddhist traditions including the Diamond-Sutra.

114.711 종교의례연구 3-3-0
Studies in Religious Rituals
종교의례는 신화와 더불어 종교를 구성하는 중요한 요소들 중의 하나이다. 그러므로 종교를 이해하기 위해서는 종교의례에 대한 이해가 필수적이다. 그리고 종교의례는 불교를 이해하기 위해서는 필수적으로 요구된다. 그러나 현재의 과목과정에서는 종교의례를 전문적으로 다루는 과목이 없다. 그러므로 이 과목을 신설함으로써 종교의례를 이해하고 종교 자체에 대한 이해를 심화시킬 수 있을 것이다.

This course explores the nature, structure, and function of ritual in religious life. It includes an analysis of the different types of ritual such as sacrifice, communal worship, festivals, rites of passage, prayer and meditation as well as a study on the ritual's sacred time and space.

114.712 현대종교변동연구 3-3-0
Studies in Transformations of Religion in Modern Society
현대사회에 있는 변동은 유례가 없을 정도로 광범위하고 그 변화 속도도 매우 빠르다. 이러한 변화 속에서 종교는 사라지는 문화로 고착화되기 쉽기 때문에 무단한 현대사회의 변동에 적응하려고 노력해 왔다. 그러나 현대적 과학과에서는 현대사회의 변동과정 속에서의 종교의 변동을 실현할 수 있는 과목이 없다. 그러므로 이 과목을 실현하여 현대사회의 특성과 종교의 변동과정에 대한 이해를 심화시키고자 한다.

This course studies the close relationship between modern society and transformation of religion.

114.713 현대종교이론연구 3-3-0
Studies in Contemporary Theories of Religious Studies
본 강좌는 20세기 후반 이후 전개되어 온 현대 종교학의 이론적 문제들에 대한 핵심적 세미나이다. 역사적·현상학적 연구와 비교 연구 및 철학, 심리학, 그리고 특히 심리학, 사회학, 인류학 등의 다양한 보고과학적 연구 성과들을 통제적으로 분석해 보며 동시에 다양한 종교현상을 문헌적으로 이해한 이론적·방법론적 인식들에 의존하게 하는 데에 본 강좌의 목적이 있다. In this course students are asked to engage in critical analysis of key themes and figures in contemporary critical theory and cultural studies. In addition it will also focus on their relationship to the discipline of religious studies.

114.714 종교와 문화연습 3-3-0
Seminar in Religion and Culture
종교로 문화의 한 현상으로 간주하고, 동시에 문화로 종교 현상이 발현하는 것으로 규정함으로써, 종교와 문화가 엮은 본질적 관계를 조명해 본다. 특히 종교와 예술, 종교와 문학 등의 주제를 정해 볼 때, 그들이 상호 교감하며 펼치는 다양한 역학관계 구조를 탐구해 본다. 종교가 독특한 현상의 것인지, 문화 내의 현상이며, 문화를 형성하는 근본 동력임을 인식할 수 있는 기회를 제공한다.

This course explores interpretations of the structure and practice of sacred phenomena, including embodiment, symbol, narrative, myth, ritual, architecture, technology, and power, all in the cultural context. Readings will vary according to the course instructor.

114.715A 이슬람교연구 3-3-0
Studies in Islam
이 과목은 종교로서의 이슬람교에 대한 심화된 지식과 이해의 습득을 목표로 한다. 이를 위해 우선 이슬람교의 교리와 실천, 조직에 대해 공부한다. 그리고 다른 서구 유일신 종교들과의 관계, 성서와 코란 등 문헌의 해석 전통과의 관계, 군사주의나 신정치, 여성에 대한 억압 등과 관련하여 현재 각지에서 발생하는 사건들과의 관계, 현대 서구 문화의 중용 등 구체적인 맥락 속에서 이슬람교에 대해 고찰한다. 이를 통해 이슬람교의 특성과 문화, 역사를 배우고 이해하도록 하는 것이 이 과목의 목표이다.

This course provides an opportunity to conduct advanced studies of Islamic religion, so that students learn and understand its characteristics, culture and history. Special emphasis will be put on approaching Islam as a religion. Students in this course will study doctrines, practices and sociological features of Islamic religion in terms of relevant contexts, including its relation with other western (monotheistic) religions and traditional hermeneutics of sacred literature. Contemporary issues such as militari...
에요. 아래는 한국어로 된 교육 과목 정보입니다.

**대학원 사정과 (Graduate School: Dept. of Religious Studies)**

- **114.718 종교사연구 3-3-0**
  - Studies in the History of Religion
  - 종교문화를 이해하기 위해서는 공식적 통성적 방법론을 모두 동원하여야 할 것이다. 이 중에서 본 수업은 역사적인 관점에 입각함으로써 종교문화를 보다 큰 환경 속에서 이해할 수 있는 방법을 모색하고자 한다.
  - In this course, the students will engage in critical analysis of key themes and figures from religious history while highlighting their significance to emerging religious studies.

- **114.719 종교실태조사 3-3-0**
  - Field Researches of Religion
  - 현재 한국 사회에 전개되고 있는 종교현상들을 문헌이 아니라 직접 현장에 가서 접하는 기회를 마련함으로써, 보다 생생한 종교 이해를 도모하고자 한다. 아울러 현재 종교상황들을 파악하는 데 많은 도움을 줄 것이다.
  - Students will conduct an active and applicable research about religious themes in this course. This class will also be honing their general research skills such as interviewing, field work, analysis, and writing.

- **114.720 종교사상연구 3-3-0**
  - Studies in Religious Thoughts
  - 여러 종교들이 개발하고 역점을 두어 온 종교사상에 대한 체계적인 이해를 위해 어떠한 방법론적 안목을 가져야 하는지 그리고 그 이상들의 상호비교 연구를 통해서 각 종교문화가 건지하고 있 는 방향을 살펴보는 데 역임을 둔다.
  - This course is to provide the ground to understand the characteristics and the history of Korean Religion by means of collecting, classifying and interpreting texts on Korean Religion. It deals with various materials including important texts from the ancient to the modern ages, and from primitive religions to contemporary new religions, that show the main religious ideas and rituals of Korean Religion. Emphasis will be put, in particular, on the training in systematic collection and appropriate usage of primary and secondary texts of Korean Religion.

- **114.721 한국종교문헌연구 3-3-0**
  - Studies in Korean Religious Texts
  - 한국 종교사 연구자료를 수집, 정리하고 이를 해석함으로서 한국 종교의 특질과 흐름을 이해하는 기초를 마련한다. 본 강좌에서는 한국 고대로부터 현대에 이르기까지, 그리고 현대 고대 종교로부터 현대 신종교에 이르기까지 한국종교사의 주요한 특성을 보여주는 종교사상 및 종교의례 자료들을 다루고, 기타 문헌의 자료를 적극 활용한다. 특히 본 강좌에서는 국내외에 산재하는 한국종교의 관련 자료와 문헌을 체계적으로 수집하고 이를 정리하여 한국종교 연구의 토대를 구축한다.
  - This course is to provide the ground to understand the characteristics and the history of Korean Religion by means of collecting, classifying and interpreting texts on Korean Religion. It deals with various materials including important texts from the ancient to the modern ages, and from primitive religions to contemporary new religions, that show the main religious ideas and rituals of Korean Religion. Emphasis will be put, in particular, on the training in systematic collection and appropriate usage of primary and secondary texts of Korean Religion.

- **114.722 종교학연습 2 3-3-0**
  - Seminar in the Science of Religion 2
  - 원시종교부터 현대종교에 이르기까지 종교현상의 제반 양상과 세계 주요 종교전통들에 대해 종교학의 이론과 방법론을 적용하여 분석하고 연구하는 연습을 체계적으로 실시한다.
  - Seminar in the Science of Religion 2
  - Critical analysis and research in various religious phenomena from primitive to contemporary, including traditions of major world religions, on the basis of methodologies and theories of the science of religion. Prerequisite: 114.651A Proseminar in Science of Religion 1

- **114.803 대학원논문연구 3-3-0**
  - Reading and Research
  - 대학원 객원에서 나름대로 연구하고 공부한 내용들을 논문으로 응용하는 데 실질적인 도움을 주기 위해 기획된 수업이다.
  - Students will complete a thesis project under the tutelage of a professor. This is a graduate level course.
학점구조는 "학점수-주당 강의시간-주당 실습시간"을 표시한다. 한 학기는 15주로 구성됨. (The first number means "credits"; the second number means "lecture hours" per week; and the final number means "laboratory hours" per week. 15 weeks make one semester.)

115.501 미학사연습 1 3-3-0
Seminar in History of Aesthetics 1
본 과목은 고대로부터 현대에 이르기까지 미와 예술에 관한 이론적 성찰의 역사적 전개와 사상적 발전을 심도 있게 논구하며 특히 고대에 있어서 미 및 예술에 관한 이론적 성찰의 역사적 전개와 사상적 발전에 관해 논구한다.
In this course, students will investigate the historical formation and development of theories of beauty and art. Special emphasis will be placed on Ancient theoretical thought.

115.504 현대미학연습 1 3-3-0
Seminar in Contemporary Aesthetics 1
본 과목은 고대 미학의 문제점을 비판적으로 검토하고, 이러한 문제점들이 현대 미학으로 어떻게 수정되고 귀결되었는지를 체계적 인 맥락 속에서 논구한다.
This course aims to help students critically understand and analyse important modern problems and methods within Aesthetics. They will also examine influences on contemporary Aesthetics.

115.507 미술사론연습 3-3-0
Seminar in Theory of Art History
본 과목은 미술사학의 체 관점을 명확히 하고 또 각각의 관점을 비교하며 미술사관을 심층적으로 연구함으로써, 각각의 미술사관이 지난 미학적 철학적 성격을 논구한다.
This course will intensively examine the foundations of various historical, art viewpoints with an emphasis on aesthetic and philosophical aspects.

115.509 음악사론연습 3-3-0
Seminar in Theory of Music History
본 과목은 음악사학의 체관점을 명확히 하고 또 각각의 관점을 비교하여 음악사를 심층적으로 연구함으로써, 각각의 음악사관이 지난 미학적 철학적 성격을 논구한다.
Students will closely examine the foundations of various historical viewpoints on music with a special emphasis on aesthetic and philosophical aspects.

115.511 고대미학사상연구 3-3-0
Studies in Ancient Aesthetics Thoughts
본 과목은 고대와 중세시대의 미와 예술에 관한 이론적 성찰의 역사적 전개와 사상적 발전을 심도 있게 논구한다.
In this course, students will investigate the developments and changes of aesthetic thoughts especially concerning Ancient and Medieval thought.

115.601 미학사연습 2 3-3-0
Seminar in History of Aesthetics 2
본 과목은 고대로부터 현대에 이르기까지 미와 예술에 관한 이론적 성찰의 역사적 전개와 사상적 발전을 심도 있게 논구하며 특히 고대에 있어서 미 및 예술에 관한 이론적 성찰의 역사적 전개와 사상적 발전에 관해 논구한다.
In this course, students will investigate the historical formation and development of theories of beauty and art. Special emphasis will be placed on Ancient theoretical thought.
115.624 예술철학연습 2 3-3-0
Seminar in Philosophy of Art 2
본 과목은 현대 예술철학의 여러 방법론에 대한 철학적 검토를 수행하며, 각 이론들이 지닌 의의와 한계를 논구한다.
This is a philosophical review of the methodologies of contemporary art philosophy. The class will investigate the significance and limit of individual theories.

115.626 예술학연습 3-3-0
Seminar in Science of Arts
본 과목은 예술학이 다루는 체 문제를 심도 있게 연구한다.
This course investigates the extensive questions concerning scientific art theories.

115.634 중국미학사연구 1 3-3-0
Studies in History of Chinese Aesthetics 1
본 과목은 중국의 미학사를 구성하는 미적 대상, 미의식, 미적 가치 등의 본질을 규명하기 위하여 중국의 고전적 문헌을 선택하고 그 속에서 주요개념들을 추출하여 분석하며, 그러한 개념이 산출된 문화사적인 배경을 같이 철학한다. 본 과목에서는 가급적 원전에 담긴 사상을 의미 그대로 음미하면서 중국미학의 기초 방향을 정립해 나가게 한다.
In this course, students will study the ongoing changes occurring in the philosophy of art in respect to modern philosophy.

115.636 중국미학사상연습 3-3-0
Seminar in Chinese Aesthetic Thoughts
본 과목은 중국미학사를 구성하는 기초개념을 설정하고 그 것을 담고 있는 문헌을 중심으로 그 의미를 철학한다. 상고시대의 원초적미의식들 <서경>, <서경>에서 출현한미학의 미의식 <논문> 등에서 현대의 미학사상의 <예기>에서, 육조시대의 예술론들을 해석, 왕황지, 유협 등의 문헌에서 발췌하여 그 의미를 밝힌다.
Students will discover the basic concept of the Chinese aesthetic thoughts by reading classical materials.

115.637 중국예술론연습 3-3-0
Seminar in Theory of Chinese Arts
본 과목은 중국에서 전개된 다양한 예술현상들을 선택, 분류하고 그 사상적 배경을 연구로 도입한다. 예컨대 고대의 음악의 성과 그 이론, 육조시대의 시화 발달과 자율적 문화미학의 출현, 고개자의 기초와 그 이론, 근세의 예술적 상황과 이론, 송대에 근본한 산수화론, 원래에 못한 화려한 화론이론, 명. 청대에 발달한 소설이론 등을 축적적으로 취학과 예술현상을 조용해가며 연구한다.
Students will study the ongoing changes occurring in the philosophy of art in respect to modern philosophy.

115.638 현대미학연구 1 3-3-0
Studies in Contemporary Aesthetics 1
본 과목은 현대 미학에서 주요한 쟁점이 되고 있어 있는 미학적인 문제, 특히 대류 예술학의 논의들을 다루고 있는 주요 저작들을 비판적으로 검토함으로써 각 이론들이 지닌 의의와 한계를 심도 있게 연구한다.
This course reviews controversial questions of contemporary aesthetics, specifically through critical studies of major works on continental philosophical discussions, thereby providing in-depth understanding of the significance and the limit of each theory.

115.640 예술학연구 3-3-0
Studies in Science of Arts
본 과목은 현대 미학에서 주요한 쟁점이 되고 있는 미학적인 문제, 특히 영미 분석 철학의 관점에서 다루고 있는 주요 저작들 을 비판적으로 검토함으로써 현대미학의 제 문제와 방법을 상호 비교 검토한다.
This course reviews controversial questions of contemporary aesthetics, specifically through critical studies of major works that adopt views of analytic philosophy, thereby comparing problems and methodologies of contemporary aesthetics.

115.713 미술심리학연습 3-3-0
Seminar in Psychology of Art
본 과목은 미술의 본질에 대한 철학적인 이해와 평가는 되는 경제과학적 미학의 입으로 미술작품의 지각과 제작에 관련된 심리과정과 요소의 성격을 예술학적 관점에서 설명하는 데 목적이
미술사회학연습 3-3-0

Seminar in Sociology of Art

본 교과목은 미술현상과 사회현상의 상호관계를 고찰, 해명하는 데 그 목적이 있다. 따라서 본 과목은 Taine, Houser 등의 다양한 예술사회학자들의 영향력 있는 저작을 검토할 것이다.

This course investigates the interrelation between phenomena of fine arts and society, focusing on the influential works by various art sociologist such as Taine and Houser.

한국예술론연구 3-3-0

Studies in Theory of Korean Arts

본 교과목은 지금까지 여러 분야에 걸쳐 시도되어 온 연구성과들을 토대로 하여 그것들을 한 차원 높여 종합하는 미학적 관점을 형성하고자 한다. 아울러 우리 예술 문화의 복합성과 다면성뿐만 아니라 중국 예술과의 영향관계 속에서 어떻게 형성, 발전, 전개되어 왔는지에 대한 신도 있는 접근을 시도한다.

In this course, students will gain a rich and deeper understanding of Korean art and culture with its complexity and multiplicity. They will also examine Korean art’s relation to Chinese art.

조형예술론연습 3-3-0

Seminar in Theory of Plastic Arts

본 교과목은 이른바 ‘조형예술론’이라고 통칭되는 예술현상에 대한 이론적인 조형예술론이 지니는 미학적 문제를 천착함으로써 조형예술에 대한 보다 체계적인 미학적 접근을 시도한다.

This course is focused on examining the theory of art that deals with the phenomenon of ‘Plastic Art.’

미술비평론연습 3-3-0

Seminar in Theory of Art Criticism

본 교과목은 작품의 해석과 평가 등 미술비평에 있어서 미학적 인 문제가 되는 쟁점들을 체계적으로 검토하고 아울러 쟁점들에 대한 각자의 이론이 지니는 의미와 한계를 높도 있게 비교, 검토한다.

This class is to help students understand the aesthetic problems in the criticism of art. Throughout the course, they will consider the various issues that deal with the interpretations and evaluations of art work.

음악미학연구 3-3-0

Studies in Aesthetics of Music

본 교과목은 음악 현상이 지니는 특수한 미학적인 문제를 중심으로 각 음악이론을 비교 검토하여 보다 체계적인 미학적 접근을 시도한다.

In this course, students will use both aesthetic approach and systematics to examine various aesthetic problems in musical phenomena.

과목번호| 과목이름| 학점| 주의사항
---|---|---|---
115.720| 음악비평론연습| 3-3-0| Seminar in Theory of Music Criticism
| 본 교과목은 작품의 해석과 평가 등 음악비평에 있어서 미학적 인 문제가 되는 쟁점들을 체계적으로 검토하고 아울러 쟁점들에 대한 각자의 이론이 지니는 의미와 한계를 높도 있게 비교, 검토한다. |
| In this course, students will investigate aesthetic problems in music criticism through the examination of issues concerning the interpretation and evaluation of musical works. |

115.722| 근대독일미학사상연구| 3-3-0| Studies in Modern German Aesthetic Thoughts
| 본 교과목은 근대 독일 미학사상이 지니는 미학적 의의와 주요 저작에 대한 심도 있는 검토를 통해 근대 독일 미학사상이 지니는 위상과 의의에 대해 연구한다. |
| In this course, students will gain a deeper understanding of modern German aesthetics through analysis of principal texts. |

115.723| 근대프랑스미학사상연구| 3-3-0| Studies in Modern French Aesthetic Thoughts
| 본 교과목은 근대 프랑스 미학사상의 위상과 의의를 탐구하며, 주요 예술사상에 대한 비교, 분석을 통해 근대 프랑스 미학사상이 현대 미학사상에 어떤 영향을 미치고 있는지 연구한다. |
| In this course, students will study the influence of the modern French Aesthetic thought on Contemporary Aesthetic Thought. In addition further comparison and evaluation of the major art theories will be carried out. |

115.724| 비평철학연구| 3-3-0| Studies in Philosophy of Criticism
| 본 교과목은 비평철학의 제문제에 대한 중요한 저작들 중심으로 각자의 이론이 지니는 의의와 한계를 높도 있게 비교, 분석한다. |
| In this course, the students will be exposed to major works in the Philosophy of Criticism. After reading, students will compare and analyze the various theories. |

115.725| 근대미학연구| 3-3-0| Studies in Modern Aesthetics
| 본 교과목은 근대 미학에서 주요한 쟁점이 되고 있는 미학적인 문제들을 다루고 있는 주요 저작들을 비교적을 통해 각 이론들이 지니는 의의와 한계를 높도 있게 비교, 분석한다. |
| This course reviews controversial questions of modern aesthetics, specifically through critical studies of major works, thereby providing in-depth understanding of the significance and the limit of each theory. |

115.803| 대학원논문연구| 3-3-0| Reading and Research
| 본 과목은 대학원 논문지도를 위한 과목이다. |
| This course is intended to help the student who is preparing his or her thesis or dissertation. |
116.501A 

**Theories and Methods in Archaeology**

This course attempts an in-depth review of diverse theoretical and methodological issues in modern archaeology. Topics may cover both general theoretical-methodological issues and those surrounding particular issue, such as the origin of agriculture.

116.541A 

**Writing Seminar in Archaeology**

This course will focus on giving students skills in two of the most fundamental skills needed by archaeologists: oral presentation and writing. The first half of the class will focus on how conference presentations and writing. The first half of the class will focus on how conference presentations and academic articles are organized, proper use of citations, and how to build a good theoretical-methodological framework.

116.542A 

**Seminar in Historical Archaeology**

This course is designed for students to be familiar with topics in prehistoric archaeology. Various issues will be discussed according to the interests of both the instructor and students.

116.549 

**Lithic Archaeology**

This course presents one of mankind’s earliest artifacts, his stone tools. In this class we will examine the production and usage of stone tools, and put into practice methods of analysis.

116.557 

**Seminar in Prehistoric Archaeology**

This course examines one of mankind’s earliest artifacts, his stone tools. In this class we will examine the production and usage of stone tools, and put into practice methods of analysis.

116.558 

**Topics in Archaeology**

This course attempts an in-depth review of diverse theoretical and methodological issues in modern archaeology. Topics may cover both general theoretical-methodological issues and those surrounding particular issue, such as the origin of agriculture.

116.559A 

**History of Archaeological Theory**

This course attempts to review archaeological issues related to state formation. Both regional topics and general theoretical and methodological ones will be discussed.

116.560 

**Archaeology of China**

This course reviews recent developments in archaeological research in China. It aims to provide a systematic view on Chinese archaeology. The class will discuss major discoveries and characteristics features from the palaeolithic times
until the beginning of the Spring and Autumn Period. Students are expected to develop a perspective on the intraregional diversity of archaeological entities since the Neolithic period.

116.561 일본고고학 3-3-0
Archaeology of Japan

이 과목은 일본 고고학의 최근 동향과 성과에 대한 숙지하고 토론하는 것을 목적으로 한다. 방대한 양의 신 자료가 축적되고 있는 일본의 고고학 현황에 대해 체계적인 정리하고 해석할 수 있는 시각을 키우며, 또한 한국 고고학과 밀접한 관련이 있는 사안에 대해 연구사적 배경과 양국의 관점 차이를 이해할 수 있는 능력을 배양시키고자 한다.

The course is designed to review recent developments in archaeological research in Japan. It attempts for students to develop a perspective to organize and analyze massive amount of data that are produced every year in Japan for one’s own research purposes. For issues related to Korean archaeology, students are expected to have an understanding on such issues.

116.562 유럽고고학 3-3-0
Archaeology of Europe

이 과목은 유럽 지역에서의 고고학 현황과 연구 경향을 검토하는 것을 목적으로 한다. 유럽에서 고고학 연구는 거의 다지다양한 학자적 배경에서 이루어졌고 그 내용 또한 다양한 만큼, 본 과목은 수강생들로 하여금 그러한 다양한 배경에 대한 최소한의 이해를 갖추도록 함과 더불어 유럽 고고학의 전반적 편년 체계와 주요 경정에 대해 소개하는 것을 목표로 한다.

The course is a review of archaeological past of Europe and recent trends in research. Archaeological research in Europe has been made under extremely diverse background and there are known as much diversity among archaeological findings. Students are expected to develop an understanding on such diversities as well as terminologies, culture history and major issues in research by the end of the class.

116.564 토기론 3-3-0
Pottery Analysis in Archaeology

고고학 연구에 있어 기본적이고 중심적 위치를 차지하는 토기의 분석 및 그 의미의 해석과 관련된 각종 연구방법론의 숙지하고 숙련하는 것이 이 과목의 목적이이다. 이를 위해 토기의 속성과 그 특성을 분석함에 필요한 각종 자연과학적 방법과 더불어, 토기 원료의 획득에서 제작 및 분배에 이르기까지의 사회경제적 배경 이해와 관련된 각종 경제학적, 사회학적, 인류학적 주제를 다루게 될 것이다.

The course discusses theoretical and methodological issues of pottery analysis. Students are expected to be familiar with scientific techniques and methods to extract and define material characteristics of potteries. The class will also discuss diverse economic, sociological and anthropological topics relevant to understanding various aspects of ceramic archaeology, including procurement of raw material, manufacture and distribution of potteries, as well as their use and discard.
Geoarchaeology

The class discusses various approaches of geoarchaeology, which has become an independent research field in its own by adopting various methodologies from stratigraphy, Quaternary geology, sedimentology, geomorphology, pedology and chronometry. Geoarchaeology is especially important to understand the site formation and transformation processes. A geoarchaeological perspective is essential for modern archaeological fieldwork. Students are expected to participate in both fieldwork and laboratory research.

Quantitative Methods in Archaeology

This course will offer you a practical introduction to Geographic Information Systems (GIS) for the processing of archaeological data. The focus of the class is to give you an understanding of the theoretical background of GIS and practical skills of using ArcGIS software. The class will also cover some topics of archaeological data analysis, including spatial statistics and site formation processes. You will be expected to apply your new skills to infer patterns of archaeological site formation and past human behavior.

Prehistoric Technology

The class is designed to let archaeology major to be familiar with methodologies of osteoarchaeology, especially necessary for archaeological reconstruction of past society. The topics will cover human osteology and paleopathology as well as aDNA studies and stable isotope analysis.

Reading and Research

The primary objective of this course is to prepare students for their graduate thesis. Under the guidance of a faculty member, students will write and present their own theses. The class will then discuss and critique the theses.
대학원(Graduate School)

- 고고미술사학과 미술사학전공(Major in Art History, Dept. of Archaeology and Art History)

학점구조는 "학점수-주당 강의시간-주당 실습시간"을 표시한다. 한 학기 15주로 구성됨. (The first number means "credits"; the second number means "lecture hours" per week; and the final number means "laboratory hours" per week. 15 weeks make one semester.)

116.604 한국조각사연구 3-3-0

Studies in Korean Sculpture

한국조각의 흐름과 변천을 고대부터 조선시대까지 살펴보고 불상에 관한 역사기록, 명문 등을 찾아서 그 불상의 명칭, 연대, 비교유물, 제작자, 절묘사상, 정신 및 신앙의 성격, 역사 및 미술사적 중요성을 고찰한다.

This course is an overall study of Korean sculptures with research on the written documents surrounding them. The documents relate valuable information about a sculpture such as its name, date, and the nature of the religious doctrine that produced it.

116.610 한국미술사학전공 3-3-0

Studies in Korean Art

한국의 회화, 조각, 불교미화, 공예 등의 다양한 미술문화에 대해 폭넓고 심도 있게 다는 세미나 강의이다.

This course consists of in-depth student-oriented discussions on diverse topics in Korean art such as Korean painting, sculpture, and craft.

116.629 한국화사연구 3-3-0

Studies in Korean Painting

한국화사에 관련된 여러 주제 중 학기마다 다른 주제를 선정한다. 학생들은 이와 관련된 논문을 발표하고 토론하는 방식으로 수업이 진행된다.

In this course, specific topics on Korean painting will be chosen and investigated in depth. Students will be asked to write and present essays in class.

116.631 한국공예사연구 3-3-0

Seminar in Korean Craft

전시대의 경쟁 우리나라의 공예를 다루며, 제품적 특성과 기능성, 장식성 등에 대해 살펴본다.

This course is an overall study of Korean craft and focuses on the characteristics of the material and function of the craft work.

116.632 한국근현대미술연구 3-3-0

Studies in Modern and Contemporary Korean Art

한국 근대와 현대의 미술사와 화가들에 대해 살펴본다. 수업은 주제별 발표와 토론으로 진행된다.

This course is a study of modern and contemporary Korean art. Class lectures will be accompanied by students' presentations and discussions.

116.633 중국미술사학전공 3-3-0

Studies in Chinese Art

중국미술의 흐름, 조각, 공예 등의 다양한 미술문화현상 중 하나의 주제를 선정하여 발표와 토론으로 수업을 진행한다.

In this course, students will write on specific topics in Chinese art and present them in class.

116.634 일본미술사학전공 3-3-0

Topics in Japanese Art

일본미술의 다양한 미술문화현상 중 하나를 주제로 선정하여 폭넓고 심도 있게 다룬다.

In this course we will choose and investigate specific topics in Japanese art.

116.635 인도미술사학전공 3-3-0

Topics in Indian Art

인도의 여러 지역의 다양한 미술문화현상 중 하나를 주제로 선정하여 심도 있게 다룬다.

In this course, specific topics in Indian art will be chosen for investigation.

116.637 중앙아시아미술연구 3-3-0

Topics in Central Asian Art

중앙아시아의 여러 지역의 다양한 미술문화현상 중 하나를 주제로 선정하여 발표와 토론으로 수업을 진행한다.

Students will be asked to research and write essays on specific topics in Central Asian art and present them in class.

116.638 동남아시아미술연구 3-3-0

Topics in Southeast Asian Art

동남아시아의 여러 지역의 다양한 미술문화현상 중 하나를 주제로 선정하여 발표와 토론으로 수업을 진행한다.

Students will be asked to research and write essays on specific topics in Southeast Asian art and present them in class.

116.642 동양미술사학전공 3-3-0

Studies in Asian Art

동양미술과 관련된 여러 주제 중 하나를 선정하여 심도있고 폭넓게 다룬다.

In this course, specific topics in Asian art will be chosen and investigated in depth.

116.643 서양미술사학전공 3-3-0

Studies in Western Art

서양미술과 관련된 여러 주제 중 하나를 선정하여 심도있고 폭넓게 다룬다.

In this course, specific topics in Western art will be chosen and closely investigated.

116.645 불교미술작성 3-3-0

Studies in Buddhist Art

불교미술에 관련된 여러 주제 중 하나를 선정하여 심도있고 폭넓게 다룬다.

A specific topic from a wide range of subjects in Buddhist art will be chosen and investigated in depth.
대학원(Graduate School)

미술사연구방법강 3-3-0

Topics in Methodology of Art History
미술사의 다양한 연구법들을 살펴본다.
A survey of the methodologies used in the study of art history.

서양고대미술연습 3-3-0

Seminar in Ancient Art of the West
서양고대의 미술문화를 당대의 사회 문화적 환경과 연관지어 살펴본다.
This course undertakes a social and cultural study of ancient Western art.

바로크미술연습 3-3-0

Seminar in Baroque Art
바로크 미술의 정황을 다양한 각도에서 살펴본다.
This course is a survey of Baroque art and its numerous facets from various perspectives.

18세기 서양미술연습 3-3-0

Seminar in 18th-Century European Art
18세기 서양미술의 다양한 미술문화현상 중 하나의 주제를 선정하여 심도 있게 다룬다.
This course will choose and investigate, in depth, specific topics in 18th century European art.

19세기 서양미술연습 3-3-0

Seminar in 19th-Century European Art
19세기 후반 신고전주의부터 19세기 말 후기인상주의까지 전개된 서양미술의 흐름을 대상으로 하며, 특히 전유럽의 각지의 각지의 전통들과 부합한 영향력을 파악한 후, 각 시대의 특성과 체제를 중심으로 다양한 역사적 관점에서 대표적인 양식과 주요 작가들의 작품을 연구 분석하고자 한다.
This course studies European art from the Neo-Classicism of the late eighteenth century to late nineteenth century Post-Impressionism. Emphasis will be on the effects of the French Revolution as well as the great changes brought on by the Industrial Revolution. In-depth research on the works of major artists will be accompanied.

20세기 서양미술연습 3-3-0

Studies in 20th-Century European Art
20세기 서양미술의 다양한 미술문화현상들 중 하나의 주제를 선정하여 심도 있게 다룬다.
The class will choose and investigate a specific topic from the diverse phenomena found in the culture of the 20th century Western art.

미국현대미술연습 3-3-0

Seminar in Contemporary American Art
미국 현대 미술의 여러 현상들 중 하나의 주제를 선정하여 심도 있게 다룬다.

서양중세미술연습 3-3-0

Seminar in Medieval Art of the West
서양 중세의 미술문화를 당대의 사회 문화적 환경과 연관지어 살펴본다.
This course undertakes a social and cultural study of Medieval Western art.

한국도자사연습 3-3-0

Seminar in Korean Ceramics
통일신라시대부터 조선시대까지의 우리나라의 도자기를 다루되 도자기의 종류, 특성, 변화의 양상을 살펴본다.
This course undertakes a study of Korean ceramics from the Unified Shilla Kingdom to the Joseon dynasty. Focusing on the characteristics of different forms and styles, each lecture will be accompanied by discussions on specific topics.

사진사연습 3-3-0

Seminar in Photography
사진의 역사와 기법에 대해 살펴본다.
In this course, students will be introduced to the establishment, development and skills of photography.
M2641.000500 아시아 근대 사상 연습 3-3-0

Seminar in Modern Asian Thought

This course explores political thoughts in Asian societies. It focuses on diverse schools of thoughts in West Asia, India, Southeast Asia, and Japan after the "modern" era, especially discourses on "Asia," theories on nationalism and sociocultural discourses related to them. Students will study scholarly debates on colonialism and nationalism in Asia after the decolonization, theories and discourses on "Asia," in Japan and other areas, and historical backgrounds of those debates by analyzing diverse sources.

M2641.000600 아시아 고전의 근대적 해석 3-3-0

Modern Interpretations of Asian Classical Literature

Asia's classical literature is a subject matter of a new discipline with the rise of Western modern and colonial studies. This course will focus on representative Asian writers to understand Asian literature in the context of "world literature." We aim to attain a more balanced view towards Asian literature by providing an alternative to a Eurocentric perspective. According to the needs of the students, the course will be comprised of authors from each major area (Japan, India and Southeast Asia, Western Asia) or may focus on a particular writer such as Natsume Soseki, Premchand, Rabindranath Tagore, Pramoedya Ananta Toer, etc.
M2641.000900 아시아의 여성과 젠더 3-3-0

Women and Gender in Asia

이 과목은 여성과 젠더의 시각으로 아시아를 바라보는 대학원 과목이다. 유럽인들에 의한 아시아(혹은 오리엔트) 인식이 여성상과 어떻게 관련되어 있는지 살펴보고자 한다. 또한, 아시아 각 지역의 여성성과 남성성, 젠더 관계의 이슈들을 살펴본 후, 이러한 이슈들이 아시아 유럽 사이의 정치적 경제적 영향 속에서 어떠한 역할을 하게 되었는지 살펴보고자 한다. 지역간 비교를 도모하여 각 지역의 특성을 보다 깊이 있게 이해하도록 하며, 학생의 지역 전공에 따라 특화된 연구를 시도하도록 강려한다.

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This graduate course aims to examine Asia in terms of women and gender. It explores how the European perception of Asia (or the Orient) is closely related with femininity. In addition, we will be examining issues involving femininity, masculinity and gender relations in Asia, and furthermore, how these issues are contextualized in the political and economic dynamics between Asia and Europe. We will attempt comparisons between regions so that each region can be understood more deeply, and will encourage students to conduct specific research in regions of their own interests.

M2641.001000 대학원논문연구 3-3-0

Dissertation Research

학위논문을 준비하는 대학원생을 대상으로 개설되는 과목이다. 아시아인문학에서 수강생의 논문 작성을 위한 주제와 연구방향 선정, 국내외 자료수집, 논문의 전체적인 구성을 논문제목 및 최종 논문에 이르기까지 전과정에 걸쳐 지도교수와 토론하고 집중하여 심도 있는 논문 완성을 목표로 삼는다.

이 과목은 인문학 연구에 중요한 주제를 선별하여 원서 또는 영문자료에서 강의와 함께 이러한 텍스트에 대한 연구를 진행할 수 있도록 설계하고자 한다. 텍스트 분석 외에도 이 과목의 목표는 독특한 특성을 지닌 인문학문의 다양한 장르가 형성된 과정을 이해하는 것이다. 이를 위하여 텍스트가 저작되고 유포되었다시킨 시기의 사회-여성학적 맥락을 이해하며, 텍스트의 정체가 구체화되며 비평 또는 수정되는 과정까지 고찰할 것이다. 또한 필독자료를 통해 "문학"을 "신화"와 "역사", "정전과" 따로 분류하는 현대적인 연구방법론에 대해서도 고찰하고자 한다.

This course explores the transformation of Japanese society around the Meiji period, with a strong emphasis on the idea of “civilization.” The concept of “civilization” was imported from the West, and this course examines and considers the socio-cultural changes that the concept has brought, through the study of Enlightenment discourses and art expressions during this period.

M2641.001100 일본 문학 연습 3-3-0

Seminar in Japanese Literature


이 과목은 인문학 연구에 중요한 주제를 선별하여 원서 또는 영문자료에서 강의와 함께 이러한 텍스트에 대한 연구를 진행할 수 있도록 설계하고자 한다. 텍스트 분석 외에도 이 과목의 목표는 독특한 특성을 지닌 인문학문의 다양한 장르가 형성된 과정을 이해하는 것이다. 이를 위하여 텍스트가 저작되고 유포되었다시킨 시기의 사회-여성학적 맥락을 이해하며, 텍스트의 정체가 구체화되며 비평 또는 수정되는 과정까지 고찰할 것이다. 또한 필독자료를 통해 "문학"을 "신화"와 "역사", "정전과" 따로 분류하는 현대적인 연구방법론에 대해서도 고찰하고자 한다.

This course examines topics relevant to the study of Indian literature, focusing on the close reading of primary texts (either in its original language or in translation), and on studying contemporary scholarship relevant to these texts. Alongside textual analysis itself, however, the primary purpose and value of this course will be to understand the workings of various genres of Indian literature, each of which has distinctive features. Understanding how to properly read Indic texts involves investigating the socio-historical contexts in which these texts are composed and received, and also into the process by which textual canons are formed, maintained, critiqued and modified. The readings in the course will therefore provide occasions to rethink the category of “literature” itself, alongside other categories of “myth,” “history” and “religion.”

M2641.001200 인도 문학 연습 3-3-0

Seminar in Indian Literature

이 과목은 인도문학 연구에 중요한 주제를 선별하여 원서 또는 영문자료에서 강의와 함께 이러한 텍스트에 대한 연구를 진행할 수 있도록 설계하고자 한다. 텍스트 분석 외에도 이 과목의 목표는 독특한 특성을 지닌 인도문학문의 다양한 장르가 형성된 과정을 이해하는 것이다. 이를 위하여 텍스트가 저작되고 유포되었다시킨 시기의 사회-여성학적 맥락을 이해하며, 텍스트의 정체가 구체화되며 비평 또는 수정되는 과정까지 고찰할 것이다. 또한 필독자료를 통해 "문학"을 "신화"와 "역사", "정전과" 따로 분류하는 현대적인 연구방법론에 대해서도 고찰하고자 한다.

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M2641.001300 인도 문학 연습 3-3-0

Seminar in Indian Literature

이 과목은 인도문학 연구에 중요한 주제를 선별하여 원서 또는 영문자료에서 강의와 함께 이러한 텍스트에 대한 연구를 진행할 수 있도록 설계하고자 한다. 텍스트 분석 외에도 이 과목의 목표는 독특한 특성을 지닌 인도문학문의 다양한 장르가 형성된 과정을 이해하는 것이다. 이를 위하여 텍스트가 저작되고 유포되었다시킨 시기의 사회-여성학적 맥락을 이해하며, 텍스트의 정체가 구체화되며 비평 또는 수정되는 과정까지 고찰할 것이다. 또한 필독자료를 통해 "문학"을 "신화"와 "역사", "정전과" 따로 분류하는 현대적인 연구방법론에 대해서도 고찰하고자 한다.

This course examines topics relevant to the study of Indian literature, focusing on the close reading of primary texts (either in its original language or in translation), and on studying contemporary scholarship relevant to these texts. Alongside textual analysis itself, however, the primary purpose and value of this course will be to understand the workings of various genres of Indian literature, each of which has distinctive features. Understanding how to properly read Indic texts involves investigating the socio-historical contexts in which these texts are composed and received, and also into the process by which textual canons are formed, maintained, critiqued and modified. The readings in the course will therefore provide occasions to rethink the category of “literature” itself, alongside other categories of “myth,” “history” and “religion.”

M2641.001400 동남아시아사 연습 3-3-0

Seminar in Indian and Southeast Asian History

이 과목은 긴급한 인도와 동남아시아의 역사, 특히 근대사를 심도 있게 이해하기 위한 수업이다. 학생들은 근대 이전 인도와 동남아시아 사회의 형성, 종교·문화의 상호 연관성, 상업의 시대" 시기 국제무역을 통한 인도 동남아시아 사회의 형성, 유럽 식민 지배와 탐정민지화를 거쳐서 발생한 두 지역의 정치적, 사회문화적 변화 등을 연구한다. 학생들은 이 과정에서 나타나는 인도 동남아시아 사회의 자율성(autonomy), 문화의 국세성, 일상정치와 권력관계 등을 다양한 자료를 통해 탐구한다.

This course is to enhance students’ understanding of (modern) history of India and Southeast Asia. Students will explore the establishment of pre-modern Indian and Southeast Asian societies, religious linkage between the two regions, development of Indian and Southeast Asian societies through international trade in the “Age of Commerce,” as well as po-
Political and sociocultural transformations under European colonialism and decolonization in both regions. Students will discuss topics of the autonomy of Indian and Southeast Asian societies, internationality of their cultures, and everyday politics and power relations through reading diverse sources.

**M2641.001500 동남아시아 문명 연습 3-3-0**

**Seminar in Southeast Asian Civilization**

This course will explore subject matters of the subtitled course, with the aim of examining diverse political and sociocultural features in Southeast Asian societies. It explores the background and main elements of diverse cultural phenomena, social relations, wars, political conflicts, and environmental problems after the decolonization, and investigates the relationship between these phenomena and the legacies of colonial or “traditional” Southeast Asian societies.

**M2641.001600 근대 이슬람 연습 3-3-0**

**Seminar in Modern Islam**

This course is a graduate level seminar concerning diverse topics in modern West Asia and the Islamic world, such as Islam and modernity, relations between religious communities and sectarianism, or the contemporary development of political Islam, depending on student demands.

**M2641.001700 서아시아 문명 연습 3-3-0**

**Seminar in West Asian Civilization**

This course may be offered as a graduate level seminar in humanities that can deal with one of diverse topics in West Asian civilization, such as philology of ancient orient, primary sources for the study of early Islam, or premodern West Asian literatures, depending on student demands.
131.501 Introduction to Classical Philology

This course is a continuation of Readings in Classical Greek Texts 1. For this class, the students will read the works of Herodotus, tragedies.

The purpose of this course is to prepare students for further studies in classical texts by providing them with the necessary knowledge. The students will examine the history of texts, manuscript collections, text criticism, methods of understanding the text and the interrelationship between philosophy and other disciplines. A certain level of background knowledge in classical languages is recommended for those interested in taking this course.

131.503A Studies in Greek Stylistics

This course is a continuation of Readings in Classical Greek Texts 1. For this class, the students will read the works of Demosthenes and Thucydides.

The purpose of this course is to help students conduct research and analyze problems by reading works of Virgil, Horace, Terence, and Cicero not only to understand their contents but to improve their skills in analyzing the rhetorical methods used in these works.

131.505A Readings in Classical Greek Texts 1

This course is a continuation of Studies in Classical Greek Texts 1. The historical and philosophical writings and those of the Byzantine period will be studied.

The purpose of this course is to help students conduct research and analyze problems in the works of Homer as well as the epics, lyrics, tragedies and comedies of later Greek writers.

131.506A Readings in Classical Greek Texts 2

This course is a continuation of Readings in Classical Greek Texts 1. For this class, the students will read the works of Herodotus, tragedies.

131.507 Readings in Classical Latin Texts 1

This course is a continuation of Readings in Classical Latin Texts 1. Works of Livy, Ovid, Lucretius, Tacitus as well as Cicero will be read.

131.509A Studies in Classical Greek Texts 2

This course is a continuation of Readings in Classical Greek Texts 2. The purpose of this course is to help students conduct research and analyze problems in the works of Homer as well as the epics, lyrics, tragedies and comedies of later Greek writers.

131.510A Studies in Classical Greek Texts 2

This course is a continuation of Studies in Classical Greek Texts 2. The purpose of this course is to help students conduct research and analyze problems in the works of Homer as well as the epics, lyrics, tragedies and comedies of later Greek writers.

131.511A Studies in Classical Latin Texts 1

This course is a continuation of Studies in Classical Latin Texts 1. The historical and philosophical writings and those from the Byzantine period will be studied.

131.512 Studies in Classical Latin Texts 2

This course is a continuation of Studies in Classical Latin Texts 2. The purpose of this course is to help students conduct research and analyze problems in the works of Homer as well as the epics, lyrics, tragedies and comedies of later Greek writers.

학점구조는 "학점수-주당 강의시간-주당 실습시간"을 표시한다. 한 학기는 15주로 구성됨. (The first number means "credits"; the second number means "lecture hours per week"; and the final number means "laboratory hours per week. 15 weeks make one semester.)
네가, 펄리아누스 등의 문헌을 다루면서 고전문학문헌의 연구를 심화시킨다.

This course is a continuation of Studies in Classical Latin Texts 1. In this course, the surveyed courses will be Tacitus, Seneca and Quintillian.

131.513 고전문학문헌강독 3-3-0

Readings in Theories of Classical Literature

이 과목은 플라톤, 아리스토텔레스, 호라티우스, 토마누스의 문학관련서들을 강조함으로써 고전문학에 대한 이해를 심화시키고 고전문학문헌을 이해하게 하는 데 목적이 있다.

In this course, students will read the works of Plato, Aristotle, Horace and Longinus.

131.516A 고전그리스문학연습 1 3-3-0

Seminar in Classical Greek Literature 1

이 과정은 헤로도토스, 투키디데스, 플라톤의 원문들 중에서 정해진 주제에 알맞은 핵심적인 부분을 발췌해서 강조함으로써 그 주제에 대한 학생들의 이해를 증진시키는 것을 목표로 한다.

Selected themes and passages from Herodotus, Thucydides, Plato, concerning specific topics, will be read and discussed in this course.

131.517A 고전그리스문학연습 2 3-3-0

Seminar in Classical Greek Literature 2

이 과정은 위의 <고전그리스문학연습 1>의 연속선상에서 이미 개진된 주제 영역을 보다 심화하는 단계이다.

This course is a continuation of Seminar in Classical Greek Literature 1. It will delve deeper into the issues brought up in the previous course.

131.518 고전라틴문학연습 1 3-3-0

Seminar in Latin Literature 1

고대 라틴문학이 초기시대, 황금시대(키케로 시대와 아우구스 트 시대), 은시대를 거치면서 각 시대의 정신의 개방성과 세 시대를 괴롭는 보편적 정신이 무엇인지는 각 시대에 특징적인 작품의 원문을 강조하고 연구함으로써 조망한다.

This course provides an overview of the characteristics of classical Latin literature in the archaic period, the Golden Age and the Silver Age. By reading and studying literary texts, students will contrast the differences of each period as well as search for their common traits.

131.519 고전라틴문학연습 2 3-3-0

Seminar in Latin Literature 2

이 과정은 <고전라틴문학연습 1>의 연속선상에서 이전과정을 보다 심화시키는 단계이다.

This course is a continuation of Seminar in Classical Latin Literature 1. It will delve deeper into the issues brought up in the previous course.

131.520A 고전그리스산문선독 1 3-3-0

Selected Readings in Classical Greek Prose 1

플라톤과 아리스토텔레스와 푸티누스 등의 문학평가이론에 대한 원문을 강조함으로써 고전문학 내 다이어그램의 내용과 방법을 검토하고 연구한다.

In this course, the methods of classical literary criticism will be discussed through the readings of works from Plato, Aristotle and Longinus.

131.521A 고전그리스산문선독 2 3-3-0

Selected Readings in Classical Greek Prose 2

이 과정은 <고전그리스산문선독 1>의 후속과정으로서 목표된 주제에 대한 이해의 심화를 목표로 한다.

This course is a continuation of Selected Readings in Classical Greek Prose 1.

131.522 고전라틴산문선독 1 3-3-0

Selected Readings in Classical Latin Prose 1

이 과정은 키케로, 푸티누스 등의 원문들 중에서 주제에 알맞은 부분을 강조하고 연구함으로써 학생들의 깊고 복잡한 이해의 증진을 목표로 한다.

By reading and discussing selected passages from Cicero, Seneca and others, the course will enhance the students’ ability to understand any given topic in depth.

131.523 고전라틴산문선독 2 3-3-0

Selected Readings in Classical Latin Prose 2

이 과정은 <고전라틴산문선독 1>의 후속과정으로서 전과정에서 이미 개진되었던 주제를 심화시키면서 타 주제들과의 연관성을 검토하는 단계이다.

This course is a continuation of Selected Readings in Classical Latin Prose 1. It will delve deeper into the issues brought up in the previous course.

131.524 고전문학비평연습 1 3-3-0

Seminar in Classical Literary Criticism 1

고전 문학의 비평이론을 근대문학과 연속성의 관점에서 검토하고 연구한다.

This course surveys the classical literary criticism in its continuity and development of modern literature.

131.525 고전문학비평연습 2 3-3-0

Seminar in Classical Literary Criticism 2

고전 문학의 비평이론을 근대문학과 연속성의 관점에서 검토하고 연구한다.

This course is a continuation of Seminar in Classical Literary Criticism 1.

131.526 고전문학과 근대문학 1 3-3-0

Classical Literature and Modern Literature 1

고대 그리스어 문학의 모태라는 인식하에 그 영
향의 구체적 과장을 확인하고 그 연속성과 발전상을 검토한다.

Classical Greek literature serves as the root of modern literature. This course examines the theme of continuity and development through the reading of classical and modern literature.

131.527 고전문학과 근대문학 2 3-3-0

Classical Literature and Modern Literature 2

<고전문학과 근대문학 1>의 연속과정으로서 전과정에서 설정된 주제를 보다 심화시킨다.

This course is a continuation of Classical Literature and Modern Literature 1.

131.528 라틴문체연습 3-3-0

Studies in Latin Stylistics

이 과정에서는 고전 라틴작가들의 전형적인 문체의 특징을 체계적으로 정리하여 강의하고 실제로 원문분석을 해나가면서 숙지시킨다.

An intensive reading of selections from the major authors, with lectures and discussion on the metrical and stylistic developments of Latin poetry and prose. Special attention will be paid to the defining features of classical Latin prose styles, or what Late Antiquity, the Middle Ages and the Renaissance perceived to be the “classical” Latin.

131.529 고전문학이론연구 3-3-0

Studies in Classical Literary Criticism

고전 그리스, 로마 시대의 문학이론을 일차문헌 중심으로 살펴본 다음 그와 관련된 역사적 맥락을 물론 실제 문학 활동에도 일관한 시간과 관심을 할애한다. 이 과목의 궁극적 목표 중 하나는 고전시대의 문학이론이 현재에도 유효할 뿐 아니라 마르크스, 프로이트, 데리다, 푸코와 같은 현대의 가장 영향력 있는 문화/문학 이론을 만들어낼 수 있었던 이유를 찾아보는 데 있다.

An intensive reading of major texts of classical literary criticism, with special attention to the historical context of their production, and to their reception and appropriation by such modern and post-modern theorists of literature and culture as Marx, Freud, Derrida, and Foucault.
Methodology in Cognitive Science

This course helps students investigate the research methodologies of diverse disciplines such as Philosophy, Linguistics, and Computer Science as they relate to Cognitive Science. Through such investigations, students will find their own methods of research in accordance with their individual interests.

132.502 Methodology in Cognitive Science

132.504 Seminar in Cognitive Science 1

132.505 Issues in Cognitive Science

132.510 Studies in Philosophy of Logic and Cognitive Science

132.511 Studies in Philosophy of Science and Cognitive Science

132.520 Syntactic and Semantic Structure and Cognition

132.530 Information Processing

132.531 Modeling of Cognitive Processes

 Students are introduced to the Philosophy of Science dealing with Rationalism and Realism through the works of Cognitive Science and scientific endeavor. The methodological aspects are closely examined and the quantum-physical implications for Cognitive Science are discussed. The issues regarding naturalization in the Philosophy of Science will be also addressed in relation to Cognitive Science.
ing theoretical models that account for the experimental results of Cognitive Psychology. The course will introduce a variety of models, including symbol manipulatives. Assessing and developing theoretical models will also be an important part of the course.

132.540 Studies in Neuroscience and Brain 1

This course aims to investigate how the research on Cognitive Science influences other fields of research. It will also deal with the question, “What potential application does Cognitive Science have in solving the problems of everyday life?”

132.560 Studies in Natural Language Processing

Several courses in the Cognitive Science program build upon the materials covered in <Seminar in Cognitive Science 1>. Its goal is to provide students with an extensive background on the topics and the research history related to Cognitive Science.

132.550 Studies in Knowledge Representation and Reasoning Process

This course aims to investigate how the research on Cognitive Science influences other fields of research. It will also deal with the question, “What potential application does Cognitive Science have in solving the problems of everyday life?”

132.551 Computational Models of Intelligence

This course aims to investigate how the research on Cognitive Science influences other fields of research. It will also deal with the question, “What potential application does Cognitive Science have in solving the problems of everyday life?”

132.541 Seminar in Cognitive Neuroscience

This course builds upon the materials covered in <Seminar in Cognitive Science 1>. Its goal is to provide students with an extensive background on the topics and the research history related to Cognitive Science.

132.550 Seminar in Application of Cognitive Science

This course builds upon the materials covered in <Seminar in Cognitive Science 1>. Its goal is to provide students with an extensive background on the topics and the research history related to Cognitive Science.

132.560 Seminar in Natural Language Processing

Students in this course will investigate the computational models that account for natural intelligence. The primary objective of the course is to deepen the students’ understanding of the cognitive process through analyses of the intelligent agents that exhibit the characteristics of natural intelligence, including autonomy, goal-directedness, reactivity, reflectiveness, adaptation, learning, and reasoning.

132.560 Seminar in Natural Language Processing

This course builds upon the materials covered in <Seminar in Cognitive Science 1>. Its goal is to provide students with an extensive background on the topics and the research history related to Cognitive Science.
class, as well as issues concerning consciousness, reason, emotion, will and perceptions.

132.620 언어구조와 인지 3-3-0
Language Structure and Cognition
언어구조를 음운, 통사, 의미의 구조로 나누어 생각해 본다면 언어의 사용과정에 필요한 것은 이러한 언어구조들을 처리가능한 일련의 정보의 형태로 표상화해야 한다는 것이다. 이러한 과정을 분석하기 위해 언어의 구조가 인지구조로 표상되는 과정을 연구한 결과를 살펴보고, 자연인의 구조구조적인구조가 이루어 놓은 일련의 성과들을 조망한다.

This course provides an overview of the results of the research on how linguistic knowledge is represented within the framework of general cognition. Specifically addressed are syntactic analysis and its contributions to the field.

132.630 인지심리학연습 3-3-0
Seminar in Cognitive Psychology
인지과학에서 심리학의 여러 주제를 어떻게 다루어 널 것인가에 대해 기존의 인지심리학의 연구사를 개괄하며 인지현상과 심리현상과의 상관관계를 파악하도록 유도하는 데 본 과목개설의 목적이 있다.

This seminar addresses some of the issues within Cognitive Psychology in order to understand the relationship between cognitive phenomena and psycho-phenomena.

132.631 인지과학실험설계 및 통계분석 3-2-2
Seminar in Experimental Design and Statistical Analysis
본 강좌는 인지과학의 과학적 연구방법론으로서, 실험의 연구방법론에 대한 이해를 높이고, 다양한 연구주제를 실험적 방법으로 거쳐 연구 및 분석을 행할 수 있는 과학적 연구능력을 배양하는 것을 목적으로 한다. 이를 위해 실험방법론의 기본원리 및 다양한 실험설계 기법과 실험결과에 대한 통계분석 기법을 소개하고 이를 응용하여 자신이 구상한 실험을 설계하고 이의 결과를 분석하고 해석하는 연습을 하게 한다.

This seminar furthers the understanding of experimental research methods and cultivates research skills related to various topics using such methods. Students will learn basic principles of the experimental method, experiment design, analysis and statistics.

132.640 신경과학과 두뇌연구 2 3-3-0
Studies in Neuroscience and Brain 2
<신경과학和发展 연의 1> 과목과 내용적으로 연관성이 있으며 관련된 분야 및 관련내용을 보다 심화하여 연구할 수 있도록 한다.

This course follows <Studies in Neuroscience and Brain 1>, taking a more in-depth look at the subject.

132.641 인지장애연구 3-3-0
Studies in Cognitive Dysfunction
기존의 인지과학 관련과목들이 정상적 인지기능을 대상으로 한 연구에 중점을 둔 반면 이 과목에서는 인지기능의 장애를 분석해 상으로 한다. 심각성을 표현할 의학적 연구방법과 인지결과를 소개하고 이를 정상인지 연구에 응용할 수 있도록 하는 것이 이 과목 신설의 목표이다. 이러한 연구의 학습을 통해 기억, 언어, 주의력 등 인지기능의 장애를 일으킨 환자의 병리를 이해하고 동시에 이를 정상 인지기능의 균형에 응용한다. 이를 위해 본 강좌는 신경생리학, 신경생물학, 신경영상법 등의 여러 분석 방법들을 통해 언어간 비전 의학적 지식들을 논의하고 인지기능과의 핵심구조의 상관관계에 의한 가설적 모델들에 대해 소개 및 실험, 이의 결과에 대한 토론으로 진행한다.

Whereas other courses on Cognitive Science focus on the 'normal' cognitive abilities of humans, this course will study cognitive disabilities. By contacting patients with cognitive disabilities, students will gain understanding of normal cognitive abilities through the contrasts and application of insights gained from such study. They will have a hands-on opportunity to experiment with various technology of neuro-imaging as well as investigate hypothetical models which account for some of the disabilities.

132.642 기능적뇌영상법실습 3-0-6
Experiments in Functional Neuroimaging
인지신경과학 분야의 주요 연구방법들인 fMRI, PET 및 ERP를 이용한 실험에 참여한다. 이로 통해 이 연구방법들의 원리와 실험설계 및 응용분야 등을 경험적으로 이해할 수 있는 기회를 제공한다.

In this course, students will learn the basic methods of experiment and the principles of experimental cognitive psychology through the use of various methods such as fMRI, PET and ERP.

132.650 인공지능과 인지과정연구 3-3-0
Studies in Artificial Intelligence and Cognitive Process
인간의 인지능력에 대한 충분히 가설과 이론은 인간과 동일한 수준의 사고를 수행할 수 있는 인공지능의 설계에 직접적인 도움을 줄 수 있어야 한다. 인공지능과 인간인지의 근본적 차이점은 무엇이며, 과연 어느 정도의 인지능력이 기계나 프로그램에 의해 모사될 수 있는지, 그 모사의 방법과 이론은 어떤 것인지 연구하게 된다.

In this course, students will learn the fundamental differences between human cognitive processes and those of machines as well as the extent to which the machines can mimic humans in their cognitive ability. They will also learn how to develop theories and hypotheses on human cognition with the aim of designing intelligent machines with similar human cognitive abilities.
133.501 Research Methods in Comparative Literature

A compulsory course for graduate students. This course examines methodologies and developments in the study of comparative literature by examining various selected works. Students will also investigate general problems and explore new directions within the field.

133.502 General Theories of Literature

This course investigates the establishment of general literary theories in various Eastern and Western literature. It also reviews problems of literary theories in general, as well as explores the development of new theories. It is a compulsory course for all graduate students.

133.503 Theory and Practice of Translation

This course examines the development and problems in translation sessions to discuss practical problems raised in literary translation.

133.504 Stylistics

Stylistics

Students will be exposed to various Eastern and Western theories on Stylistics. The course deals with the stylistic variety in works of literature and considers its significance in the study of Comparative Literature.

133.505 Comparative Studies in Asian and Western Literature

This course examines the achievements and problems in translating Literature with other fields of art such as Fine Art, Music, Dance, Drama and Film. It also explores new methods of interdisciplinary research.

133.506 Comparative Studies in Asian Literature

This course examines the development and problems in the comparative studies of Asian literature. Students will inquire into new topics for research.

M1282.000100 Studies in Comparative Literature

This course is designed to support intensive topical research for Comparative Literature graduate students who are planning to complete an interdisciplinary research paper. Focusing on special topics relevant to interdisciplinary research plan, this course tries to help students to significantly examine the selected topics, to improve the quality of the paper, and to facilitate the completion of interdisciplinary research. It aims to achieve the qualified research paper during the semester with the cooperation of academic advisor.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>133.512</td>
<td>Topics in Comparative Literature 2</td>
<td>3-3-0</td>
<td>This course examines and further investigates topics which are normally not dealt with in other courses, allowing for the development of new research areas.</td>
</tr>
<tr>
<td>133.602</td>
<td>Comparative Studies in the History of Literary Ideas</td>
<td>3-3-0</td>
<td>This course examines the historical development of various literary ideas of the East and the West, focusing on common trends in literary theory.</td>
</tr>
<tr>
<td>133.603</td>
<td>Comparative Studies in Literary Genres</td>
<td>3-3-0</td>
<td>This course will examine the history of various genre theories in the East and the West, focusing on their shared trends.</td>
</tr>
<tr>
<td>133.605</td>
<td>Seminar in Comparative Literature 1</td>
<td>3-3-0</td>
<td>This is a follow-up course to &lt;Seminar in Comparative Literature 1&gt;. It further refines the skills learned in the previous course.</td>
</tr>
<tr>
<td>133.606</td>
<td>Seminar in Comparative Literature 2</td>
<td>3-3-0</td>
<td>This course is intended to help the student who is preparing his or her thesis or dissertation. Student will select and study the topic he or she has chosen under the direction of his or her supervisor.</td>
</tr>
</tbody>
</table>
This course introduces students to explore academic definition, history and research range of archival studies and gain knowledge through the studies. Modern archival studies, which is based on theories and practices derived from western culture is developed in relation to modern technology. Accordingly, through review of previous studies this course will introduce principles and techniques of archival studies to students to recognize the academic record of the studies in the area of systematic and scientific knowledge and then serve to connect those with specific archival studies in a class.

This class will examine the special topics of Archival Studies. Especially, students will study about the topics that are important for in-depth study of Archival Science, but not organized to independent subject.

Archival Management Practice

This class examines the history of archives management. In this course, students may focus on understanding background of current western archival management. This class will examine the history of archives management of Korea. The history from ancient times to recent years will be examined, and it will be analyzed to be applied to today's Korean records management system. It reviews traditional archives, such as (Goryosa) and <Annals of the Joseon Dynasty> studying the operation of archives and records management changes in rules and regulations since the Gabo Reform of 1894, the overall management of records from the Japanese colonial period and explaining the direction of contemporary records management.

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management system studying power and process of their systematization and other related laws. Also students may search for an each National Archives so that they could intend to establish an ideal future models of RMS.

**M2919.000500**

**서양의 고문서학 3-3-0**

Archival Studies in Pre-modern West

고문서학은 역사 기록의 가치를 비평적으로 평가하고 이를 바탕으로 진실한 역사에 접근함을 추구한다. 서양 고문서에 대한 연구는 시대적 배경에 따라 나타나는 기록의 특정 내용 및 형식적 측면의 지식을 빼는 것과 더불어, 진실한 역사에 대한 인식을 바탕으로 사료 가치에 대한 비평적인 안목을 갖추도록 할 것이다.

Western Palaeography seeks after approaching the truthful history based on a critical evaluation of historiography. A study of western palaeography help us to accumulate knowledge of records’contents and format produced in each phase of the times, further it may contribute to have a critical perspective about documents based on a recognition about truthful history.

**M2919.000600**

**중국의 고문서학 3-3-0**

Archival Studies in Pre-modern China

중국의 고문서에 대한 연구는 시대적 배경에 따라 나타나는 기록의 특정 내용 및 형식적 측면의 지식을 빼는 것과 더불어, 진실한 역사에 대한 인식을 바탕으로 사료 가치에 대한 비평적인 안목을 갖추도록 할 것이다. 가능하면 중국과 우리나라 사이에 왕래한 고문서에 대한 연구도 병행한다.

Chinese Palaeography help us to accumulate knowledge about records’contents and format produced in each phase of the times, further it may contribute to have a critical perspectives about documents based on a recognition about truthful history. If possible, class will run parallel with a study of exchange paleography between Korea and China.

**M2919.000700**

**일본의 고문서학 3-3-0**

Archival Studies in Pre-modern Japan

고문서학은 역사기록의 가치를 비평적으로 평가하고 이를 바탕으로 진실한 역사에 접근함을 추구한다. 일본 역사와 문화의 실제를 구체적으로 보일 수 있는 전통 문화의 사회사적인 사료로서 고문서의 가치와 특성을 설명하고, 고문서 분류의 이론과 실제를 다룬다. 일본의 시대적 배경에 따라 나타나는 기록의 특정, 내용 및 형식에 대한 지식을 빼고 동아시아사각에서 사료 가치를 비평할 수 있는 안목을 갖출 수 있도록 한다.

Palaegraphy is based on the critically assess the value of historical records and pursue the historical truth. Old manuscript is a social historical materials that determine Japanese history and culture of substance. This subject will be explain the value of Japanese archives and deals with the theory and practice of classified archives. Study contents and format of archives on historical background of Japan, develop one’s ability to criticize historical materials in east asian perspective.

**M2919.000800**

**한국의 고문서학 3-3-0**

Archival Studies in Pre-modern Korea

조선시대 기록관리의 특성은 원본 기록 편가, 영구보존 기록의 편찬 보람이라고 할 수 있다. 영구보존 기록 편찬에 주로 되었던 원본이 고문서로서 국왕, 정부 각 관청, 개인의 생산의 주체이 다. 각 주체에 의한 고문서의 생산 유동 과정을 살펴봄으로써 조선시대 문서행정의 절차와 과정, 문서의 종류를 알게 될 것이다. 나아가 문서종류별 내용을 파악할 수 있도록 강독을 진행한다.

The records management of Joseon dynasty is characterized by disposal of records, compilation preservation of archives. A paleography is an original copy which was the basement of compilation of Korean archives, and it was usually written by a king, governmental organization or an individual. Through an examination of production and circulation of an each subjective paleography, students may understand the process and the types of documents administration. Further it will have them to understand many kinds of archives’ original texts.

**M2919.000900**

**조선시대 실험 연구 3-3-0**

Studies in the Annals of the Joseon Dynasty

조선시대 영구보존기록 편찬의 대표적인 사례인 실록에 대해 실험의 편찬과 보관 과정에 대해 파악하고 주제별로 실험의 특색을 강조한다.

This course aims at intensive understanding of the compilation and preservation of annals of Joseon dynasty which are prime examples of an archives in Joseon periods.

**M2919.001000**

**전자기록특강 3-3-0**

Topics in Electronic Records

국내외에서 널리 알려졌전 자기록시스템의 구축 사례를 탐구하고 기반은 되는 정보 기술에 대해 배운다. 기록물의 형식(텍스트, 이미지, DB 등)과 수집되는 경로(sms, 향, 고문서 등)에 따라 적용될 수 있는 정보 기술의 종류를 이해하고, 데이터의 관점에서 기록물이 효율적으로 관리되기 위한 데이터 표현 방법과 박데터 기반의 기록물 분석 방법 등에 대해 학습한다.

This class will explore well known cases of international or domestic electronic record systems and will also cover the technology behind these systems. We will understand the types of information technologies that can be applied to various record formats (text, image, DB, etc.) and also the ways these records can be gathered.

**M2919.001100**

**기록물 메타데이터 3-3-0**

Metadata in Archival Resources

메타데이터를 통한 전자기록 정보의 구조화 전반에 대해 다룬다. 메타데이터를 단순히 정보기술의 이론적 관점에서만 학습하는 것이 아니라, 역사기록물이나 인류문화유산 정보를 효과적으로 아카이브하기 위한 융합학문의 관점에서 살펴본다. 이를 위해 Semantic Web and Linked Data 기술에 대한 이해와 첨단 정보기술을 활용한 디지털 인문학에 대해서도 함께 조망할 것이다. 다름이 선진국의 문화유산 아카이브를 위한 여러 모델들을 살펴보고 우리나라에서의 적용과 활용에 대해 고민해 본다.

This class will cover the overall structures of electronic records, not only from theoretical information technology perspectives, but as a converged study to efficiently archive historical artifacts and information on cultural heritage. To this goal, Semantic Web and Linked Data technologies will be investigated as well as digital humanities that use
top-notch information technologies. Also, archiving models for cultural heritage in developed countries and their application and use in Korea will be considered.

**M2919.001200 기록의 검색과 활용 3-3-0**  
Searching and Utilizing Archival Resources

This class analyzes service requirements in information retrieval in archives, with consideration of various viewpoints and usage goals. The history and theories of information retrieval will be studied. Case studies for information retrieval in archives will be presented that include image, natural language (Korean and Chinese) retrieval technologies, as well as analysis on weaknesses and strengths of current information retrieval technologies. Finally, projects will be carried out that builds information retrieval service models.

**M2919.001300 민간기록류특강 3-3-0**  
Topics in Private Records

This course will be understand the characteristics of private records by identifying the current situation about a collection of works, diaries, genealogies, the other private records and reading these documents. It aims to find out the collection, description, preservation status of private records by researching contents information and devise a plan to build a system of preservation management. Furthermore, it puts significance on developing capacity to conduct a research performing real investigation of Kyujanggak, other organization and private collections.

**134.601 대학원논문연구 3-3-0**  
Dissertation Research

Under the guidance of a faculty member, the student will choose his or her dissertation topic and research the thesis.
135.501 History of Performing Arts Theories in Asia

The course investigates the history of theoretical research for performing arts, particularly that of Korea, China, and Japan. Students will further examine the changes in development and interactions with Western culture, focusing on a certain region.

135.502 History of Performing Arts Theories in Europe

This course delves into the correlations of pe99 reforming arts (drama, dance, and music drama), plastic art and literature. Students will examine their changes and aspects as a result of contact between different cultures.

135.503 Studies in Korean Traditional Theatrical Arts

Students will investigate the formation and the features of Korean traditional theatrical arts, with a particular emphasis on a certain region.

135.504 Studies in Modern Korean Theatre

Students will study various aspects and meanings of modern Korean theatre, result of Korean theatre's contact with Western countries and cultures.

135.505 Aesthetics of Performing Arts

Aesthetics of Performing Arts

18세기 이후에 이루어진 미학 및 예술학의 성과들에 비추어 공연예술의 특성을 규명하고자 한다. 아리스토텔레스의 연극이론에 대한 근대 내지 현대 미학의 비판적 도전이 중점을 이룰 것이다.

135.506 Seminar in Performing Arts

Sociological Studies in Performing Arts

This course examines various contemporary performing theories or methodologies on the basis of such ideals as semiotics and feminism. The class will also delve deeper into the features of the performing arts.

135.508 Special Studies in Modern Performing Arts

Students will examine the interrelationship between art and society. They will attempt to understand the cultural-economic demands of cultural policies or art administrations.

135.509 Comparative Studies in Performing Arts

Comparative Studies in Performing Arts

135.510 Aesthetics of Performing Arts

Aesthetics of Performing Arts

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135.602A매체공연예술론 3-3-0

Studies in Media Performing Arts

공연예술에 활용되는 다양한 매체와 그 효과를 고찰하며, 공연예술의 새로운 방향을 모색하고자 한다.

This course searches for various media and examines the effects of new media. Also, through this class, the students will search for a new direction in performing arts.

135.603공연예술비평론 3-3-0

Performing Arts Criticism

기술, 해석, 평가를 포함한 예술비평의 기본원리를 바탕으로 공연예술의 비평에 수반되는 제반 문제들을 검토하는 동시에 구체적인 사례를 통해 공연예술비평의 실제를 검토하고자 한다. 여기에는 놀라운 설정하고 있는 공연예술의 평론 사례들의 분석과 진행 중이며 있는 공연예술에 대한 평론 작업이 함께 포함될 것이다.

The course investigates the basic problems present in the critical study of the performing arts. Students will consider the principles of art criticism including description, interpretation and evaluation.

135.609음악극연구 3-3-0

Studies in Music Dramas

음악극에 대한 역사적 양식적 고찰을 통해 이에 대한 이해를 촉구하는 한편, 20세기에 들어서 그 존재가 투명해진 뮤지컬이 지닌 특성과 문제를 고찰한다. 아울러 창작, 연극 등의 형태로 이루어지고 있는 한국적인 음악극의 양상을 검토하여 그 가능성을 파악함으로써 한국적 음악극의 진로를 모색하고자 한다.

The aim of this course is to gain an understanding of musical drama from an historical and stylistic perspective. There will also be discussions on the problems of the ‘Musical’ which became prominent in the twentieth century. Included in these discussions will be the examination of Korean musical dramas, such as ‘Chang’ and ‘Ak’.

135.610무용극연구 3-3-0

Studies in Dance Theatre

무용예술에 대한 역사적 양식적 고찰을 통해 이에 대한 이해를 촉구하는 한편, 무용이 지닌 무용예술적 성격을 규명한다. 특히 무용극이 지닌 창작적 특성을 구체적인 유형들에 따라 고찰하는 동시에 한국에서 이루어지고 있는 무용극의 양상들이 지닌 가능성과 한계성을 파악함으로써 한국적 무용극의 진로를 모색하고자 한다.

Students will gain a historical and stylistic point of view of dance theatre while examining its dramatic characteristics.

135.611공연예술제작연습 3-3-0

Seminar in Producing Performing Arts

극작, 연출, 연기, 무대 미술 등 공연예술 제작과 관련된 실질적인 내용을 검토하며, 제작 전반에 대한 창작적인 시각을 배양한다. 본붽에 따라 강좌마다의 중점 사항을 제시하게 될 것이다.

This class will focus on the practical and creative perspective for producing performing arts. This class includes the playwrighting, directing, acting, stage and design, and theatre space in terms of practical applications.

135.803대학원논문연구 3-3-0

Reading and Research

학위논문을 쓰기 위한 기술적 혼란과 아울러 연구주제에 대한 이해 정도를 점검하는 지도과정으로서, 개별적인 지도와 함께 발표 등의 집단적 지도를 병행하도록 한다. 때에 따라서는 소규모의 세미나 등을 통해 외부 지도인력의 유입을 시도할 수도 있다.

This course will teach the students the techniques and methods necessary to write a treatise.
사회과학대학
College of Social Sciences
216A.507A 선택연구 3-3-0

Studies in Elections

This course focuses largely on micro-level analyses of attitudinal and behavioral patterns found among the political elite and citizenry. Students are introduced to differing theoretical approaches to studying political behavior such as sociological, socio-psychological, rational choice and institutional perspectives. Topics include citizens’ psychological orientation toward principles and practices of democracy, voters’ participatory and choice behavior, candidates’ strategic presentation toward principles and practices of democracy, vote decisions toward principles and practices of democracy, vote decisions. Students will be introduced to differing theoretical and behavioral patterns found among the political elite and citizenry.

216A.509A 정치사회이론 3-3-0

Theories of Political Sociology

This course investigates the particularity of the North Korean political system, power, process and ideology, using the universal framework of comparative politics. Students study the North Korean political process and various concepts such as “red vs. experts”, socio-political organisms based on paternalistic corporatism, and Juche ideology as well as North Korean nationalism.

216A.512 북한정치연구 3-3-0

Studies in North Korean Politics

This seminar is designed to offer a comparative study of the world’s parliaments and legislatures. It focuses on the following major topics: the concept of political representation, the historical development of parliament, its functions, its internal organization and parliamentary decision-making, as well as its relationship with the executive branch. Students will not only thoroughly review the fundamental documents on these topics but refine their skills for their own research.

216A.515 온라인정치연습 3-3-0

Seminar in Parliamentary Politics

This course focuses on the following major topics: the concept of political representation, the historical development of parliament, its functions, its internal organization and parliamentary decision-making, as well as its relationship with the executive branch. Students will not only thoroughly review the fundamental documents on these topics but refine their skills for their own research.

216A.513 계량정치분석 3-3-0

Quantitative Political Analysis

This course is designed to discuss and critically analyze major theoretical and empirical works on governance. The topics that will be covered in class include b-
216A.517 비정치경제 3-3-0

Comparative Political Economy

이 과목은 세계화시대 자본주의의 시장경제의 형성, 발전, 개혁에 대한 비교정치·정체학적 이해가 그 목적이다. 세계화로 인해 자본주의의 시장경제가 서로 수립되고 있는 지는 다양한 문맥에서 복잡히 갖고 있는 지의 문제가 중요한 논쟁으로 대두되고 있다. 이에 이 과목은 세계화 시대 자본주의의 상호관련성 및 동彷가 정책에 따라 국가의 역할이 어떻게 서로 다르게 또는 유사하게 대응하는지 문제를 분석한다. 분석의 주된 조건은 국제정치경제, 국내 제도, 경제정책, 정치적 선호 등의 요소들이 자본주의의 경제에 미치는 영향과 그들 간의 상호작용에 둘. 분석대상은 시구 자본주의 국가와 제3세계 국가, 특히 동아시아 국가이다.

이 세미나는 제1편 이론적 분석틀을 제시한다. 이 세미나는 제2편 동아시아의 성장과 위기의 구성과 전개, 그리고 제3편 동아시아 개별국가의 대응에 대한 비교분석 등에 초점을 둔다.

216A.518A 동아시아정치경제연구 3-3-0

Studies in Political Economy of East Asia

이 과목의 제1편은 세계경제성장의 한 축인 동아시아지역의 발전과 발전에 대한 경제정책적 이해를 그 목적으로 한다. 동아시아 개발국가의 발전에 대한 이해는 동아시아 지역 내 국가간 역동적 상호작용에 의해, 그리고 세계화사에 반영된 외부환경과의 관계로서 분석될 수 있다. 제2편에서는 발전을 설명하는 정치경제의 다양한 이론적 분석틀을 제시한다. 제3편에서는 국제정치경제의 역할변화, 동아시아의 성장과 위기, 그리고 세계화에 대한 동아시아 개발 국가의 대응에 대한 비교분석 등에 초점을 둔다.

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216A.601 정책학방법론 3-3-0

Scope and Methods of Political Science

과학적 정책학의 출발점으로서의 방법론적 전제에 대한 이론적 학습과 구체적 응용기법을 다룬다. 정책학설에 대한 과학적 질문의 구성과 전제, 논리적· 경험적 수준과 증명의 과정을 이해하고, 특히 통계, 실험 등 경험조사의 구체적인 기법들을 다룬다.

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logical assumptions as a starting point for scientific politics and its applications. Students will learn the construction and development of scientific questions on political phenomena, logical reasoning and empirical testing, focusing on such practical techniques as statistics and surveys.

216A.604A 중세세양정치사상 3-3-0

Medieval Western Political Thoughts

아리스토텔레스 이후부터 마키아벨리 이전까지의 서구 중세 정치사를 그 시대적 배경과 그로부터 기인하는 역사적·정체학적 질문과 관련 속에서 탐구한다.

The subject of this course is to investigate western political thought from Aristotle to Machiavelli. This course will study western political thought in its historical context as well as raise political questions about it.

216A.606A 동아시아정치사상연구 3-3-0

Studies in East Asian Political Thought

동아시아 정치사상에 대한 세미나이다. 한국으로는 동아시아 정치사상의 고전을 탐구하고, 구세계에는 동아시아 정치사상의 현대적 이해를 위한 이론적 품을 수단함을 통해, 궁극적으로 동아시아 정치사상 연구역량을 강화하는 데 봉 수업의 목표가 있다.

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216A.609A 研究社會和新政治

Studies in Civil Society and New Politics

이 세미나는 현대 정치학에 있어 ‘市民社會와新政治’ 관련 논의를 중심으로 주요 이론적, 정책적 연구들을 비판적으로 분석함으로서 원생들로 하여금 향후 독자적인 연구를 수행할 수 있는 기초를 제공하는 것을 목적으로 한다. 강의 내용은 시민사회의 개념, 집단행동, 사회의 자본, 집단사 민주주의, 직접민주주의 등의 등을 포함한다.

The purpose of this seminar is to introduce students to the conceptual issues, theories, and debates concerning ‘civil society and new politics.’ The topics that will be covered include concept of civil society, social capital, engaging community, associative democracy, direct democracy, global civil society in action, civil society and global governance, etc.

216A.610 한국정치사상연구

History in Korean Political Thought

한국 정치사상에 대한 세미나이다. 한국의 정치사상의 고전을 탐구하고, 다른 한편으로는 한국 정치사상의 현대적 이해를 위한 이론적 토론을 수행함으로써, 궁극적으로 한국 정치사상 연구역량을 강화하는 데 본 수업의 목적이 있다.

This course traces the history of Korean political thought. The issues to be examined include contemporary relevance of classical texts, and historiography of Korean political thought. Special attention will be paid to important thinkers and intellectual debates that have had profound consequences for the modernization of Korea.

216A.612 정치와 외교

Politics and Diplomacy

이 세미나는 외교정책 결정과정에 대한 이해에 목적이 있다. 특정 외교정책의 국내외적 전제를 이해하는 데 초점을 두기며, 단위수준의 분석과 체계수준의 분석 간의 관계설정을 보도하며, 다양한 외교정책 결정모형이 도출되며, 세미나 참가자들의 관심 지역과 사례에 따른 사례연구들이 활용된다.

This seminar analyzes the process of creating foreign policies, focusing on the influence of domestic politics on foreign policy. Furthermore, we will contemplate the relationship between unit level analysis and system level theories in the field of international relations. Students will be encouraged to investigate their individual areas of interest, whether they be particular countries, incidents, or political issues.

216A.618 공공정책분석

Public Policy Analysis

이 세미나는 재정경제학에서 발달한 사회적 투쟁학습과 공공재 등의 개념을 통해 공공정책의 구성원리와 그로부터 파생되는 이론적·정책적 전문들을 다룬다. 특히, 공공재의 개념과 관련하여 ‘무임승차자’의 문제와 ‘지역추구행위’의 사회적 비용문제에 대한 이해를 증진시킨으로써 공공정책의 구성과 작동원리를 이해하고, 공공정책의 다양한 형태들에 그가 산출한 사회적, 정책적 효과들에 대해 탐구한다.

This course covers the structural principles of public policy and the relevant theoretical as well as empirical questions through the investigation of social welfare, a development that arose from the combination of finance and concept of public well-being. A special focus is placed on dispelling misconceptions of the “free ride” and showing how the advantageous use of benefits can come at a great social cost.

216A.619A 군대-탈군대국제관계

Modern & Postmodern International Relations

이 세미나는 대학원 수준에서 국제관계 이론을 개괄하는 과목이다. 따라서 다음 세 부분으로 구성된다. 첫째, 국제관계이론의 기본적 이해와 기존 주요 저작물을 토대로, 둘째, 안보와 국제정치학 분야의 주요 문제들을 장려한다. 셋째, 탈냉전 국제관계의 체축변과 폐권 및 폐권적 장시의 이슈들에 대해 다룬다.

This seminar provides a comprehensive examination of various theories on international relations for graduate students. It is composed of three parts. First, students will discuss the major schools of thought including idealism, realism, liberalism and postmodernism. Then the major topics and issues from the fields of security and international political economics will be analyzed. Finally, the students will discuss various aspects and issues from post-Cold War international relations and the US hegemony as well as the hegemonic international order.

216A.621 한국정치학특강

Topics in Contemporary Political Science

본 강의는 정치학의 새로운 이론들을 소개하거나 다른 과목들에 충분히 포함하지 못하는 특정 이슈들을 다루는 심화강좌이다. 담당교수들이 매 학기마다 새로운 강의주제를 사전에 공고한다.

An advanced introductory course for new theories in political science, this course addresses specific issues that are not adequately covered in other courses. The examined topics will vary according to the instructor.

216A.622 현대정치학연습

Seminar in Contemporary Political Science

본 강의는 정치학의 새로운 이론들을 소개하거나 다른 과목들이 충분히 포함하지 못하는 특정 이슈들을 다루는 심화강좌이다. 담당교수들은 매 학기마다 새로운 강의주제를 사전에 공고한다.

An advanced course which introduces students to new contemporary political theories or discusses particular topics and issues not sufficiently covered in other courses. The course ultimately aims at helping students refine their viewpoints on Korean politics and deepen their understanding about it.

216A.623 한국정치학특강

Topics in Korean Politics

이 세미나는 대학원 학생들을 대상으로 한 실화 강좌로서 한국 정치 분야의 최근 이슈들을 주로 다룬다.

This is an advanced course for graduate students, dealing mainly with current issues in the field of Korean politics.
216A.625 Studies in American Politics

This course seeks to improve students’ understanding of American politics. It also attempts to find the underlying cause of the Japanese economic crisis as well as the analyses of political participation such as election and major public policy issues.

216A.628 Studies in Chinese Politics

This graduate seminar focuses on contemporary Chinese politics. Students will be required to read relevant materials and discuss them in class. A range of topics concerning Chinese politics are addressed: historical backgrounds, the origin and development of Chinese revolution, ideology and political culture, political power structure, reform issues, problems of ethnic minorities, democratization and challenges for domestic politics, foreign policy issues, and so on.

216A.626 Studies in West European Politics

This course examines classic literary range from Tocqueville to Lowi for the purpose of understanding the major principles of American democracy. They will then evaluate such contemporary political theories as rational choice theory, focusing on cases from the American political process. Lastly, for those interested in international relations and U.S. foreign policies, the course will focus on the domestic political basis of U.S. foreign policy. For those who plan to specialize in American domestic politics, the course will survey recent political changes in America, focusing on political parties, elections, and major public policy issues.

216A.630 Seminar in Public Choice Theories

This course investigates the micro-level basis of macro-level social phenomena, using methodological individualism and systematic deduction. The class will consider the basic principles and decision making process of democracy, social utility functions and their relation to public welfare, as well as the analyses of political participation such as election and voting.

216A.627 Studies in Japanese Politics

This seminar is a 19th-century history of Japan, with a focus on the Meiji Restoration and the political and economic changes that followed. It examines the characteristics of Japanese politics which enabled both pre-war and post-war Japan to achieve the world’s fastest economic growth. It also attempts to find the underlying cause of the Japanese economic crisis within contemporary Japanese politics.

216A.631 Ancient Western Political Thoughts

This course studies the ancient political and ethical thought of the Greeks, focusing on the works of Plato and Aristotle. It examines the theories of politics and ethics that shaped the ancient world and their relevance to contemporary political issues.

216A.630 研究中国政治 3-3-0

이 과목은 현대중국정치의 주요 주제와 생활에 대한 세미나이 다. 최근 연구 문헌을 증점적으로 독해하고, 그에 대한 깊이 있는 토로로 수업을 진행한다. 본 세미나에서 다루고자 하는 주요 토론은 중국의 근대 정치사, 중국 혁명의 기원과 과정, 유산, 이데올로기와 문화, 정치 권력구조의 주변으로부터 시작하여, 도시학과 개인의 경험과 탄생의 소수 민족 문제와 민주화 문제 등을 위한 주요 국제적 이슈들 중에서 이론적 근거와 실제 문제들에 대한 이해를 확장하고 정리한다.

This graduate seminar is designed to provide students with a comprehensive understanding of Chinese politics. It will cover a range of topics, including historical backgrounds, the origin and development of Chinese revolution, ideology and political culture, political power structure, reform issues, problems of ethnic minorities, democratization and challenges for domestic politics, foreign policy issues, and so on.

216A.628 研究日本政治 3-3-0

이 세미나는 일본의 근대정치와 경제성장에 대한 연구들을 통한 일본이 19세기의 아시아 제국 중에서 가장 먼저 근대화를 달성할 수 있었던 요인을 탐구한다. 특히, 개인주의와 사회의 본질적طعم과 개별의 적법성의 논리적 구조를 통해 이해할 수 있다. 특히, 일본의 국가정체성과 전반적 정책들을 중심으로 연구한다.

This seminar examines the characteristics of Japanese politics which enabled both pre-war and post-war Japan to achieve the world’s fastest economic growth. It also attempts to find the underlying cause of the Japanese economic crisis within contemporary Japanese politics. The specific topics covered in this seminar will vary according to its instructor. In general, however, students will reach an understanding of the major theoretical disputes in modern Japanese politics.
216A.633  
Seminar in Area Studies: Government and Politics

This course provides a comparative survey of international political systems in an effort to compensate for the preponderance of European and American perspectives. It examines the political power structures and related issues in Central and South America as well as Southeast Asia and Eastern Europe, areas which haven't received much attention due to biased political scholarship. It will further reconsider their particularity in context of general political theory.

216A.634  
Studies in State Theories

1970s saw a flourishing of interest in state theories in political science scholarship. This course examines various theoretical positions regarding the structure and function of the modern capitalist nations. It clarifies general classifications of pluralistic, administrative, and Marxist theories of state, investigating the theoretical principles of each theory. Additionally, it introduces various dialogues of Marxists in Western Europe, and explores the theoretical points of dispute and implication.

216A.636  
Studies in Russian Politics

This course surveys various aspects of the post-communist transformation in Russia and Eastern European countries. Key themes will be democratization and democratic consolidation, state building, the politics of economic reform, and the construction of market economies, nationalism and local government.

216A.637  
Studies in Gender and Politics

The aim of this seminar is to present students with various feminist theories on gender and politics, and expose them to the central debates in this field. And the seminar will include the empirical and historical process of development in women's rights and power by comparing countries and draw some theoretical and empirical implications.

216A.638  
Modern Western Political Thought

The 20th century provides a fertile ground for the study of political philosophy. Rationality vs. madness, enlightenment vs. mythologic, civilization vs. barbarism, and modernity vs. postmodernity are among the themes that will be reflected upon. Philosophical reflection on contradictory issues and experiences should deepen our understanding of the current political situation. This seminar aims to illuminate underlying dilemmas of contemporary political thinkers, and stimulate practical interest in the direction of the future.

216A.702A  
Comparative Democratic Studies in Modern & Postmodern Context

This graduate seminar covers the modern part of western political thought ranging from the late Medieval period, through Renaissance, Reformation, and Civic Revolutions, to the 19th century when modern states had taken their institutional shape. With special attention to the formation and development of liberal democracy, it is intended to help graduate students deepen their understanding of main themes in modern political thought--individuality, the art of separation, secular values, pluralism, social contracts, liberal republicanism, institutional balance between liberty and equality, modern forms of democracy, etc.
This course reviews the nature, principles and institutional patterns of modern democracy. It also examines the challenges and triumphs of modern democracy in the era of globalization and the information age. In addition, the course critically reviews theories of participatory, associative and deliberative democracy that have all been suggested as alternatives to the limitations of representative democracy.

**216A,706 Modern & Postmodern Radical Theory**

This seminar examines the origin, crisis, transformation, and revision of Marxism. In the former part of the seminar, students will improve their understanding of dialectical materialism as a critical principle of Marxist philosophy and examine its divergence from the Hegelian dialectic. Through this understanding, students consider the history and social structure of Marxist political philosophy and its implications for Nation-states and civil society. In the latter part of the seminar, students will understand how such theoretical endeavors to transform or revise Marxist theory are accomplished in response to this crisis and also evaluate the contemporary issues of Marxism.

**216A,707 Global Civil Society and Governance**

This course explores diverse facets of political thought methodology through the perspectives of social science, intellectual history, philosophy, and literature. We will explore the dynamic course of the methodology's evolution through the study of texts written by prominent specialists in the field. An underlying assumption of this course is that the methodology of political thought has been complex balance of disparate and conflicting elements. Studying this dynamic tradition and its fascinating trajectory of development could thus give us insights into the nature of political life and the evolution of political thought as disciplinary genre more generally. We will combine a chronological approach with a focused attention to certain major schools of political thought. These include Cambridge school and Straussian school, and comparativists. In addition to introducing the major features of each approach, we will pay special attention to developing skills in the area of review article. This course has no prerequisites.

**M1320.000400 Political Sociology II Modern Theories**

The purpose of this course is to analyze major theoretical and empirical studies on global governance and global civil society and help student to develop capacity to conduct case study research on the topic. Class will be conducted in a seminar consisting of lectures, student participation, and discussions. Each session, students are required to submit and present a short critical review of each session's readings.

**M1320.000100 Methods in Political Thought**

This course reviews the nature, principles and institutional patterns of modern democracy. It also examines the challenges and triumphs of modern democracy in the era of globalization and the information age. In addition, the course critically reviews theories of participatory, associative and deliberative democracy that have all been suggested as alternatives to the limitations of representative democracy.
streams of institutionalism. Furthermore, in the sense of substantive issues, this course studies the main issues of political sociology, such as the state, civil society and market, which have been developed recently. In particular, this course will address the effects of globalization on modern conception of national politics.

**M1320.000500**  
*Theories of Political Sociology I Classic Studies*

This course examines select debates about the meaning of democracy, both as a political ideal and as an indispensable institutional framework for contemporary politics. Themes include democracy's relation to law, liberty, representation, pluralism, participation, deliberation, agonism, and globalism. The course is intended not only for political theorists but for anyone interested in investigating the normative meaning of democracy and the scope and limitations of contemporary democratic practice.

**M1320.000900**  
*Contemporary Democratic Theory*

This seminar examines select debates about the meaning of democracy, both as a political ideal and as an indispensable institutional framework for contemporary politics. Themes include democracy's relation to law, liberty, representation, pluralism, participation, deliberation, agonism, and globalism. The course is intended not only for political theorists but for anyone interested in investigating the normative meaning of democracy and the scope and limitations of contemporary democratic practice.

**M1320.000800**  
*Topics in Political Philosophy*

Selected topics in and about the law, including the nature of law; the relation between law, politics, and morality; and problems in substantive areas of law (e.g., basic liberties, taxation, discrimination, punishment, human rights, etc.). Topics change from year to year, but we regularly return to issues in international law.

**M1320.001000**  
*Studies in Law and Politics*

This seminar examines select debates about the meaning of democracy, both as a political ideal and as an indispensable institutional framework for contemporary politics. Themes include democracy's relation to law, liberty, representation, pluralism, participation, deliberation, agonism, and globalism. The course is intended not only for political theorists but for anyone interested in investigating the normative meaning of democracy and the scope and limitations of contemporary democratic practice.
and quantitative. Students are asked to submit a research design that includes the core question, hypotheses, logic, methods of data collection and analysis.

216B.502 Research Methods in International Politics 2 3-3-0

Research Methods in International Politics 2

본 과목은 방법론적 다원주의를 지향하여 국제정치학 연구의 다양한 접근법들을 알아보는 것을 목적으로 한다. 먼저 양적연구의 철학적 기반과 발전과정을 살펴본 후 그것이 갖는 타학문과의 연계를 살펴보고 양적연구와 질적 연구 방법 사이의 통합의 타당성과 가능성을 대하여 검토한다. 그리고 질적 연구의 방법 중에서 역사적 접근과 구성주의적 접근의 내용을 과정 추적, 인지적 접근, 답변 문석 등의 방식을 통해서 고찰하고 방법론적 접촉주의의 의미와 한계에 대해서 논의할 것이다.

This seminar will look for the way toward methodological pluralism through the examination of various approaches in international political studies. The first part will look through philosophical foundation and genealogy of quantitative research, and validity and possibility of integration between quantitative and qualitative researches. Among qualitative research, and validity and possibility of integration between philosophical foundation and genealogy of quantitative research, and validity and possibility of integration between qualitative and quantitative researches. Among qualitative research, and validity and possibility of integration between philosophical foundation and genealogy of quantitative research, and validity and possibility of integration between qualitative and quantitative researches.

216B.503 History of International Relations 3-3-0

History of International Relations

국가중심의 외교사적 접근을 넘어서서 문명과 지역 중심의 국제관계사를 고찰할 것이다. 유럽을 중심으로 하면서도 아시아, 중동, 리시아 등 다른 문명권에 대해서도 균형 잡힌 접근을 취한다.

This course provides a careful consideration of international relations based on regions and civilizations. Centering on Europe, a balanced approach will be made on various civilizations such as Asia, the Middle East, and Russia.

216B.508A Studies in International Political Economy 3-3-0

Studies in International Political Economy

이 세미나는 세세화, 주권, 제도간의 상관관계에 초점을 맞추어 21세기 국제정치경제 분야의 핵심적인 고찰들을 전반적으로 분석, 검토한다. 국제정치경제의 중요과업과 이론을 설명한 뒤, 그러한 맥락에서 무역, 투자, 금융, 지역주의, 사회주의체제전환, 환경, 에너지 등 중요이슈 영역의 국제관계의 흐름을 검토하고 한국적 핑계를 밝히고자 한다.

This seminar course will analyze the core issues of the 21st century’s international political economy. It will focus on the relationship between globalization, sovereignties, and regimes. The main discussion includes a major focus on the ongoing theoretical and empirical perspectives of IPE and their implications for the history of international relations in the issue areas such as international trade, finance, investment, regionalism, socialist system transition, environment, energy, etc. It also aims to clarify the relationship between IPE and the Korean political economy in each issue area.
actions of the three Asian nations, Korea, Japan and China, with modern European international politics. It will deal with the formation and breakdown of modern nations and the latter attempts to revive them in search of the 21st century’s exemplary nations.

216B.603 国際政治方法論演習 3-3-0
Seminar in Research Methods in International Political Studies

This course concentrates on the logic and methods that support the scientific study of political phenomena. It covers theory development, conceptualization and measurement, hypothesis generating and testing, data analysis. Also, it helps students to develop a good research question and test their hypotheses using appropriate empirical methods. Students are expected to be able to do empirical research on their own, upon completing this course.

216B.608 国際関係研究 3-3-0
Studies in International Organizations

This seminar course reviews important functions of international organizations in an attempt to understand their roles in traditional international politics.

216B.618 한국외교정책연구 3-3-0
Studies in Korean Foreign Policy

This course investigates the origins of international political thoughts by studying those of Machiavelli, Hobbes and Kant.

216B.623A 전쟁과 평화연구 3-3-0
Studies in War and Peace

This course explores what kind and what nature of inter-
national thought East Asian thinkers and activists have been envisaging in the region. This exploration will be focused on their international thinking of international society and relations, war and peace, and man, the state and the world.

216B.654 탈근대세계정치연구 3-3-0
Studies in Postmodern World Politics

이 세미나는 세계화와 정보화의 시대를 맞아 근대 국제정치의 대두를 넘어 세기말로 구성되고 있는 탈근대 세계정치의 이론과 실정들을 탐구한다. 근대 세계정치에 대한 각 국제정치이론의 논점을 바탕으로 외교, 군사안보, 정치경제, 정보와 기술, 문화, 환경 등의 분야를 검토한다.

This course explores the nature of new world politics, which are being seemingly constructed beyond the boundaries of modern international politics in the age of globalization and the information revolution. Relying on theoretical resources provided by various traditions in international relations, this course examines the postmodern issues of world politics in such areas as diplomacy, military security, political economy, information and technology, culture, and environmental issues.

216B.709B 정보세계정치연구 3-3-0
Studies in the Global Politics of Information

본 세미나는 21세기 세계정치에서 주요한 변수로 떠오르고 있는 기술, 정보, 지식을 살펴보고자 한다. 과학기술 및 안보, 정치경제, 문화, 지식 권력 등의 상호 역동성을 국제정치학적 시각에서 분석한다.

This course emphasizes the importance of technology, information, and knowledge. It examines how technology, information, and knowledge influence security, politics, the economy, culture, and the power of knowledge in global politics.

216B.714 미국지역연구 3-3-0
America in World Politics

이 강좌는 미국의 정치제도와 정치과정에서 정부의 기능과 제도적 대처능력이 어떻게 변화했는지 검토한다. 또한 가능한 한 각 주제별로 외교정책과 연관된 문헌을 다룬다. 전반부에서는 헌법, 안보체제 및 정부 부처, 후반부에서는 이론, 선거, 정당, 이익집단, 미디어를 다룬다. 마지막 수업에서 외교정책에 영향을 미치는 국내외인들을 분석한다.

This course surveys major issues of political institutions and processes in the United States. We will explore how the government functions and how modern politics have altered the extant institutions. We will, first, examine constitution, federalism, and three branches of government, followed by public opinion, election and voting, political parties, interest group, and media. We will discuss domestic sources of foreign policy in the last class.

216B.715 중국지역연구 3-3-0
China in World Politics


This course spotlights international relations and domestic politics of modern Japan. It covers political structure, political economy, and foreign policy of modern Japan, but the detailed subject is varied in every semester.

216B.716 일본지역연구 3-3-0
Japan in World Politics

본 세미나는 현대 일본의 국제관계와 국내정치에 대한 심화된 이해를 추구한다. 학기별로 세미나 주제는 달리되며, 일본의 정치구조, 정치경제, 외교안보 등의 성과와 변동에 대한 주제가 반복되며 진행된다.

This course spotlights international relations and domestic politics of modern Japan. It covers political structure, political economy, and foreign policy of modern Japan, but the detailed subject is varied in every semester.

216B.719B 지역학과 국제정치이론 3-3-0
Area Studies and Theory of International Politics

본 세미나에서는 일본, 우리나라, 소련과 같은 후발 산업국가들이 산업화를 통해 겪는 사회적 변동들을 정치경제적 및 정치사회학적 시각에서 고찰한다.

This course is designed to examine changes which strong states undergo in the process of industrialization in the late industrializing countries such as Japan, South Korea and the Soviet Union. Basic assumptions and conceptualizations of the approaches to state taken by political economists and political sociologists will be critically reviewed, and new approaches to the state will be placed.

216B.720 안보정책연구 3-3-0
Studies in National Security Policy

본 세미나에서는 군사, 경제와 같은 전통적인 안보분야 외에 자원, 환경, 문화 등의 새로운 안보를 위한 국가의 정책결정과정 및 국가 간 정책의 쟁점들을 분석한다.

This seminar analyzes the national security policy concerning resources, the environment, and energy in terms of international relations. It will also examine the traditional security policies and issues of military affairs and economy.

216B.731 중국외교정책연구 3-3-0
Studies in Chinese Foreign Policy

본 세미나는 1975년부터 1978년까지 중국의 대외 политик 전반을 다룬다. 이 과정은 보다 구체적으로 다음의 내용을 중심으로 진행된다. 우선 중국의 전통적인 외교관계가 갖는 논리와 내용은 무엇인지에 대해 고찰하며, 전후, 민주주의의 개념을 통해 살펴본다. 그 다음 중국의 무력사용 및 분쟁 개입의 심화를 통해 살펴보고, 핵심적인 양자관계, 중-일, 중-소, 중-동, 중-남아시아, 양안관계 및 한-중관계에 대해 살펴본다. 마지막으로 중국의 미래와 연관된 논의로

216B.715가 중국의 국제적 통학에 그 주안점을 둔 세미나면 본 과목은 중국의 대외관계에 그 초점을 두고 있다. 이 과목은 보다 구체적으로 다음의 내용을 중심으로 진행된다. 우선 중국의 전통적인 외교관계가 갖는 논리와 내용은 무엇인지에 대해 되돌아보고, 중심적인 양자관계 - 미, 중, 중-소, 중-일, 중-남아시아, 양안관계 및 할-중관계에 대해 살펴본다. 마지막으로 중국의 미래와 연관된 논의로
If the course 216B.715 is the seminar on China’s domestic dynamics, this one concentrates on China’s external relations. This seminar first deals with the logic of China’s military intervention and disputes with other states, followed by discussions of China’s bilateral relations with key regions and states, including the United States, Russia, Japan, Asia, Taiwan and Korea. The seminar is concluded with discussions of China’s future and its implications for the world and Asia. Students are required to submit a research paper (15pp).

216B.733 러시아⋅유라시아지역연구 3-3-0
Russia and Eurasia in World Politics
본 세미나는 러시아의 국내정치와 국제적 관계에 대하여 다룬다. 특히 1920년대 스탈린시대와 1990년대 이후의 탈냉전 시대에 서의 러시아의 국가와 산업화에 대하여 중점을 두어 연구한다.

This course examines the domestic and international politics of Russia. It focuses on major political, economic, and international issues from the 1920s to the present.

216B.734 환경⋅에너지의 국제정치 3-3-0
Energy and Environment in World Politics
환경보호를 둘러싼 범어지는 국가 간 이해관계의 다툼, 자원과 에너지원 확보를 위한 국가 간 갑질을 통해 오늘날 국제정치 현실에서 환경과 에너지가 갖는 의미를 고찰한다.

This seminar course focuses on analyzing energy and environmental issues as well as their implications for current international politics.

216B.736 금융과 발전의 국제정치경제 3-3-0
International Political Economy of Finance and Development
본 수업은 국제정치경제에서 금융, 통화제도, 그리고 경제발전에 대한 논의의 초점을 맞추어 이론, 역사, 경험적 분석을 진행한다. 구체적으로 통화제도의 역사와 국가간 협력의 경계, 금융산업 발전의 국내외적 원인, 경제발전에서 국가와 금융제도의 역할 등의 주제를 검토할 것이다.

This course surveys literature on the history of the international monetary system, the development of financial industry, and the role of finance and monetary policy in economic development from the perspective of political economy.
Studies In Microeconomics

This course provides economic theories and tools to analyze economic phenomena. Standard materials on four core topics: consumer theory, production theory, market theory, general equilibrium, and welfare economics—will be covered. Students must have previous exposure to the basics and applications of mathematical concepts, such as linear algebra, differentiation and integrals of multi-variable functions, as well as know basics of analysis.

Studies In Macroeconomics

Solving the stabilization problem, supply and demand theory, money and prices, and fiscal and monetary policies are studied in this course. Students are required to have previous exposure to the basics of supply and demand, money and prices, and fiscal and monetary policies. The main objectives of this course will be to study the Solow growth model, the new growth model, real business cycle theory, and dynamic macroeconomics. This course provides a foundation in advanced studies for economics, public good theory, externalities, public choice, and tax policy. Some examples which economists adopt in their graduate courses and econometrics are covered. Specifically, it covers basic concepts in statistics, sampling, and regression.

Studies In Statistics for Economists

This course provides a foundation in advanced studies for econometrics by introducing statistical concepts and techniques which economists adopt in their graduate courses and beyond. Specifically, it covers basic concepts in statistics, distribution, expectation, estimation and hypothesis testing, sampling, and regression.

Studies In the Theory of Money and Finance

This course provides a foundation in advanced studies for econometrics by introducing statistical concepts and techniques which economists adopt in their graduate courses and beyond. Specifically, it covers basic concepts in statistics, distribution, expectation, estimation and hypothesis testing, sampling, and regression.

Studies In Labour Economics

This course provides students with the theoretical basis for professional research of labor economics. Students are encouraged to take undergraduate labor economics, statistics, and econometrics before taking this course. Theories and empirical analysis will be taught using the latest textbooks and papers. Actual cases and problems of labor economics will be studied using the latest textbooks and papers. Actual cases and problems of labor economics will be studied using the latest textbooks and papers.
이 과목에서는 무역과 경제발전, 자유무역과 전략적 무역정책, 규모의 경제와 독점성 경쟁, 관세보호의 장단기효과, 다국간 교역, 다국적기업의 성장 및 발전을 중점으로 다룬다. 관세, 양허제, 보호주의, 자유무역과 이자율 문화, 시간선호, 여지를 사용하여 연구를 진행한다. 특히 이 과목은 산업조직론과 경제성장론에서 간직하고 있는 요소를 다루는 과목으로 한다.

This course discusses trade and economic development, free trade, and strategic trade policy, economics of scale and monopolistic competition, the long and short-term effects of trade, and economic growth. It also discusses the core of industrial organization and economic growth. This course is taught using microeconomic theory, macroeconomic variables, and economic growth.

이 과목에서는 채택된 유형과 관련된 이론을 중심으로 다룬다. 한화원과 관련된 분야, 한화원 결렬, 한화원과 관련된 예상, 한화원의 동태적 변동, 외환시장개입, 목표환율대환 환율 등을 다룬다. 무역네트워크에서의 국제금융이론을 다룬다. 포트폴리오의 국제적 달리채와 관세기금살달리채를 다룬다. 특히 선물, 선도, 손상, 원금 등 관세금살달리채의 가격 결정, 관세금살달리채의 출혈이 경제전반에 미치는 관세효과와 관세문제 등을 다룬다. 세 번째로는 Micro로적인 국제금융이론을 다룬다. 자본자유화가 기시장에 미치는 효과, 개방경제에서의 중간목표, 중점정차지표, 중점교환지표, 중점통화차지표, 중점통화차지표, 중점통화차지표 등에 초점을 맞추어 다룬다. 마지막으로 국제금융제도를 다룬다. 국제금융제도의 변화, 국제통화제도의 변환, 유럽통화제도의 형성 및 변천, 관련 이론을 다룬다.

Students in this course are introduced to the issues concerning exchange rate; risk, speculation, expectation, fluctuation, intervention, and target zone system. Surveyed are micro international monetary issues and diversification of portfolio and derivatives. Macroeconomic effect of capital liberalization, selection of intermediate target in the open economy, monetary stocks and inflation pressure are also surveyed and changes in the international monetary environment and system as well as the establishment and development of the European Monetary System are addressed.

이 과목에서는 경제성장에 관한 다양한 이론과 연구들을 학과별 혹은 학자별로 소개하고 이 분야의 최신 동향을 다루며, 경제성장의 장단기효과를 제공하고, 경제성장론이나 기시장경제학의 이론을 <경제성장론연구>에 응용할 수 있는 능력을 향상시키는 것을 이 과목의 목표로 한다.

In this graduate course we deal with problems of dynamic capital accumulation in neo-classical and endogenous growth models. We also discuss what kind of growth model is more appropriate in accounting for the growth of the NIEs in the past several decades.
경제학의 제조품류를 이해하기 위해서 동양적인 경제학적 방법론, 분석기법과 함께, 과학철학, 인지과학, 신과학 등에서 개발된 개념 및 기초적 이론들을 비교・평가한다.

이 과목은 개발성장도 산업과 경제발전에서 기업의 역할에 대한 분석을 주된 강의내용으로 한다. 다루어지는 주제들은, 경제발전에서의 국가의 역할, 동아시아 경제성장론, 산업공업국의 기업 구조, 외자와 경제성장, 금융체제와 경제발전, 외자와 기술이전, 제조성장론, 국가 및 기업경쟁력 분석, 기술혁신 등이다.

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especially in developing countries where market prices are unavailable, but pricing policy plays the same central role in fiscal policy that income tax and social security plays in developed countries. The course work will include a series of homework exercises, some of which will be computer exercises involving analysis of economic data. STATA will be used for those empirical exercises. Students enrolled for credit are expected to complete an outline of research project in applied microeconomics as a group project.

*212.685 Advanced Microeconomics

This course provides a historical overview of industry/ firms, money/banking, and labor/welfare in major developed countries from the modern era, and discusses related current issues. The major focuses of the course are (1) to analyze how industrial structure and corporate organization are transformed, (2) to study how financial institutions and monetary systems have evolved over a long period of time; and (3) to review the long-term changes in the internal and international labor markets, welfare system, and standard of living of workers. This course is useful for graduate students majoring in economic history, industrial organization, money and banking, labor economics or social welfare.

*212.686 Advanced Economic Theory

This course is a critical review of the recent development of some selected research topics from the fields of Economic Theory such as General Equilibrium Theory, Game Theory, Mechanism Design, Decision Theory, Social Choice Theory, Information Economics, Behavioral Economics, etc. It is expected that students will learn how the classical theories they were taught in Studies in Microeconomics(212.501) and Advanced Microeconomics(212.701) have been evolved recently and in what direction current research works are being progressed.

212.701 Advanced Microeconomics

This second semester course has the pre-requisite of Studies in Microeconomics from the first semester. We will cover three themes: uncooperative game theory, mechanism design, and dynamic programming. The equilibrium concept and its application to uncooperative game theory is dealt with in the first half of the course. In the second half, models of mechanism design and dynamic programs are developed to research incentive schemes. Also in the latter part of the semester, in Dynamic Programming, we will study Search theory and the methodology used in the analysis of Repeated Games.
212.703 Studies in Econometrics

Studies in Econometrics

In this econometrics course, we study classical linear regression methods, structural regression models, simple regression, multiple regression, simultaneous equations estimation, serial correlation, multi-collinearity, heteroskedasticity, and model identification problems.

212.704 Topics in Microeconomics

Topics in Microeconomics

In this course, welfare economics, public choice theory, social justice, as well as socialism and market economies will be examined using recent papers. For example, in 1997 the class analyzed Hayek's theory of liberalism and social justice. For our study, we will deal with political thoughts, social philosophy, and ethics through tools of neo-classical economic theories like public choice theory and game theory.

212.705 Topics in Macroeconomics

Topics in Macroeconomics

In this course we investigate current growth models, including recursive methods in economic dynamics.

212.707 Topics in Econometrics

Topics in Econometrics

This course is for graduate students who field of study is econometrics. It provides an overview of important topics in econometrics.
212.747
국제경제사연구 3-3-0

Studies in History of International Economy

이 과목은 기존 서양경제사 분야 과목에서 다루지지 못했던 국제관계 및 국제경제의 세부적인 주제들을 심층적으로 접근한다. 이 과목에서는 주제부터 21세기까지 국제경제의 변모를 개괄한다. 주로 19세기 이후 국가 간, 지역 간에 이루어진 무역, 이민 및 자본이동 등을 추적하며, 국제통화제도, 국제금융센터, 다국적기업, 국제경제기구 및 지역경제동향 등의 주제들을 다룬다. 또한 1, 2차 세계대전, 세계적공황 등과 같이 세계 경제 전반에 영향을 미친 사건들을 조명하도록 하였다.

This course surveys the history of international economy since the medieval era (especially after the 19th century) by tracing commodity trades, immigration, and capital movement among countries and regions. Such subjects as the international monetary system, financial order, multinational enterprise, international economic organizations, and economic integration are covered. The course also examines global events like World Wars and the Great Depression which influenced the world economy.

212.748
인구와 경제연구 3-3-0

Studies in History of International Economy

이 과목은 다양한 인구현상을 경제학적으로 분석하여 제공하고, 인구와 경제 간의 상호작용적 영향을 연구하는 것을 목적으로 한다. 이 강좌에서는 인구학의 기초적인 기법, 인구경제학과 관련된 대표적인 이론, 경제기인에 걸친 인구변화의 편차와 그 요인의 설명, 인구경제학의 요인들이 다루어질 예정이다. 이 과목에서는 출산, 사망, 국외이주, 국내이주, 건강, 가족, 인구동태학과 같은 다양한 주제들을 포함한 내용들을 다루고 예정이다.

The purpose of this course is to provide economic analysis of demography. The lectures will deal with demographic techniques, theories in population economics, patterns of and explanations for the long-term changes in population, and contemporary issues in population economics. This course will cover various themes such as fertility, mortality, international and internal migration, health, family, and an aging population.

212.754
금융경제학연구 3-3-0

Studies in Financial Economics

이산적 시간 접근법을 통해 경제학 및 동태적 재무모형을 공부한다. 교환 및 생산 선택기회가 주어져 있을 때의 Arrow-Debreu 장의 균형이란 임의의 합당한 것으로서 Radon-Nikodym derivative의 관계, 나아가 동태적 모형 하에서의 확장에 대한 공부를 한다. 수학적으로는 벡터공간, 가라르 공간, 노름공간, Banach 공간 및 Hilbert 공간의 관계 및 separating hyperplane theorem, fixed point theorem과 Bellman equation을 통한 동태적 최적화 문제를 공부한다.

This course provides students, who are in the early stages of the master study, with discrete time approach in finance by studying static or dynamic financial models. In the choice of trade and production, it deals from the relation of Arrow-Debreu Equilibrium with Pareto Optimality and the role of stock market to condition of existence of stochastic discount factor and its deriving, between it and Radon-Nikodym derivative. It will covers vector spaces, norm spaces, Banach spaces, and Hilbert spaces, and their relations, as well as dynamic optimization through separating hyperplane theorem, fixed point theorem, Bellman equation.

212.755
금융경제학특수연구 3-3-0

Topics in Financial Economics

동태적 시간 접근법을 통해 재무 경제학 교육의 가격 결정법을 공부한다. 중간가격의 횡도과정 도출, Girsanov정리, 펀다미널 복잡성의 도출 및 최적해 해의 도출을 공부하고 HJB 방정식을 통한 동태적 최적화 문제, 또는 martingale 접근법을 통한 동태적 최적화 문제를 공부하도록 한다. 이러한 수학 개념의 응용으로 이자율의 기간구조, 신용위험 분석, 파생증권의 가격결정 및 equity premium puzzle 등의 구체에 대해 공부한다.

This course provides original asset pricing of Financial economics through continuous time approach. We study the derivation of stochastic processes of stock prices, Girsanov theorem, partial derivative equation and numerically analytical solution. Additionally, this course covers dynamic optimization through HJB equation and martingale approach. With these mathematical materials, term structure of interest rates, analysis of credit risk, pricing of derivatives and equity premium puzzle will be studied.

212.756
금융금융경제학연구 3-3-0

Studies in Applied Financial Economics

금융학부 대학원 석사 및 박사과정을 대상으로 미시경제학에서 획득한 내용을 금융부문으로 확장, 특화하고자 한다. 이에 따라 크게 기업의 조직과 캐산 등의 비대칭성, 의사소통 및 통신의 효과적 배분 및 의사소통 체계의 확립, 다국적기업에 대한 영향을 분석하고 마지막으로 기업의 가치에 미치는 영향을 연구한다.

This course extends and specializes the material provided in graduate microeconomic courses to financial sphere. We study information asymmetry, agency problem and their effect to firm value. In the concrete, we study effective organization of firm for effective allocation of information and construction of communication system, and the effect to the agency problem and firm value.

212.758
수리금융경제학연구 3-3-0

Studies in Mathematical Financial Economics

이 과목에서는 이산형 및 연속형 재무모형들에 대한 수학적, 동태학적, 그리고 경제학적 배경을 다룬다. 이 과목에서 다루는 주제들은 웅등한, CAPM과 APT의 수리적 배경, 무재정조건, 중간시장의 균형, 유한기간모형, Bellman방정식, Lebesgue적분, 확률론, 확률과정론, 측정론, 확률적분론, 확률적분방정식 등이다.

The purpose of this course is to study the mathematical, statistical, and economic backgrounds of discrete and continuous financial models. The topics include optimization theory, CAPM and APT, no arbitrage theorem, stock market equilibrium, multi-period model, Bellman equation, Lebesgue integral, probability theory, stochastic processes, martingales, stochastic calculus, and stochastic differential equation.
이 과목에서는 계산적 접근법을 사용해서 경제모형문제를 푸는 방법을 학습자들에게 소개하는 과목이다. 이 과목에서는 현재 경제학 분야의 주요한 연구분야를 설명하고, 또한 미래의 경제학 연구를 위해 필요한 수치해석기법과 현대화된 기법들을 다룬다. 특히, 베이지스통계기법과 MCMC법을 사용한 경제분석에 대해서 상세히 다룬다. 이러한 계산경제학기법들을 배우면, 시장경제학, 개인이론, 산업조직론, 그리고 재정경제학에 응용하는 방법을 다룬다. 교재는 다음 문헌을 사용할 예정이다.


The objective of this course is to introduce the student to computational approaches to solving economic model problems. We will study examples of computational techniques in the current economic literature, and discuss areas of economic analysis where numerical analysis and simulation may be useful in future research. Particularly we emphasize applications of Bayesian statistical techniques and MCMC to economic analysis. Application will cover a wide range of economic problems including finance, macroeconomics, game theory, industrial organization, and econometrics. The references will be followings; K. L. Judd (1998) Numerical Methods in Economics; M. J. Miranda & P. L. Fackler (2002) Applied Computational Economics and Finance.

212.761 계산경제학연구 3-3-0

Studies in Computational Economics

이 과목은 실증분석에 널리 활용되는 경제학 주제를 선별하여 그에 적합한 경제 기법을 논의한다. 이 과목에서는 이론의 수립과 검증 가능한 가설의 유무, 그리고 그 가설을 검증하기 위한 계산 경제학 기법을 다루며 실제 자료를 사용한 실증분석도 시도한다. 이 과목에서는 주로, 공적분, VAR, VECM, 구조공적분 시계열 가설검증기법을 다룬다. 또한 페널 공적분, GMM 등의 페널 분석도 시도한다. 이 과목의 초점은 경제이론이나 계량경제이론에 이해하도시각과 시계열과 페널 데이터를 활용하여 이론들을 실제로 검증하는 데 있다. 이 과목을 성공적으로 수강한 학생들은 실제 데이터를 활용하여 이론과 부합될 뿐만 아니라 계량기법으로 도 신뢰성이 높은 실증분석을 시도할 수 있을 것으로 기대된다.

This course examines empirical techniques to particular problems of interest in economics. Using topics widely discussed in empirical research, the course illustrates how empirical research can be conducted, form the formulation of theories and the derivation of testable hypotheses, applying econometrics for estimation, and testing of the economic theories, th the interpretation and evaluation of the results. Econometric techniques this course discusses include co-integration, VAR, ECM, GMM, and panel cointegration. The main emphasis of this course is on practical ways to deal with time-series and panel data, not on the understanding of economic or econometric theories per se. Having this course studied successfully, students will have understood how to conduct sound and solid empirical research.

212.762 이행기경제와 경제체제론연구 3-3-0

Studies in Transition Economies and Economic Systems

구소련, 동유럽 사회주의 경제의 동과 자본주의의 이행을 경제학적으로 분석하는 경제학개론의 한 분야다. 먼저 사회주의 경제의 소개와 평가 이후 사회주의 경제자본주의의 이행과정에서 일어나고 있는 중요한 문제들을 이론적, 실증적으로 논의한다. 주요한 강의주제로는 사회주의의 경제의 평가: 효율성과 안정성, 이행기기법: 빅뱅과 점진주의, 가격결정의 방법과 속도, 제제이론의 최적속도, 만전예산목표, 리서치의 거시경제학에 관한 논의가 있다. 강의를 진행하면서 필요한 경우 구소련, 동유럽경제와 중국, 그리고 북한경제에 관한 비교분석도 있을 것이다. 이 과목을 성공적으로 수강한 학생들은 경제체계론의 성과를 정립짓는 중요성을 인들을 이해할 동시에 이행경제에 대한 지식을 심화시킬 수 있을 것이다. 또한 기존 경제학의 분석들을 실제 경제에 응용시키는 능력을 탭취함과 아울러 경제체계론에서 개발된 경제학 개념이 역으로 기존 경제학에서 다루는 영역을 확장시킨 사례로 배울 수 있을 것이다. 또한 구소련과 동유럽에 대한 이해는 북한 경제에 대한 참조점도 제시해줄 것으로 기대된다.

The purpose of this course is to provide an account of the experience of socialist economies and their transition toward market economies. The aims of the course are: (a) to explain students how former socialist economies had been operated and how the performance of these economies can be evaluated: (b) to present students with economic issues which transitional economies have encountered in the process of transformation toward market economies. The main topics of these courses include the assessment of the performance of centrally planned economies in terms of growth and efficiency, causes of inefficiency and unsustainability in socialist growth, transition strategy: big-bang us gradualism, method of price liberalization, optimal speed of transition, soft-budget constraints, and the Russian economy. There will be also some comparative analyses of the economies of former Soviet Union, China and North Korea.

212.764 실험적산업조직론특수연구 3-3-0

Seminar in Firms and Industry Studies

이 과목에서는 실험적 산업조직론을 연구하기 위한 기초적인 이론과 실험적 방법론을 배운다. 즉 실험적 산업조직론에 대한 논문을 쓰기 위해서 필요한 이론적 바탕과 계량경제학적인 방법, 그리고 여러 가지의 계산 방법론에 대해서 연구하고자 한다. 이러한 배경에 대한 공부는 product differentiations and discrete choice models, single-firm dynamic problems, dynamic equilibrium models with heterogeneous firms, industry evolution, and
measurements of innovation and productivity and various other issues of industrial organization are discussed.

In this course, we discuss several theoretical backgrounds from microeconomics and require econometric tools for empirical research. Also, we are interested in various computational tools for current empirical industrial organization. These tools can be used for several empirical industrial organization topics, such as product differentiations and discrete choice models, single-firm dynamic problems, dynamic equilibrium models with heterogeneous firms, industry evolution, and measurements of innovation and productivity.

212.766 Advanced Topics in Econometrics: Time Series Analysis

The course covers several theoretical background of the subject and the second half of the semester for studying applications.

212.803 Reading and Research

This course covers several applications of economic theory to current empirical research. Students working towards their thesis may register for this course, up to 12 course-units in total. Students enrolled in the masters or doctorate program wishing to attend this course are advised to consult their advisor. Format lectures as well as class presentations and discussions are part of the course.

M1314.000300 Studies in Behavioral Economics

This course covers economic analyses of issues overlapping Psychology and Economics. The aims of the course are to give students an understanding of main hypotheses in behavioral economics and empirical evidence in their support. Evidence will be provided from both field and laboratory environments. The presentation of topics in the course is a combination of theory and empirical evidence.

M1314.000700 Topics in Development Economics

This course covers economic analyses of issues overlapping Psychology and Economics. The aims of the course are to give students an understanding of main hypotheses in behavioral economics and empirical evidence in their support. Evidence will be provided from both field and laboratory environments. The presentation of topics in the course is a combination of theory and empirical evidence.

The primary purpose of this course is to discuss recent research topics in development economics and their empirical approaches. The secondary purpose of this course is to discuss microeconomic methods mainly using empirical research topics in development economics. For example, in this course, we discuss consumer theories and microeconomic methods on how to calculate price and income elasticities with cross-sectional and spatial data from the household surveys of less-developed countries like Vietnam. The course will include a series of homework exercises, some of which will be computer exercises involving analysis of actual household surveys of less-developed countries like VHLS (Vietnam Household Living Standard Survey). STATA will be used for those empirical exercises. Students enrolled for credit should complete a short report on an application of research topics discussed in the course.
Topics in Experimental Economics

Given the recent growth of interests in behavioral considerations and testing economic theories, experiment methods are increasingly used in economics to study human behavior. The course intends to cover recent trends in experimental research for a selective set of economics topics. Students will learn how to design experiments and interpret their results, and will design experiments based on their own research ideas.
본 강좌는 사회조차의 양적 방면, 특히 통계적 분석법을 사용하여 다룬다. 주로 연구설계 방법과 사회조사의 경험적 자료를 활용하는 방법을 제시한다.

이 강좌는 한국의 문화사를 연구하는 대학원 학생들을 위한 고급강좌로서 수료한 학생들의 전문적인 문화를 따라서 약간의 답안을 제시한다.

이 세미나는 한국의 고전 사회사상가들의 실례적 제작을 주로 다루며, 정보사회에 관한 각종 가설들을 분석한다.

이 강좌는 도시사회학의 변화를 이해하기 위한 이론적·개념적, 방법론적 접근방식을 제시한다. 본 세미나에서는 도시 사회학의 변화와 도시발전의 사회학적 이론적 접촉를 이해하기 위한 학생들을 주로 다룬다.

In this seminar, we will try to understand the basic characteristics and changes of modern people’s individual life.
205.647A
Seminar on Population Change and Aging Society

This seminar focuses on theoretical exploration of population change and methodological training of population analysis. From the theoretical perspective, this seminar aims to discuss and share ideas on how population has changed and how population related ideas, policies, behaviors have changed in western societies and asian societies. This seminar is also planned to develop students’ methodological skills in population analysis.

205.648A
Seminar on Gender and Society

This seminar analyzes social construction of gender and the social organization of gender inequality. It provides an analysis of the formation of gender identity in the process of socialization, interpersonal behavior, the media, and the economy. In addition, we will investigate the relationship between gender and class.

205.649
Seminar on Environment and Society

This seminar examines the problems of birth, death, aging, and illness in the context of Korean society. Topics include collective attention to body, diet fad, organ donation, social definitions of illness, and so on.

205.659A
Seminar on Sociology of Body

This course deals with the problem of human body, a topic long-neglected in sociology. The attempt to analyze human problems with a focus on the relationship between the body and society, departing from the conventional paradigm of hospital-based medical sociology, is an international phenomenon. Employing this new perspective, the course will examine the problems of birth, death, aging, and illness in the context of Korean society. Topics include collective attention to body, diet fad, organ donation, social definitions of illness, and so on.

Studies in Social Organization

This course deals with the problem of human body, a topic long-neglected in sociology. The attempt to analyze human problems with a focus on the relationship between the body and society, departing from the conventional paradigm of hospital-based medical sociology, is an international phenomenon. Employing this new perspective, the course will examine the problems of birth, death, aging, and illness in the context of Korean society. Topics include collective attention to body, diet fad, organ donation, social definitions of illness, and so on.

Seminar on Social Integration and Multiculturalism

This course deals with the problem of human body, a topic long-neglected in sociology. The attempt to analyze human problems with a focus on the relationship between the body and society, departing from the conventional paradigm of hospital-based medical sociology, is an international phenomenon. Employing this new perspective, the course will examine the problems of birth, death, aging, and illness in the context of Korean society. Topics include collective attention to body, diet fad, organ donation, social definitions of illness, and so on.
205.730A Seminar in Sociological Theory Construction

본 강좌에서는 사회학적 연구가 기초한 다양한 설명의 논리들에 대해 검토한 후, 기존 이론에 대한 비평을 토대로 학생들이 스스로 연구를 설계하고 논리적으로 설명의 틀을 만드는 훈련을 하며, 그 결과를 두고 토론을 진행한다. Students are required to review diverse logics of explanation embedded in classical and contemporary sociological works. Then students carry out individual research projects by implementing logical explanations to their own research questions under the guidance of instructor, and discuss their research in the seminar.

205.714 社会学イロハ論 3-3-0

Topics in Sociological Theories

본 세미나는 오늘날 사회현상을 설명하는 다양한 사회이론들을 비교 분석하고, 경험적 사료와 이론의 내적 논리에 대한 비판적 평가에 기초하여 각 이론들을 비판적으로 판단하는 데 중심점을 둔다. This seminar compares major contemporary sociological theories and their applications to the study of social phenomena. Emphasis is placed on assessing and evaluating explanatory theories based on data and critical assessment of a theory’s logic.
고고 소비하는 사회적 환경을 분석한다. 특히 예술가의 경력, 예술적 대상과 활동을 위한 시장을 형성하는 요인들, 경영과 효과, 문화소비에서 나타나는 계급 간 차이 등에 초점을 맞추어 분석한다.

The course is to analyse productions, circulations and consumptions of popular culture in terms of its theory and practice, based on the cultural theory, which is taught in the Undergraduate course. It explores the social settings within which cultures—literature, painting, theatre, fashion, popular magazines, and television—are produced and consumed. Special attention is paid to the development of artistic careers, the forces shaping markets for artistic objects and performances, the effects of censorship, and class differences in cultural consumption.

205.759 사회계층연구 3-3-0

Studies in Social Stratification

본 강좌는 사회적 계층화의 주요 형태들을 탐색한다. 주로 산업 사회에 초점을 맞추어, 사회적 불평등의 구조, 사회적 위치의 위계, 그리고 지위작용 등을 분석한다. 이 강좌에서 다루는 주요 주제는 계급형성, 사회적 이동성, 사회적 산별 과정, 지위 상승, 사회적 통합과 계층화의 관계, 그리고 계층화가 산업과 정치에 미치는 영향 등이다.

This seminar explores the major forms of social stratification with a focus on industrial societies, the structure of social inequality, prestige hierarchies, and status structures. Other topics include the following: class formation; social mobility; processes of 'social selection' and status attainment; and social stratification and sub-cultural variations; social stratification in relation to social integration, conflict and change, with special reference to industry and politics.

205.761 과학기술사회학연구 3-3-0

Seminar on Sociology of Science and Technology

본 강좌는 주제 주변하는 과학적 신념체계의 특성들에 초점을 맞추고 있다. 과학이 사회에 미치는 영향뿐 아니라 과학발전의 사회적 배경과 과학 활동의 사회적 조직들에 대해서도 다룬다.

The main topics in this seminar are the characteristics of scientific belief systems, the social background of the development of science and the social organization of its activity, as well as the impact of science on society.

205.762A 정치사회학연구 3-3-0

Seminar on Political Sociology

이 과목은 사회발전과 정치체제 변화의 관계를 특히 경제발전, 사회적 관계, 정치의 관계를 분석하는 데 일치적인 목적을 갖는다. 정치체제의 변화는 사회적 구조와 조직의 역사적 변화와 관련된다는 입장에 기초하며, 정치적 변화의 기원과 의미를 역사적· 비교사회학의 관점에서 탐구한다.

This course examines the relationship between social development and political change by surveying the interrelationship between economic development and politics. Transitions among democracy and dictatorship or socialism as well as capitalism are explored. Also considered are the significance of political reforms from comparative and historical perspectives.

205.764 사회학방법론연습 3-3-0

Research Practicum in Sociological Methodology

이 과목은 대학원 학사과정 학생들을 대상으로 사회학방법론과 관련된 주요내용과 영역을 수록하고 이를 실제 연구에 활용할 수 있는 동력을 함양시키는 것을 목적으로 하며, 매 학기마다 (1) 질적방법론, (2) 고급통계, (3) 사회학리구성, (4) 비교사회연구법론 등을 주제로 반복이 개설된다.

This course surveys methodologies in Sociology. It trains students to apply these methods to actual research. Each semester, one of following themes will be chosen and studied: theory construction and verification, professional statistics in social research, comparative analysis, and qualitative methods.

205.765A 사회복지학연구 3-3-0

Seminar on Social Network Analysis

이 과목은 사회 연결망 분석의 기초개념과 분석 방법론에 대해 다루는 수업이다. 이 과목에서는 (1) 연결망 분석과 관련된 주요 이론들을 탐색하고, (2) 자료를 수집하는 방법, 그리고 (3) 연결망자료를 분석하고 해석하는 방법을 다룬다.

This seminar focuses on theoretical and methodological issues related to social network analysis. The theoretical core of this approach is that actors are interdependent, and that social structure emerges from regularities in this interdependence. In this seminar, students (1) review major theoretical ideas related to network analysis, (2) explore ways to collect social network data, and (3) analyze and interpret social network data.
하단에 있는 잠재적 차이와 역사적 변천에 주목한다.

이 seminar draws on the relationship between poverty and inequality in diverse economic political perspectives. By examining the controversies surrounding causes and policy interventions of poverty, the change in the view about the poverty and its temporal and social prescriptions are inquired.

이 강좌는 사회구조에 대한 다양한 이론적, 방법론적 접근들을 탐색한다. 사회학 내의 다양한 주제들(예, 계층, 제도, 연령 등)이 포함되지만, 경험적 분석과 이론 구성의 두 요건을 엄두에 두고 ‘이야기의 틀’에 중점을 둔다. 구체적인 주제 및 소재는 학기마다 수요에 맞게 설정된다.

A range of theoretical and methodological approaches to social structure are explored in this course. The concrete refers are diverse materials from the whole spectrum of sociological enterprise (e.g., social stratification, institutions, social networks, etc.); yet the organizing principle is to find a place between empirical analysis and theory construction with a focus on "how to frame a story." Specific topics and materials are to be selected on yearly basis to reflect the demands.

이 강좌는 거시적 전환을 위한 목표로 설정한 '사회의 전환'에 주목하여 그 개념과 이론, 그리고 국제적 비교를 통해 한국사회 새로운 발전모델을 탐색한다. 사회발전연구소의 중점연구과제와 연계하여 참여 연구진과 공동으로 진행한다.

This seminar attempts to overcome the developmental model based on either economic growth or democratization by exploring a more comprehend development model based on the concept of ‘social quality.’ This seminar will utilize diverse concepts, theories, and comparative studies. Ongoing research on social quality conducted by the Institute for Social Development and Policy Research will be widely utilized in the seminar.

 Hordeal and labor and employment in the context of social transformation

This seminar focuses on the concept of 'social quality.' This seminar will utilize various theoretical and methodological approaches to social science disciplines, this seminar examines to what extent national institutions have changed over the last few decades and what forces would explain the changes. It also discusses how and why firms adopt alternative approaches to work and employment.
Studies in Folklore

This course combines Korean folklore with its traditional culture. Students will understand a variety of folk phenomena in historical and cultural contexts. They will also be exposed to the different investigative methods used to document such research. Specific topics will include: daily life, food, clothing and housing habits, ceremonial occasions, markets and trade, family and kinship, law, folk art, as well as the folk religion of a traditional society.

Museum and Anthropology

This course examines the character and history of anthropological museums, while teaching the diverse ways to collect, preserve, and exhibit material culture. In addition, it will study the problems related to the exhibition and presentation of other cultures, such as museum and state culture policy, museums and minority culture, as well as the cultural consciousness of museum visitors.

Linguistic Anthropology

This course is an introductory seminar on the field of linguistic anthropology, the study of language and communication from the view point of man and culture. We will explore major topics on language use in sociocultural contexts and systematic interrelationships among language, society and culture.

Ecology and Anthropology of Resource

This seminar is an introduction to the theories of Ecological Anthropology concerning the understanding of environment, resources, and culture. The course begins with tracing the contours of various studies in terms of applied Ecological Anthropology. It then surveys the relationship between culture and practical problems such as environmental pollution, and resource exhaustion. This class will be conducted in a seminar style.

Psychological Anthropology

This course begins by investigating the relationship between individual/collective psychological characteristics or personality and the characteristics of the given society and culture. It continues with in-depth debates on the psychological characteristics of human beings. Topics will include: the overview of traditional studies on culture and personality with a focus on the relations between collective personality and culture; the comparison of anthropological studies and other disciplines, including human psychology, and, finally, the critique of the diverse theoretical currents in anthropological studies of psychology.

Economic Anthropology

This course will develop a deeper understanding of the various anthropological theories and perspectives concerning human economic behavior and systems. Topics for investigation will include: anthropological literature on the factors and institutions found in advanced capitalist countries. Focus will be on the holistic interconnection between World economies as well as economic behaviors, processes and changes found in these characteristics, primitive and peasant economic systems, the urban informal sector in Third World economies as well as economic behaviors, processes and changes found in these characteristics, recent development in economic anthropology, and the overview of traditional studies on culture and economy.
among language, culture and cognition. In particular, through examining the universality and particularity of folk classification systems in various semantic domains, we will attempt to understand significant aspects of cultural cognition reflected in language.

206.624 社会언어학 3-3-0

Sociolinguistics

This course attempts to understand the theoretical perspectives of social structure. In particular, we will attempt to understand basic frameworks of the Ethnography of Communication, focusing upon aspects of language use in social context.

206.628 한국문화연구 3-3-0

Studies in Korean Culture

This course takes an anthropological perspective in understanding Korean culture. It includes critical review of the ethnographic literature on Korea, covering the traditional to the contemporary period, as well as theoretical works which attempt to define the characteristics of Korean culture. Further emphasis will be on the relationship between common East Asian cultural characteristics and those peculiar to Korea.

206.630A 인류학과 식민주의 3-3-0

Anthropology and Colonialism

This course will develop a cross-cultural perspective of diverse human social organization. In particular, we will attempt to understand basic frameworks of the Ethnography of Communication, focusing upon aspects of language use in social context.

206.636 도시인류학 3-3-0

Urban Anthropology

This course attempts to understand the theoretical perspectives and methodologies of Historical Anthropology. This course will address such issues as modernity, postmodernity and post-Orientalism in order to recognize how the question of Otherness in Anthropology, is a new subfield that bridges the two disciplines of Anthropology and History. The class will focus on the relationship between common East Asian cultural characteristics and those peculiar to Korea.

206.636A 역사인류학 3-3-0

Historical Anthropology

This course attempts to understand the theoretical perspectives and methodologies of Historical Anthropology. This course will address such issues as modernity, postmodernity and post-Orientalism in order to recognize how the question of Otherness in Anthropology, is a new subfield that bridges the two disciplines of Anthropology and History. The class will focus on the relationship between common East Asian cultural characteristics and those peculiar to Korea.

206.633 정치인류학 3-3-0

Political Anthropology

This course will develop a cross-cultural perspective of diverse human social organization. In particular, we will attempt to understand basic frameworks of the Ethnography of Communication, focusing upon aspects of language use in social context.
how the life in the city as a specific type of spatial entity affects human behaviour and thought pattern. In addition, the course includes discussions of students' research proposals concerning Korean urban life, drawn up on the basis of pilot fieldwork and literature review, as a way of enhancing students' understanding of the methodological characteristics of urban anthropology.

206.639C
Studies in Biological Anthropology and Lab

This course introduces the biocultural concept needed for understanding the origins and diversities of mankind as holistic human beings. For this purpose, the course provides students with basic knowledge in evolutionary theory, primatology, evolutionary process of human species, biological diversities of extant human groups, and key concepts and methods of evolutionary studies of human behavior. The class will also examine the various theoretical controversies related to the reconstruction of the evolutionary process of the human species as well as the effects of prehistoric ecology and culture upon human biology.

206.640A
Studies in Chinese Society and Culture

This course aims at understanding diverse medical systems found in human societies. Lecture and discussion topics include: How illnesses are diagnosed and treated according to different medical systems? How the knowledge concerning health policies on local, national and international levels? How macro and micro health and illness are culturally constructed? How macro and micro health policies can be applied for the efficient implementation of health programs at the social production of illness? How medical anthropology can be applied for the efficient implementation of health policies on local, national and international levels?

Anthropology of Japan

The course attempts to understand the cultural characteristics of Southeast Asia using comparative perspectives. Topics to be covered will include: ethnic and linguistic composition, patterns of everyday life including religious beliefs and rituals, socio-cultural changes that followed acculturation and modernization. Special attention is paid to the differences in terms of cultural tradition between mainland and island Southeast Asia, as well as the differences between countries in terms of the historical experience of colonization and de-colonization.

Anthropology of Southeast Asia

This course aims at understanding diverse medical systems found in human societies. Lecture and discussion topics include: How illnesses are diagnosed and treated according to different medical systems? How the knowledge concerning health and illness is culturally constructed? How health and illness policies can be applied for the efficient implementation of health programs on local, national and international levels?
206.803 Reading and Research

This is an intensive course designed to help graduate students prepare their own thesis through regular tutorial sessions with academic advisors. Themes, topics, texts and format of the course will vary according to individual students and academic advisors. Students are required to produce thesis proposals and intermittent progress reports and attend regular tutorial sessions. Students are evaluated on a Pass/Fail (P/F) basis.

206.804 History of Anthropological Theory

This course aims at enhancing, through a review of the historical process whereby the discipline of Anthropology has been developed, students’ understanding of the characteristics of Anthropology, including its developmental relationships with other disciplines as well as its major concepts, theories, and methods. For this purpose, the course will first examine the historical background needed to understand the rise of the discipline of Anthropology within Western human and social sciences. It will then examine the main proponents and arguments of evolutionism which dominated the latter half of the 19th century after Anthropology was established as an academic discipline. The course will also examine the early 20th century reactions to Evolutionism such as Diffusionism, Functionism, and Historical Particularism. Finally, the major theoretical paradigms that have arisen since the mid-20th century, including Neo-Evolutionism, Structuralism, Ethnoscience, the Action-Centered Approach, Neo-Marxism, the Interpretive Approach and Postmodernism, will also be examined.

206.805 Anthropological Research

This course aims at teaching the anthropological perspectives and methodologies involved in understanding social differentiation, i.e. the universal differentiation of the members of a society into different social groups and the social inequality which often obtains between different social groups. For this purpose, the course reviews anthropological and related literature concerning social differentiation found in wide-ranging types of society from primitive hunter-gather
er to modern complex societies based upon age, gender, kinship, social stratification, religion, occupation, political standpoint, nation, and/or race, etc. and discusses the ways to solve the various social problems resulting therefrom. In addition, the course includes discussions of students' research proposals drawn up on the basis of pilot fieldwork as well as literature review.

206.811B
**Anthropology of Sport and Leisure**

This course aims at understanding religious phenomena in their cultural contexts, such as systems of ideas and behaviors associated with supernatural beings and forces. For this purpose, various forms of worldviews, belief systems, religious rituals, symbolic processes as well as religious movements will be examined. Students will learn various anthropological theories and perspectives regarding the nature of religious phenomena and discuss the relationship between religion and culture.

206.814A
**Anthropology of Russia**

This course is an examination of human behavior and cultural processes. It includes discussions of students' research proposals concerning contemporary Korean sport and leisure life, drawn up on the basis of pilot fieldwork and literature review, as a way of enhancing students' understanding of the methodological characteristics of the anthropological approach to sport and leisure.

206.817
**Anthropology of Education**

This course explores the cultural nature of learning, by examining primate learning, the relationship between learning and play, and cultural organization of learning. Also included is a critical examination of how educational practices are related to the socialization of children in different cultural contexts. Students will learn various anthropological theories and perspectives regarding the nature of educational phenomena and discuss the relationship between education and culture.

206.818A
**Studies in Evolution and Human Behavior**

This course explores the cultural nature of learning, by examining primate learning, the relationship between learning and play, and cultural organization of learning. Also included is a critical examination of how educational practices are related to the socialization of children in different cultural contexts. Students will learn various anthropological theories and perspectives regarding the nature of educational phenomena and discuss the relationship between education and culture.

206.813C
**Studies in Anthropology of Religion**

This course is an examination of human behavior and cultural processes. It includes discussions of students' research proposals concerning contemporary Korean sport and leisure life, drawn up on the basis of pilot fieldwork and literature review, as a way of enhancing students' understanding of the methodological characteristics of the anthropological approach to sport and leisure.
206.823 한국의 언어문화 3-3-0

Linguaculture of Korea

이 과목은 한국 사회의 전통적이고 특징적인 언어문화에 대한 탐구를 목표로 한다. 한국 언어문화의 주요 특성 및 그것의 지역적, 사회적 변이성을 발견, 분석하는 것이 주 내용이 되는 것이다.

The purpose of this course is to explore the traditional and characteristic linguaculture in Korean society. We will discover and analyze the main characteristics and the regional and social variation of Korean linguaculture.

206.824A 자아, 몸, 퍼포먼스 3-3-0

Self, Body, and Performance

이 강좌는 자아 및 공동체적 가치의 예술적 표현을 비교문화적으로 검토하는 바, 예술, 감정, 몸, 놀이, 미학 등을 주요하고 한다. 예술적 자아표현 및 공연예술은 해당 사회의 문화심리적 정향, 특히 예술의 일관성으로 제한될 뿐 아니라 그러한 제한을 통해 예술을 구성하고 변화시키면서 문화적인 과정에 역동적으로 기여한다. 이 강좌는 문화적으로 정립된 예술적 문화를 통해 문화와 개인 간의 역동적인 관계가 어떻게 펼쳐지는지에 초점을 둔다.

This course aims to explore the unfolding of the dynamic relationship between culture and individual in the artistic expressions of self and body, particularly in performative arts. Key concepts include emotion, body, play, aesthetics, ethos, and performance. The course emphasizes how the aesthetic dimension of culture is deeply entrenched in the body and self of individuals.

206.825 언어와 젠더 3-3-0

Language and Gender

본 강좌는 남성과 여성, 또는 남성과 여성간이 구성되는 중요한 문화적 기제의 하나로서 언어사용 방식을 탐구한다. 수업을 통하여, 학생들은 남성/여성, 또는 남성/여성간의 어떻게 사회문화적으로 구성되는지 언어사용 양상을 통해 분석할 수 있는 연구방법을 익힌다. 특히 젠더, 성우, 성상 등이 구성하는 성의 옅음을 간직한 의사소통의 도구로서의 언어사용을 탐구한다. 따라서 이 수업을 통해, 학생들은 다양한 언어 사 용상의 장이 되는 것과도 비슷한 개념을 가진다, 동시에, 성별, 성상 등이 언어사용을 통해 어떻게 구성하고 안정되는지를 이해할 수 있다.

This course aims to explore the interplay among language, gender, and sexuality. In this course, students will examine gender and sexuality as linguistically constituted and culturally performed. This will be possible through the larger context of society. The students will be able to understand the roles of language in the construction of gender and sexuality in the following two aspects: 1) language as a conceptual tool by which people perceive and conceive the sexed body and desire, and 2) language as communicative practices in which desire and gendered identities are performed and communicated in specific social contexts. This course will focus not only on the gendered identities such as ‘men,’ ‘women,’ ‘gay,’ and ‘lesbian,’ but also on desire, sensation, pleasure, intimacy and fantasy.

206.826 문화와 언어예술 3-3-0

Culture and Verbal Art

본 강좌는 학생들에게 언어예술과 인연을 분석하는 데 보다 심도 깊은 인문학적 접근방법을 소개한다. 인간의 언어행위는 다양한 사회적, 문화적, 미적 의미를 전달하기 위한 기능을 수행한다. 특히 본 강좌에서는 이러한 의미를 전달하기 위한 언어의 사용과 사회, 문화의 관계를 언어인류학적 관점에서 살펴본다. 이러한 강좌를 통하여, 학생들은 자연 언어의, 예를 들면, 말장난, 시, 노래, 사전, 대화연이 등 정체화된 언어형식이 존재하는 맥락에 압박된다. 특정 사회단위의 정체성은 구축하고 표현하는 각종 스타일, 언어 변형 등을 분석하는
근본의 뿌리를 찾아볼 수 있다. 이러한 다양한 언어 예술적 행위를 분석하는 도구로서 민족사학, 언어학 등, 인간 중심의 접근방법을 살펴보며, 보다 구체적으로는 화행예론, 상징적 상호작용론, 언어학과 인간행 등의 이론을 다룬다.

This course introduces students to a variety of anthropological approaches to verbal art and performance. People use language not only for communication, but also for diverse social, cultural, and aesthetic meanings in their interactions. In this course, we will focus on the aesthetic meanings of verbal art in relation to social and cultural meanings in daily life. Students will be able to learn various theoretical approaches and analytical tools to analyze a variety of genres, from speech play, poetics, songs, narratives, ritual speech, to style and speech variations that are typically associated with social identities of a specific group. The analytical tools to analyze various genres of verbal art include ethno-poetics and performance-oriented approaches in linguistic anthropology. More specifically, it examines speech act theory, symbolic interactionism, ethnography of speaking, as well as performance and performativity.

206.827 과학기술의 인류학 3-3-0

Anthropology of Science and Technology

이 과목은 현대의 과학과 기술을 문화적인 지식체계와 실천 양식으로 파악하는 인류학적 관점에서 새로운 과학기술이 생산되고 현실에 적용되는 사회문화적 과정을 민족지적 방법에 의하여 탐구한다. 과학기술의 전문적 지식과 대중적 이해의 관계, 과학기술의 영향 내에 위치한 다양한 행위자들의 상호작용, 과학적 지식과 통상적 지식의 관계, 과학기술이 사회자연계로서의 생태계에 미치는 영향을 중요한 주제로 다룬다.

This course investigates the issues of contemporary science and technology from the anthropological perspective and ethnographic method. While it assumes science and technology as a cultural knowledge system and practice, it focuses on sociocultural process in which new scientific technologies have been produced and applied in practice. In particular, the major themes of this course are the relations between expert knowledge and civil understanding of science, interactions between diverse agents in the network of science and technology, relations between scientific knowledge and indigenous knowledge, and effects of science and technology on ecology as a socio-natural system.

206.829 한국민속연구 3-3-0

Studies in Korean Folk Culture

본 수업은 한국 민족 문화의 다양성과 고유성을 이해하고 변화 과정을 검토하는 것을 목표로 한다. 한국 민속에 대해 한국 인류학계에서 축적한 연구 성과들에 대한 비판적 접근을 통해 한국 민속을 연구학적 학문적 기초를 중심으로 파악하고, 학생들은 과거와 현재의 여러 민속 현상에 대한 이해를 기반으로 한국 민속이 가지하고 있는 독특한 구조나 기능, 의미를 파악할 수 있게 된다.

This course aims at understanding Korean folk culture and its originality, variety, and changes. It offers, through critical review of works of Korean anthropologists, an academic basis studying folklore. Students will grasp the unique structure, function, and meanings of Korean folklore, which is based on the knowledge about various folk phenomena.
Designing Anthropological Research and Writing

This seminar aims to make the students experience the whole processes of anthropological research and writing. In the seminar, the students go through a series of steps such as selecting themes, reviewing theories, conducting fieldwork, organizing materials, and writing academic essays. In so doing, this seminar designs to help them not only to acquire the capability of practicing anthropological research and writing but also to reflect the merits and problems of ethnographic studies theoretically, methodologically, and philosophically.

Writing in Anthropology

This seminar is concerned with (1) reflecting on the role of writing in anthropology as well as (2) exploring genres and forms of anthropological writing. Our guiding questions are, What makes certain writing anthropological and how do we produce such writing? The theoretical component will revolve around ethnography as a representative archaeological genre. We will discuss an ethnographer’s narrative choices, including but also to reflect the merits and problems of ethno-graphic studies theoretically, methodologically, and philosophically.

Anthropology of Work and Industry

This lecture aims to explore the meaning of work and industry in human societies especially under capitalism. This lecture is composed of four parts. First, we review the classic theories and debates on work, class, and culture in capitalism. Second, we attempt to understand anthropological theories and ethnography on work and culture in the historical junctures of capitalism such as colonialism, post-socialism, and neo-liberalism. Third, we examine how the work in capitalism produces and reproduces inequality in association with gender, class, ethnicity, and race. Lastly, we explore the issue of resistance and consent to the inequality produced by capitalist work and industry. As it is, the lecture ultimately intends to explore the way how work and industry in capitalism produces cultural politics in societies.

Anthropology of Mediation

Anthropology of Ethics

Anthropology of Work and Industry

Anthropology of Ethics

Anthropology of Mediation

Anthropology of Ethics

Theoretical and empirical research on work and industry in human societies is extensive and complex. It is a field where social scientists, including anthropologists, have a significant role to play. This course aims to provide students with a solid foundation in the key concepts and methodologies of work and industry anthropologies, as well as an understanding of the ethical implications of this research.
The course explores cross-cultural and comparative approaches to the diverse forms of nations and nationalism in the world. By reading literature on various forms and ideas of nation and nationalism, students can understand how historical and cultural conditions of a specific locale have affected the exact formation of nation and nationalism, which sometimes resulting in destructive consequences to the involved groups of people. Course topics include cases both from "the West" and "the rest." About the nation and nationalism of the West, we will look into key concepts of nationalism debates such as "primordial nationalism" (Hobsbawm) and "bilingual elites" (Anderson) and how anthropological literature offers critical perspectives on the concepts. Later students will discuss how the images and concepts of the "ideal nation-state" transferred to the places they have lived in and how they have been transformed by the historical depth and culture of specific locales. For these cases, we will critically analyze the "primordial" nationalism of Japan and Korea, the political implications of "ethnic minorities" of China and its patriotic nationalism, the processes of nation-building in Southeast Asian countries such as Singapore, Malaysia, and Indonesia, and the origins of Hinduism and the roles of the "linguistic elites".
been affected by particular modes of global capitalism’s local embedding. Regarding the diverse modes of the embedding, we investigate how local communities and individuals react to the changes caused by the globalizing capital. By reading ethnographic writings about the various workplaces in capitalist and post-socialist countries, students can understand how the existing culture of the people has affected their reactions to the incessant changes. Course topics include: the emergence of Japanese “corporate culture”; Japanese office workers’ reaction to the call of globalization; militarized modernization of South Korea and its impact on the South Korean work culture; Chinese blue-collar workers’ understanding of their sweatshop jobs and the “patriotic professionalism” of Chinese elite workers; Indian workers’ view about their jobs in a global call center; the lives of investment bankers in New York Manhattan; part-time restaurant workers in the American Midwest; Mexican migrant workers in the Deep South; and patriarchal work culture of Peruvian mines.

This course considers images, visual meanings, and regimes of visuality through an anthropological lens. We will look into diverse manifestations of visual culture, from religious images and body aesthetics to advertisements and selfies. Studying theories and methods for analyzing visual symbolic forms within a cultural-historical framework, we will consider how vision is always culturally mediated; how visuality encompasses not only what is visible but also visual technologies and viewing positions; and how controlling what is seen and by whom has been implicated in power relations. We will also explore how visual imagery can be integrated into anthropological knowledge production.
207.501 Advanced Psychological Statistics

This course offers an overview of descriptive and inferential statistics, including random variables, probability theory, parameter estimation, hypothesis testing, and regression analysis.

207.507 Advanced Psychology of Personality

This course covers the major theoretical approaches to personality development from infancy to adulthood. It provides an overview of the main theoretical perspectives and their empirical support, as well as a critical evaluation of the research on personality development.

207.509 Advanced Social Psychology

This course focuses on the social psychology of motivation, emotion, and cognition. It covers topics such as self-concept, social comparison, emotion regulation, and attribution theory.

207.511B Psychopathology 1

This course introduces students to basic concepts in clinical psychology, with an emphasis on normal and abnormal development from infancy to adulthood. It covers topics such as the etiology and classification of mental disorders, epidemiology, and assessment of psychological disorders.

207.512 Advanced Psychology of Perception

This course covers the major psychological theories of perception, emphasizing computational and computational-constructivist approaches. Students critically examine the computational and computational-constructivist approaches to several topics in perception, such as attention, memory, and learning.

207.513 Research Methods in Psychology of Perception

This course covers the major research methods used in psychology of perception, providing an introduction to the use of various methods, such as experiments, surveys, and case studies.

207.514 Advanced Psychology of Language

This course covers the major psychological theories of language, emphasizing computational and computational-constructivist approaches. Students critically examine the computational and computational-constructivist approaches to several topics in language, such as syntax, semantics, and pragmatics.

207.516 Advanced Developmental Psychology

This course covers the major psychological theories of developmental psychology, emphasizing computational and computational-constructivist approaches. Students critically examine the computational and computational-constructivist approaches to several topics in development, such as cognitive development, social development, and emotional development.

*The first number means "credits"; the second number means "lecture hours per week"; and the final number means "laboratory hours per week. 15 weeks make one semester.*
207.519A 심리평가 3-3-0

Psychological Assessment

임상현장에서 사용되는 주요 심리검사와 진단적 면접법 및 행 동평가법의 이론적 근거와 기법을 소개하고 이를 실습한다. 특히 MMPI, PAI,는 자기보고형 성격 검사와, Rorschach 검사, 주체 화학검사(TAT) 등 비구조화된 성격평가 기법의 이론적 근거, 제 작 과정, 실시 및 해석방법을 집중적으로 다루며, 심리검사의 신뢰 높고 타당한 실시 및 해석을 위해 필요한 면접 및 행동관찰 기 법도 소개한다. 주요 검사모델로 사례연구와 실습, 보고서 작성을 동 해 독자적인 실시 및 해석능력을 습득하도록 하며, 성격평가와 정 신분할의 관련성을 논의한다.

This course is an introduction to the theoretical foundations and techniques of major psychological testing, diagnostic interviewing, and behavior assessment. It focuses on the theoretical foundations, procedures of development, and methods of administration and interpretation of self-reported measures of personality such as the MMPI, PAI, and also the Rorschach Test, Thematic Apperception Test (TAT) etc. Students will learn the techniques of interviewing and behavioral observation necessary for valid administration and interpretation of tests. Students can also foster a capacity for the administration and interpretation of major test methods by studying cases, practicing, and making reports. We also discuss the relationship between the assessment of personality and Psychopathology.

207.520B 정신병리학세미나 3-3-0

Seminar in Psychopathology

정신병리학의 개념, 연구 및 이론들을 개관하는 것을 주목적으로 한다. 일차적으로 논의하게 될 것은 정신병리학의 포괄적이고 정확한 임상적, 철학적인, 이론적 이론들을 다루며, 정신병리학이 대화와 더불어 정신질환을 해결하기 위한 중요한 도구임을 강조한다.

This course is an introduction to basic concepts, development of theories and techniques. It surveys multivariate normal distribution, variance and discriminant analyses, canonical correlation, and regression. It also introduces important statistical methods used in experimental design.

207.522A 심리치료와 고급성담이론 3-3-0

Theories of Psychotherapy and Advanced Counseling

현대 상담 및 심리치료이론의 기초개념, 제이론의 발전배경과 현황, 아론델 접근방법과 사례적용, 그리고 아론델 성격관계 및 종합 등으로 과학적내용이 구성된 것이다.

This course introduces the basic concepts, development of modern approaches and theories, case studies and the relationship between theories and practices in Psychotherapy.

207.529 고급공업심리학 3-3-0

Advanced Industrial Psychology

이 과목은 대학원생과 학부 상급생을 대상으로 인지와 행동의 원리, 조직과 개인의 관계 및 조직의 관행적, 운동의 관행적, 인지학적 및 행동학적 기초에 대해 다루는 과목이다. 신경과학과 생물심리학의 기초를 이미 습득한 학생들을 대상으로 한다. 감각처리, 운동체계의 원리, 감각-운동계의 문제, 정신분열증의 문제, 주의의 생물 학적 기초, 사회적 효과, 학습/기억/반도의 생물학적 과정들에 관한 최근의 개발을 다룬다.

This is an advanced course on the biological basis of cognition and behavior. It is assumed that the students have mastered the basics of Biopsychology. They will examine the biological basis of cognition and behavior through review of contemporary research in areas such as sensory processing, principles of motor control, problems associated with sensory-motor interface, problems of knowledge representation, the biological basis for attention and awareness, social effects on brain, and biological mechanisms of learning memory and development. Prerequisite for this course is ‘Neuroscience’ or its equivalent.

207.532 고급조직심리학 3-3-0

Advanced Organizational Psychology

대학원생으로서 필히 습득해야 할 개인, 집단, 조직수준에서의 세부 조직이론들을 비교적 깊이에서 다룬다. 아울러 조직과학의 이론, 전자행동(electronic behavior), 탈합적 조직행동, 조직공정, 조직적 재앙 및 에너지, 누적정의, 조직문화, 직무설계, 조직학적, 정보화 사회, 조직경영 등과 관련한 조직심리학의 최근주제들을 다루므로 가능한 연구주제를 도출해 본다.

As a course for graduate students, it introduces and discusses a variety of organizational theories at individual, group and organizational levels. The course covers theories on electronic behavior, non-rational organizational behavior, organizational justice, psychological contract, unemployment, trust and distrust, labor dispute, organizational decline, job redesign, organizational innovation, information society and organizational change, knowledge management. In addition, we will look at some relevant topics from related areas such as Organizational Sociology, Industrial Economics, and Cultural Anthropology.

207.535 다변량분석법 3-3-0

Multivariate Analysis

이 과목에서는 다변량에 대한 통계이론들과 분석법들을 다룬다. 다변량 정규모모, 다변량 분산분석, 관별분석, 정준분석, 공분산 구조모형들이 다루어질 것이다. 또한 다변량을 위한 통계 패키지의 사용방법에 대하여도 배울 것이다.

The goal of this course is to teach multivariate statistical theories and techniques. It surveys multivariate normal distribution, variance and discriminant analyses, canonical correlation, as well as factor analysis and covariance structure models.

207.537 고급산업심리학 3-3-0

Advanced Industrial Psychology

1학기 고급조직심리학의 연중강으로 진행됨. This advanced Industrial Psychology course is offered as part of the advanced studies in Organizational Psychology.
The goal of the course is to introduce recent important studies in experimental psychology and to discuss the basic principles of human mind. The course initially attempts to introduce general theories and discuss the limitation of them at the physiological, perceptual, and cognitive level. On the basis of these theories, the course covers such specific topics as vision, attention, language, problem solving, human inference. The course also attempts to introduce general practice of studying these topics through experiments.

207.548
Seminar in Methodology on Experimental Psychology

This course is intended for graduate students to explore the field of experimental psychopathology focusing on studies in experimental psychopathology and to discuss the basic principles of human mind. The course initially attempts to introduce general theories and discuss the limitation of them at the physiological, perceptual, and cognitive level. On the basis of these theories, the course covers such specific topics as vision, attention, language, problem solving, human inference. The course also attempts to introduce general practice of studying these topics through experiments.

207.547
Seminar in Experimental Psychology

This course is intended for graduate students to explore the field of experimental psychopathology focusing on studies in experimental psychopathology and to discuss the basic principles of human mind. The course initially attempts to introduce general theories and discuss the limitation of them at the physiological, perceptual, and cognitive level. On the basis of these theories, the course covers such specific topics as vision, attention, language, problem solving, human inference. The course also attempts to introduce general practice of studying these topics through experiments.
that examine the biological basis of mental illnesses. The course is constructed in three parts. Part 1 deals with the philosophical and methodological issues that are important in experimental psychopathology. Part 2 examines the important studies on major mental illnesses, i.e., schizophrenia and bipolar disorder. Part 3 explores the diseases associated with pathological neurodevelopment, such as autism and dementia.

207.553 인지노화와 치매 3-3-0
Cognitive Aging and Dementias

In this course we read and discuss the sciences on cognitive and neural basis of cognitive aging and dementias.

207.554 공정 암성심리학 세미나 3-3-0
Seminar on Positive Clinical Psychology

This course will involve researching and discussing the sciences on cognitive and neural basis of cognitive aging and dementias.

207.711A 성격연구세미나 3-3-0
Seminar in Personality Studies

In this course we read and discuss up-to-date papers on personality, plan empirical studies, and explore the possibilities of application. Every student chooses an individual research project and helps select a class project. Possible candidates include research relating personality to emotion, self, motivation, and development.

207.718A 고급응용발달심리학 3-3-0
Advanced Applied Developmental Psychology

Advanced Applied Developmental Psychology examines psychological concepts, principles, and theories that are relevant to the study of human development, with a focus on the biological, cognitive, and social factors that influence development. The course covers topics such as cognitive development, language development, social development, and emotion development. Students will learn how to apply these concepts and theories to real-world situations.
Advanced Biopsychology or its equivalency.

The following topics in Organizational Psychology and research will be considered in this course:

1. Indigenous Psychological Perspective
2. Rationality and Decision Making in Organizations
3. Organizational Learning and Knowledge Creation
4. Identity in Organizations
5. Trust, Psychological Contract, Contingent Workers, and Virtual Organizations

The main objective of this course is to help students apply theories and concepts of Organizational Psychology to real organizational settings. The definition, basic assumptions and interventions of OD (Organization Development) are introduced. The influence of ODer's personal characteristics on the selection, OD interventions as well as the unresolved issues in OD are also discussed.

The course introduces basic concepts, theories, and techniques required for the study of Group Psychotherapy.

This course introduces basic concepts and procedures, and therapeutic techniques required in Psychotherapy and counseling.

This course is offered to graduate students in Biopsychology and Neuroscience. Neurophysiological and psychophysical research work on visual, visuo-motor, and motor control areas is reviewed and discussed. Prerequisite for this course is ‘Advanced Biopsychology’ or its equivalency.

The following topics in Organizational Psychology and research will be considered in this course:

1. Indigenous Psychological Perspective
2. Rationality and Decision Making in Organizations
3. Organizational Learning and Knowledge Creation
5. Trust, Psychological Contract, Contingent Workers, and Virtual Organizations

The aim of this course for advanced students is to enhance developmental psychological thinking in life-span development(infancy, childhood, adolescence, adulthood, and aging) from a seminar on the topics of the cognitive, social development, social cognition & developmental disorder review and discussion of theory and experiment of relative issues.

The course introduces basic approaches, procedures, and techniques required in Psychotherapy and counseling.
Advanced Psychology of Learning & Memory

This course will provide an overview of the history of research on judgment and decision making, and explore practical ways which can increase its usage in neighboring disciplines. The history of the research on judgment and decision making began with intuitive statisticians and is advancing by challenging and elaborating on the studies of heuristics and biases by Kahneman & Tversky. In addition to these theoretical advances, various techniques are being developed in order to improve judgment and decision making in real life situations. This course will review current psychological research on judgment and decision making, and explore practical ways which can increase its usage in neighboring disciplines.

Main Topics in Social Psychology

The goal of this course is to provide an overview of the classic studies and the recent developments in the psychology of learning and memory. The focus is on the major findings and theories in associative learning, and the debate between memory systems theory and the memory process theory. We will also examine how these psychological discoveries can be applied in education and training.

M1308.000600 高级判断与决策心理学 3-3-0
Advanced Psychology of Judgment and Decision

M1308.000400 高级社会心理学 3-3-0
Main Topics in Social Psychology

M1308.000700 组织心理学的最近研究主题 3-3-0
Advanced Seminar in Attention and Performance

M1308.000800 积极组织心理学 3-3-0
Positive Organizational Psychology

M1308.000500 研究方法 3-3-0
Affective Science

M1308.000400 应用心理学研讨会 3-3-0
Seminar in Applied Psychology
M1308.001500 Seminar in Applied Psychology

The goal of this course is to provide a general knowledge of the multi-disciplinary field of psychology of aging. Specific topics include physiological, cognitive, social aspects of aging as well as clinical interventions. While the primary purpose of the course is to provide a theoretical and empirical basis for understanding the aging process, we will also discuss political and social issues in aging.
208.504 한국지리연구 3-3-0

**Studies in Geography of Korea**

한국을 지리지학적 관점에서 총체적으로 설명하는 방법을 도색한다. 특히, 한국의 정치, 경제, 사회, 문화적 특성에 관한 핵심적 주제들을 선정한 뒤, 나열적 지리학적 연구자들이 극복하고 다양한 주제간의 상호관련성을 포착하여 핵심적 주제들을 간단명료하고 심층적으로 설명할 수 있는 지리지학적 연구방법을 탐색한다.

In this course, the participants are encouraged to develop a methodology for the explanation of Korea with a holistic regional geographical perspective. Especially, vital issues related to Korean political, economic, social, and cultural characteristics shall be determined, and efficient research methods to overcome chorological approach and to find the inter-relationship amongst various factors in order to explain the fore-mentioned issues in a simple but profound way with a regional geographical perspective.

208.505A 도시지역정책연구 3-3-0

**Studies in Urban and Regional Policy**

근대화와 시구화의 단선적 경로를 따라간다. 지리학적 배경이론을 분석하고, 이를 바탕으로 우리에게 바람직한 지역정책의 이론과 지리학적 가치를 인식하고 발전 이론과 접목시킬 필요성이 제시되고 있다. 본 강좌에서는 이러한 인식 하에 첫째, 기존 ‘법령이론’의 비판과 ‘문화적’ 가치의 점검이 이루어지는 과정과 그 내용을 검토하며, 둘째, 이를 바탕으로 우리에게 바람직한 지역정책의 이론과 지리학적 가치를 탐구하고자 한다. 수업 진행방식은 논의, 지역정책의 이론과 실제에 대한 주요 주제에 대한 이해를 통해 해석적 지리적 연구를 탐구하고자 한다. 수업의 전반부에는 지역정책의 이론과 실제에 대한 다양한 주제들을 선정한 뒤, 주요자에 대한 비판적 독해와 심층토론을 통해 이 문제에 대한 이해를 심화시킨다. 후반부에는 수업의 주제와 관련된 내용으로 기존에 여념없이 주로 지리학적의 평가와 비판에 관련한 보고서(논문)를 작성 발표한다. 이를 둘러싼 토론을 통해 이론을 현상에 적용해보고 비판과 실천능력을 함양한다.

Recent research suggests that earlier theories of regional development are simplistic and misguided in the way they equate development with Modernization" and “Westernization.” Such accounts fail to consider social and economic diversity in developing countries and important factors such as race, gender and culture. Reviewing these criticisms and their implications, the course explores alternative regional policies and their ultimate objectives.

208.507 계량지리학습습 3-2-2

**Quantitative Geography**

지리학연구에 필요한 계량분석법들을 익히고, 대학원 석사과정과 박사과정 학생들이 각각 필요한 분야의 문제를 이해하고 독자적으로 연구를 수행하는 능력을 기르는 것을 목표로 한다. 학부수준의 기초 통계학을 익히고자 한다. 다중회귀분석 등 다변량 통계적 접근 방법에 따라 문제를 해결하고자 한다. 연구에 필요한 자료를 조사하는 방법과 자료의 해석 능력을 갖추도록 하는 데 역할을 한다.

This course prepares students in the Master and Ph.D. programs to useistance a core set of advanced analytic methods. It trains them to critically review quantitative geographic research literature, and allows them to design and carry out independent empirical studies of their own. Courses on statistics and/or quantitative methods at the undergraduate level are prerequisites. The scope of the course includes multivariate statistics, numerical modeling, and geo-statistics. The sub-topics may vary depending on the instructor and semester, and as such students may take the course more than once. A series of intensive lab exercises accompany the lectures.

208.514A 기후환경 변화세미나 3-3-0

**Seminar in Global Climate and Environmental Change**

기후의 기후, 기후 변화를 전반적으로 살펴보고 미래에는 환경이 어떻게 변화할가를 인지하는 데 도움을 준다. 기상, 바다와의 상호작용, 화산활동, 대양동역 변화, 인간의 객관적, 이론적, 기후 변화를 설명하고 기후변화 대비 연구와 실천 능력을 키우는 데도 도움을 준다. 기후와 생태계의 변화가 자연의 것인지 아닌지에 대한 인지와 요인에 따른 것인지 구분할 수 있는 능력을 키우고 변화하는 환경에 인간은 어떻게 대처해야 할지를 지도한다.

We will explore global climate and environmental change in the past and discuss likely future environmental change. Topics will include the role of air-sea interactions, volcanic eruptions, solar variability, human activities, etc. in climate change. Then, how climate changes did and will affect human societies will be discussed. This seminar will enhance students’ capability to distinguish between natural and human-induced climatic and biotic changes. We will also discuss how to deal with changing environment.

208.515A 공간사회와사사세미나 3-3-0

**Seminar in the History of Spatial Thoughts**

한국지리학과 협력관계의 사조를 주요 작품을 중심으로 살펴보고 한국의 지리학 연구추세와 세계지리학 연구추세와의 관련성을 파악한다. 지리학연구자들의 방향은 사회의 변화나 다른 학문분야의 주제와 어떻게 연결되어 있으며, 그 연구에 관심을 쏟는 과학적, 사회학적, 정책적, 실용적 의미에 관한 토론을 통해 학문의 서열을 파악하고 그 연구의 조정적 요인에 대한 이해를 함양한다.

This course helps students understand the philosophies of modern Geography and spatial studies, and the relationship between the geographical studies of Korea and the world. It explores how the direction of geographical studies is associated with the social changes and the trends of other academies. By analyzing classic masterpieces of Geography, students understand how the social atmosphere at that time and the individual life of authors are reflected in the works. Furthermore, this course considers the potential trends of Geography in the future and seeks to find the way Korean Geography can contribute to the world of the geographic academy.

208.516 지역연구방법론 3-3-0

**Methodological Issues in Regional Studies**

한 지역에 대한 계계적이고 종합적인 이해는 본래 지리학이 주

학점구조는 "학점수-주당 강의시간-주당 실습시간"을 표시한다. 학점수는 "credits"; the second number means 'lecture hours per week'; and the final number means 'laboratory hours per week. 15 weeks make one semester."
A systematic and comprehensive explanation of a region is one of the major goals geographers have long pursued. The methodologies to achieve this goal have developed diversely in terms of historical periods and academic schools. This course is designed to review how the methodologies in Regional Geography have changed within the framework of geographical development, detecting usefulness and shortcomings of different methodologies, and eventually coming to geographical research.

Seminar in Remote Sensing

This seminar is for graduate students who have completed introductory Remote Sensing courses. Students review recent literature of Remote Sensing with respect to both theoretical and technological innovations. The topics include new horizons of remote sensing via new sensors and the data they capture, accuracies, image classification, integration of GIS/GPS and RS, image database, and a variety of domain-specific analysis modules. Term projects are assigned to familiarize students with the procedures of remote sensing applications.

Seminar in Cartography

This is an advanced cartography course dealing with topographic research.

Seminar in Geographic Information Science

This course outlines the application of the Geographical Information System on environmental topics: climate, landform, soil and biological phenomena. It will help students systematically learn the usage of GIS and RS techniques. Students study: (1) how one can predict the change of natu-
eral environments, living environments, and ecosystems, (2) how one can assess the impact of environmental changes, and (3) what actions one can take on predicted environmental changes and their evaluated impacts. Each student is required to conduct a term project using his/her GIS and RS techniques. This will enable them to gain an understanding of the power and limit of these techniques.

208.530 Seminar in Physical Geography

This course concentrates on geographic aspects of the physical environment, the interactions between environmental components, and the impacts of human activity. Topics are selected from associations of natural and human environments representative of the principles of Physical Geography including laboratory and field methods. Issues of wetlands, Agro-Ecology and high mountains will also be discussed.

208.531 Seminar in Geomorphology

This course analyzes and compares case studies from an integrated viewpoint. It breaks from the former detailed approaches based on a specific process. The themes covered in this course are: weathering and Earth's surface material, vegetation and landforms, Hydrology and critical reviews of pre-1970s research.

208.532 Watershed Management

Watershed has been regarded as a flexible spatial unit for the ecosystem as well as the socio-economic system. Students in this course study how water quality is associated with physical geography, land and water use. Fundamentals of Fluvial Hydrology and Geomorphology, watershed assessments and tools are investigated through selected case studies.

208.533 Environmental Geography

Environmental Geography

Watershed management is a key approach to the management of water resources. The course focuses on the application of geographic information systems (GIS) and remote sensing (RS) techniques to the analysis of spatial data. The course covers the basics of GIS and RS, data collection, data processing, and the application of GIS and RS in environmental monitoring and decision making.

208.540 Seminar in Economic Geography

This course analyzes the spatial organization and dynamics of global economic activities. It also investigates the regional changes of Korean economic activities. The major themes of the lectures and discussions will be the analysis of organizational and spatial changes of industrial structure and spatial organization and examining locational policies for regional development through analyses of the processes of regional and global evolution of specific economic activities such as producer services and direct foreign investments.

208.541A Seminar in Spatial Optimization

Spatial Optimization

This seminar is designed to examine recent developments in research and methods on mathematical programming and spatial optimization for supporting spatial decision making such as, public and business site selection, urban planning, and network planning. In a corresponding semester, a variety of issues including optimization methods, multi-facility location problems, competitive location problems, center problems, network optimization, spatial optimization and GIS, and spatial representation problems will be intensively addressed. Students will be required to implement a final project with actual spatial problems, to see how theory can be applied to practical applications.
208.542 기업지리학 3-3-0

Corporate Geography

경제활동의 핵심주제인 기업을 대상으로 그 활동이 지역에 전개되는 과정과 지역에 미치는 영향을 분석하는 과목이다. 구체적 내용은 다음과 같다. 첫째, 기업조직, 기업의 생산체계, 기업의 전략 등을 첨단하고 이들 변화가 지역경제에 미친 영향을 분석한다. 둘째, 기업의 경쟁력의 형성에 대한 연구 구조 선정 전략과 이에 따른 공간경제 구조의 변화를 분석한다. 셋째, 대기업, 다국적 기업의 전략이 세계경제 및 지역경제의 변화에 미치는 영향을 탐구한다. 넷째, 이론과 테이블지식을 다양하게 산업재구조 및 기업전략을 비교하고 공간경제구조 및 발전방향을 탐구한다. 다섯째, 한국기업의 전략과 산업재구조를 분석하고 바람직한 지역 및 국가의 산업정책방향을 탐구한다.

이 과목은 사회경제구조의 변화에 따른 토지이용 및 주택문제의 변화와 바람직한 발전방향에 대해 연구하는 것을 목표로 한다. 세계화의 전개와 지식정보화의 도래는 토지이용 및 주택정책에 대한 접근방법이 달라질 수밖에 없기 때문이다. 이러한 토지이용과 주택문제의 변화는 문제의식의 전환, 변화의 양태 및 변화원인에 대한 분석, 그리고 해법 및 대안 모색의 과정을 필요로 한다. 수강생들은 이 과목을 통해 심도 있게 토지이용 및 주택 관련 연구에 참여하고, 문제해결 및 논리적, 도시적 전략을 통해 주제의 변화원인과 과정 그리고 대안에 대하여 사례적응을 체험하고 이론, 접근방법, 도구를 적용시켜 분석·연구하게 된다.

This course analyzes both the processes by which regional firms evolve and their impact on those regions. Major themes include: 1) examining these firms' production systems and strategies to analyze how changes therein affect the regional economy; 2) investigating the impact of multinational and large firms' strategies for global and regional economies; 3) investigating industrial restructuring and strategy in Asia Pacific regions and 5) analyzing strategies and industrial restructure of Korean firms as well as devising appropriate directions for regional and national industrial policies.

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208.543B 토지주택론연구 3-3-0

Studies in Land Use and Housing

이 과목은 사회경제구조의 변화에 따른 토지이용 및 주택문제의 변화와 바람직한 발전방향에 대해 연구하는 것을 목표로 한다. 세계화의 전개와 지식정보화의 도래는 토지이용 및 주택정책에 대한 접근방법이 달라질 수밖에 없기 때문이다. 이러한 토지이용과 주택문제의 변화는 문제의식의 전환, 변화의 양태 및 변화원인에 대한 분석, 그리고 해법 및 대안 모색의 과정을 필요로 한다. 수강생들은 이 과목을 통해 심도 있게 토지이용 및 주택 관련 연구에 참여하고, 문제해결 및 논리적, 도시적 전략을 통해 주제의 변화원인과 과정 그리고 대안에 대하여 사례적응을 체험하고 이론, 접근방법, 도구를 적용시켜 분석·연구하게 된다.

This course studies land use, housing issues and its change with the socio-economic transition. According to advances in the globalization and knowledge-based society, the land use pattern and housing problems have been changed, so that various geographical phenomena appear on the spatial system. The land use and housing issues interact with the social structure which contains economy, culture and institution. Consequently, the problematic transformation, the understanding and the analysis to land and housing in pattern, change and process will be the basis of the spatial planning and implementation. Students will review theoretical trends, and examine problems of feasibility and applicability, useful methodologies and models into a case study.

208.544 도시경제지리학 3-3-0

Urban Economic Geography

도시지역에서 이루어지는 경제활동의 입지와 그 변화에 대한 종합적 분석을 통해 도시의 공간경제구조를 이해하도록 하는 과목이다. 주요 연구주제는 다음과 같다. 첫째, 대도시지역 내에서 경제활동의 입지유형과 그 변화를 분석하여 도시공간구조의 형성과 변화를 이해한다. 둘째, 도시의 탄생산업화에 따라 규정상정하는 서비스업의 특성과 공간조직을 탐구한다. 셋째, 대도시지역에서 지역재생 시장과 공간분업의 특성과 변화를 분석한다. 넷째, 혁신환경, 생산 네트워크, 복잡관계 등 도시공간구조를 탐구하고 도시지역 경제활동의 공간조직 및 변화를 이해한다. 다섯째, 지속가능한 도시경제 발전을 위한 방향을 종합적으로 탐구한다.

도시의 탈산업화에 따라 급성장하는 서비스 산업의 특성과 공간조직의 변화를 이해한다. 도시의 탄생산업화에 따라 규정상정하는 서비스업의 특성과 공간조직을 탐구한다. 이 과목은 졸업논문의 제출을 위한 과목이다. 주요 연구주제는 다음과 같다. 첫째, 도시의 탄생산업화에 따라 규정상정하는 서비스업의 특성과 공간조직을 탐구한다. 둘째, 도시의 탄생산업화에 따라 규정상정하는 서비스업의 특성과 공간조직을 탐구한다. 셋째, 도시의 탄생산업화에 따라 규정상정하는 서비스업의 특성과 공간조직을 탐구한다. 넷째, 도시의 탄생산업화에 따라 규정상정하는 서비스업의 특성과 공간조직을 탐구한다. 다섯째, 도시의 탄생산업화에 따라 규정상정하는 서비스업의 특성과 공간조직을 탐구한다.
208.548 Seminar in Cultural Geography

Cultural Geography studies the spatial arrangements and processes of human societies and the environment. This seminar will review the objectives and achievements of recent research in Cultural Geography, including the study of cultural landscapes, cultural ecology, and cultural geographies of leisure. Students will learn about the theoretical frameworks and methodologies used in Cultural Geography research and will be encouraged to critically analyze and discuss key academic papers.

208.549 Seminar in Social Geography

Social Geography is concerned with the spatial arrangements and processes of human societies and the environment. This seminar will focus on the spatial organization of society, including the study of urbanization, rural-to-urban migration, and the effects of globalization on society. Students will learn about the theoretical frameworks and methodologies used in Social Geography research and will be encouraged to critically analyze and discuss key academic papers.

208.550 Seminar in Biogeography

Biogeography is the study of the distribution of plants and animals on a variety of spatial and temporal scales. This seminar will focus on the study of biogeographical processes and patterns, including the distribution of species, the effects of climate change, and the impact of human activities on biodiversity. Students will learn about the theoretical frameworks and methodologies used in Biogeography research and will be encouraged to critically analyze and discuss key academic papers.

208.551 Seminar in Historical Geography

Historical Geography is the study of the spatial arrangements and processes of society over time. This seminar will focus on the changing roles of cities in the 21st century, considering the impact of globalization on urban development and the role of cities in shaping contemporary society. Students will learn about the theoretical frameworks and methodologies used in Historical Geography research and will be encouraged to critically analyze and discuss key academic papers.

208.552 Seminar in Population Geography

Population Geography is the study of the spatial distribution of human populations. This seminar will focus on the distribution and dynamics of human populations, including the factors that influence population distribution and the impact of population change on society. Students will learn about the theoretical frameworks and methodologies used in Population Geography research and will be encouraged to critically analyze and discuss key academic papers.

208.553 Seminar in Geographies of Transportation, Information, and Communication Technology

This seminar will focus on the role of transportation, information, and communication technology in shaping contemporary society. Students will learn about the theoretical frameworks and methodologies used in the study of transportation, information, and communication technology and will be encouraged to critically analyze and discuss key academic papers.
methodologies regarding the geographic implications of transportation and/or information and communication technology. Main themes include transportation and/or information and communication networks, spatial interaction and location-allocation models, transportation and/or information and communication technology and urban development, intranet trips, u-city, cyberspace, accessibility, mobility, and transportation and/or information and communication policies.

208.555  정책지리학세미나 3-3-0
Seminar in Political Geography

The course will review various theories of Political Geography, including nation-states, world systems, and local governments. It will assume a theoretical and empirical approach to the political processes of spatio-political entities in phenomena. It will examine the relationship between spatial and political processes and on developing appropriate methodologies for researching the relationship between spatial and political processes. The course will review various theories of Political Geography and explore their applicability to field research.

208.572B  아시아지역연구세미나 3-3-0
Seminar in Asian Regional Geography

This seminar investigates how Place Marketing Theory has been employed to boost sales and increase image visibility. Seminar topics include place promotion and marketing, strategies of place marketing, urban regeneration, and city governance and polices. This seminar aims to provide students with a general overview of the Asia and Northeast Asian regions surrounding Korea, Japan, China, and Far-eastern Russia. Contemporary political and economic changes are also interpreted in relation to Korea along with the future status of the Asian area in the global world order based on regional geographical perspectives.

208.581A  개발도상국발전문제연구 3-3-0
Studies in Geographies of Developing Areas

This course focuses on major topics in spatio-political processes and on developing appropriate methodologies for researching the relationship between spatial and political phenomena. It will assume a theoretical and empirical approach to the political processes of spatio-political entities including nation-states, world systems, and local governments. The course will review various theories of Political Geography and explore their applicability to field research.

208.582  장소마케팅세미나 3-3-0
Seminar in Place Marketing

This seminar investigates how Place Marketing Theory has been employed to boost sales and increase image visibility. Seminar topics include place promotion and marketing, strategies of place marketing, urban regeneration, and city governance and polices. This seminar aims to provide students with a general overview of the Asia and Northeast Asian regions surrounding Korea, Japan, China, and Far-eastern Russia. Contemporary political and economic changes are also interpreted in relation to Korea along with the future status of the Asian area in the global world order based on regional geographical perspectives.

208.583A  지정학과 공간정치경제 세미나 3-3-0
Seminar in Place Marketing

This seminar investigates how Place Marketing Theory has been employed to boost sales and increase image visibility. Seminar topics include place promotion and marketing, strategies of place marketing, urban regeneration, and city governance and polices. This seminar aims to provide students with a general overview of the Asia and Northeast Asian regions surrounding Korea, Japan, China, and Far-eastern Russia. Contemporary political and economic changes are also interpreted in relation to Korea along with the future status of the Asian area in the global world order based on regional geographical perspectives.

208.584  지표시스템분석론 3-3-0
Analytical Methods for Earth Surface Systems

This course focuses on the application of various theories of Political Geography, including nation-states, world systems, and local governments. It will assume a theoretical and empirical approach to the political processes of spatio-political entities in phenomena. The course will review various theories of Political Geography and explore their applicability to field research.
search objects. This lectures aims to understand the basic concepts to build an earth surface systems, and to be familiar with models with various examples.

208.614  

**Studies In Quaternary Environment**

This course provides special investigation on core themes of business geography and promotion of spatial eye on business based on basic concepts including investment principles, valuation methods, market area analyses, financing of spatial development, FDI strategies and evolution of spatial organization for corporate, intensifying competition of global-local competition under transnational capitalism regime are performed in the course.

208.627A  

**Studies in Business Geography**

This course provides special investigation on core themes of business geography and promotion of spatial eye on business based on basic concepts including investment principles, valuation methods, market area analyses, financing of spatial development, FDI strategies and evolution of spatial organization for corporate, intensifying competition of global-local competition under transnational capitalism regime are performed in the course.
는 급격한 도시화와 사회 및 환경 변화에 대해 스마트시티의 비전이 어떻게 작동할 수 있는지를 살펴봄으로써 스마트시티에 대한 전문적인 이해와 관련 소양을 갖추고자 한다.

As increasing attention to smart cities globally, this course will deal with various theories and discussions around it. Major topics would be discussed as follows; Emerging smart cities and its progress, Main contents of national strategy for smart cities, Possibility of urban planning model for tomorrow city, Smart cities as new urban operational system and strategy, How to collaborate among cutting edge ICT and spatial data within smart cities and their impact on urban space and neighborhood etc. The seminar pursue in depth understanding and knowledge for smart cities as professional researchers, looking at whether the vision of smart cities would work in fields of rapid urbanization, rusty inner cities, lack of urban resources such as house, energy, road and school and environmental changes.
This masters course is for students who took <Social Welfare Statistics 1>. As a main statistical method in analyzing social phenomena, the Regression Model is studied in depth, and basic principles and assumptions of the model are explored. Students are expected to acquire techniques and logic to diagnose and treat problems in applying this model. The Logit Model, Probit Model, and Path Analysis will be introduced afterwards.
This course provides students with a theoretical foundation and methodology for statistics while teaching students to analyze data with a computer statistical package and report results. It covers advanced statistical methods such as regression, discriminant analysis, path analysis, cluster analysis, and part correlation. A basic course in social statistics must be taken prior to this class.

209.730 사회복지, 경제성장, 그리고 소득불평등 3-3-0

Social Welfare, Economic Growth, and Income Inequality

이 과목의 가장 바람직한 모습은 사회복지가 확대되고, 경제성장도 잘 이루어지고, 결과적으로 소득불평등도 줄어드는 것이다. 이 과목에서는 과연 이 세 가지의 목표를 모두 이룰 수 있는가에 관한 논의를 하며, 고심하는 점들이 논의된다.

Welfare increase, economic development and decreased income inequality, these elements, when put together, make the ideal form of social welfare. This course will examine and come inequality, these elements, when put together, make the ideal form of social welfare. This course will examine and discuss the arguments concerning these three aspects.

209.734 사회복지프로그램 평가와 분석 3-3-0

Evaluation and Analysis of Social Service Programs

본 과목의 주목적인 서비스 프로그램을 더욱 발전시키기 위한 방법의 하나로 데이터의 수집, 분석, 그리고 해석법을 고찰하는 과정에 있다. 따라서 양적 통계 방법을 통하여 서비스 수요조사, 서비스 개선, 효과적인 자원분배, 서비스 수행지표분석, 프로그램 평가 등을 다룬다.

This course will explore data collection and analysis as a means of developing service programs. Service demand research, planning, allocation, performance analysis and program evaluation are examined with use of quantitative statistical methods.

209.735 고급사회복지서비스특강 3-3-0

Advanced Topics in Social Welfare Service

이 과목은 사회복지서비스 전공 대학원 박사과정 학생들을 대상으로 사회복지정책과 관련된 특별한 주제에 대해 학생들에게 제공한다. 이 과목은 개설시기마다 다는 주제가 상이할 수 있다. 그러므로 이 과목을 개설할 때에는 항상 주제가 붙는다.

This course, offered doctorate students surveys of special topics concerning social services.

209.736 임상사회복지분야론 3-3-0

Studies in Social Work Fields

다양한 임상사회복지 분야 중 한 분야를 선택, 해당분야의 전문가를 초빙하여 실제적인 실천현장의 습득 및 분석을 목적으로 한다. 이를 위해 해당분야의 중심개념 및 기반론을 검토하고, 중요한 개입전략의 적용과 그 한계점을 인식하는 과정을 경험하도록 한다.

Topics on social work and its practices are selected for an depth examination. Guest specialists will also be invited. Students will learn both the application and limitation of intervention strategies.
209.739  고급임상사회복지특강 3-3-0
Advanced Topics in Clinical Social Work

This course is designed for students who have already completed their coursework and is a preliminary course for writing an academic thesis. Students are required to have sufficient knowledge on their topic of research and to followed their research with a discussion on each project plan.

209.741 사회복지정책세미나나 3-3-0
Seminar in Social Welfare Policy

This course encourages students to select and intensively investigate special topics about social welfare. This course may cover different subjects every semester and may have a variety of subtitles.

209.742 사회복지실천분석론 3-3-0
Analysis of Social Work Practice

This course focuses on the following issues; (1) the aspects and causes of social problems, (2) social problems such as poverty, ageing, health, employment, housing, and social care. The course focuses on the following issues; (1) the aspects and causes of social problems, (2) social policies. Readings include research articles which show up-to-date findings and methodological advances. The course provides an opportunity for students to acquire theories and analytic skills and to apply them to analyzing impacts of social policies.

209.752 고급사회복지정책특강 3-3-0
Advanced Topics in Social Welfare Policy

This course deals with research methods and evaluations of social work, especially in direct service areas. Particularly, we will analyse and evaluate existing research divided according to the nature of the problem, the level of intervention and termination type of crisis, and short-term or long-term intervention.

209.745A 정신정책과표분석 3-3-0
Studies on Social Policies

This course reviews issues in social policies and related research findings. This course examines policies dealing with social problems such as poverty, ageing, health, employment, housing, and social care. The course focuses on the following issues; (1) the aspects and causes of social problems, (2) effects of various social programs, and (3) future direction of social policies. Readings include research articles which show up-to-date findings and methodological advances. The course provides an opportunity for students to acquire theories and analytic skills and to apply them to analyzing impacts of social policies.

209.753 노인복지세미나나 3-3-0
Seminar on Social Welfare Policies in Response to Population Aging

This doctoral course encourages students to select and intensively investigate special topics about social welfare. This course may cover different subjects every semester and may have a variety of subtitles.

209.754 정신보건사회사업세미나 3-3-0
Seminar on Psychiatric Social Work

This course deals with research methods and evaluations of social work, especially in direct service areas. Particularly, we will analyse and evaluate existing research divided according to the nature of the problem, the level of intervention and termination type of crisis, and short-term or long-term intervention.

이 과목은 대학원 박사과정 학생들을 대상으로 한다. 이 과목은 학생들이 자신이 향후 논문을 준비하는 과정에서의 성과를 갖는다. 그러므로 학생들은 자신의 연구주제에 대해 사전에 충분한 학습이 이루어져야 하며, 수업은 수강생별로 연구계획서를 준비하여 발표하고 토론하는 방식으로 이루어진다.

이달의 교과목을 개설할 때에는 항상 부재이 포함되어야 하며, 국외의 최신 연구성과를 보여주는 연구논문을 주로 이용할 것이다.

이 과목에서는 사회정책과 관련된 국내외의 연구성과를 주요 주제별로 조명한다. 이 과목에서는 민간, 노령, 의료, 고용, 고시, 보육/보호 등 다양한 사회정책을 다루는 복지정책을 주요 검토 대상으로 한다. 이 과목에서는 (1) 소득분배와 저출산, 고령화 등 사회문제의 양상과 원인, (2) 다양한 사회정책의 효과, (3) 사회정책의 개별 방안 등의 주제를 포함한다. 교과목의 해답주제에 대해 국내외의 최신 연구성과를 보여주는 연구논문을 주로 이용되는 것을 알 수 있다. 이 과목은 학생들이 사회정책에 대한 이해와 정확한 지식을 습득하고, 그러한 지식을 우리나라 사회정책의 효과분석에 적용하는 연습을 해한다.

이 과목은 대학원 박사과정 학생들을 대상으로 한다. 이 과목은 학생들이 자신의 학위논문을 준비하는 과정에서의 성과를 갖는다. 그러므로 학생들은 자신의 연구주제에 대해 사전에 충분한 학습이 이루어져야 하며, 수업은 수강생별로 연구계획서를 준비하여 발표하고 토론하는 방식으로 이루어진다.

이 과목은 교육과정의 이론과 실무의 연계를 위한 주제를 포함하여, (1) 사회정책의 효과분석에 적용하는 연습을 행한다.

This course provides an opportunity for students to improve basic abilities as researchers, as they will have a chance to solve political problems, evaluate theory, and explore new paradigms.

Based on the understanding of population ageing, this course analyzes positive and negative effects of population ageing, and investigates policies of UN and OECD in response to population ageing. In addition, this course provides students with theoretical frameworks to formulate policies in response to population ageing, reviews related policies in Korea, and examines the desirable policies and programs.

이 과목은 사회복지정책학의 이론과 이슈, 그리고 한국의 현실에서 필요한 주제를 선정하여 관련된 이론 및 정책들을 정리 평가하고 새로운 이론이나 정책 모델을 도출한다. 이를 통해 정책적, 문제의 인식, 이론적 평가, 새로운 페라미엄이나 이론의 모색과 같은 연구자로서의 기본능력을 제공할 수 있는 기회를 제공한다.

본 과목은 인구고령화 현상에 대한 기본적 이해 위에 인구고령화의 부정적 및 긍정적 영향을 분석하고 UN과 OECD의 인구고령화에 대한 정책을 교육으로도 소득보장, 의료보장, 주거보장 및 사회서비스 보장, 고용USART, 고령화 관련 사회적 지비재, 정책 수립과 관련 정책으로 구분하여 검토한다. 그리고 고령사회에 대응하는 정책의 개발은 이론적 인식을 제시하고 이를 근거로 기존의 우리나라의 인구고령화 대응책 전반을 검토한 후 노인복지 정책을 분석하여 고령화사회에 대응하는 바람직한 노인복지 정책의 방향과 프로그램을 모색한다.

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In order to develop evidence-based psychiatric social work, psychiatric social workers and researchers should be specific with related theories and research methods. With these in mind, the goals of the course aim to cover various topics related to mental health issues as follows: (1) causes of mental illnesses, diagnoses, treatment, and rehabilitation; (2) related theories and research methods; (3) contemporary men-
physical health services and future directions of psychiatric social work in Korea, (4) mental health disparities.

209.756 Development of the World

Social Development of the World

This course is designed for graduate level students with an aim to assist students to gain understanding of the importance of social development and its numerous institutions for society over the course of history. The course will provide fundamental theoretical and practical knowledge on topics related to social development in developing and developed countries around the world, including Europe, Asia, Africa, and the Americas.

209.758 Ecological Welfare

Theories of Ecological Welfare

This course will address the theoretical framework of ecological welfare as a new paradigm of social welfare. Neo-liberal welfare policy, which depends on the axes of development and employment, has many limitations on handling the changed labor market in modern capitalist society and various crises. In order to explore the possibility of the theory of ecological welfare as an alternative to neo-liberal welfare policy, this course introduces a philosophical background of ecological welfare, representative theories and their policy options. This class covers theory of ecological development, social ecology, eco-marxism and the theory of deep ecology. Moreover, this course also explores the possibilities of basic income, work time reduction, LETS and Eco-Taxation as a policy alternatives.

209.759 Human Development in Social Work

Theories of Human Development in Social Work

This course is to provide graduate students in social work a theoretical foundation on human development in social science over the life course. The course will provide an overview of a broad range of theoretical perspectives from a variety of fields. Normative change as well as individual deviations in the developmental processes will be theoretically discussed. In addition, the course aims to enhance students’ ability to 1) utilize the core components of developmental theory to inform social work research, 2) examine the recent trends and current issues in human development research, 3) derive implications of these theories on social work research, practice, and policy.

209.760 Theories of Welfare State Strategies

Study of Loss and Grief in Human Life

This course will address the theoretical framework of human loss and grief from a culturally and philosophically diverse perspective. Students will be provided with information about how humans grieve and how grieving is affected by type of loss, socioeconomic and cultural factors, individual personality and family functioning. Attention is focused on life span development and the meaning of death and loss at different ages. Various types of loss will be discussed from an individual, family, and socio-cultural perspective. Coping and resiliency in loss are explored, emphasizing the diversity of human response and focusing on the significance of social groups in integrating loss.

M131.00100 Welfare State Strategies

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her welfare state we need to have experts who understand politics of welfare and can design a sustainable strategy of welfare economy. To meet these purposes we will start with theoretical as well as methodological issues of the welfare state studies. In addition to this, we will end up with practical issues about strategical policy-making in the context of students’ own field of policy areas.

Reading and Research

This is a component course for students to develop their dissertation. In this course, students are offered time to discuss with supervisors their thesis, source material, and the research methodology of their dissertation.

Social Welfare Research Methods: Theory and Practice

This course is designed to augment and fine tune what students know about designing and executing scientific research. It will explore various issues related to designing scientific research, including problem formulation, the development of conceptual frameworks, selection of research questions, hypothesis development, justification of the research study, research designs, instrument construction, measurement issues, sampling procedures, and ethical issues involved in research. Emphasis will be placed on the application of research methods, understanding of the tradeoffs of various options. Special topics to be covered include balancing rigorous scientific methods with ethics, and feasibility of answering important questions for social work practice and social welfare policy. Class discussion will also involve developing students’ own research proposals and critiquing their own and others’ research, including published literature in peer-reviewed journals.

Poverty, Inequality, and Social Policy

Poverty, Inequality, and Social Policy provides a graduate level introduction to the study of income (and other economic resources) distribution and related social policy. The readings and discussions cover levels of inequality and poverty, their changes over time, causes of varying inequality and poverty, and issues in relevant social policy. Empirical studies illustrate how researchers have applied theoretical model and research methods to the study of poverty, inequality, and social policy.
This compulsory course introduces basic principles of scientific research and provides research experience for students. Specifically, it reviews and discusses various topics such as characteristics and procedure of scientific research, conceptualization and measurement, scales and indexes, typical data gathering methods in empirical communication research, statistical analysis of data, etc.

Critical Theories of Communication

This course is to survey broad range of critical communication theories in the context of global and local societies. Students will have chances to reflect and apply theoretical concepts to the issues and problems they are interested in. In addition, strong emphasis will be laid on training of thesis writing.

Media Industry and Policy Seminar

This course examines different topics every year by introducing recent theoretical development and issues in communication studies. Previous topics include discourse analysis, communication policy, pragmatics, and the public sphere.
본 과목은 한국의 과거 언론현상과 언론사상에 대한 역사적 이해와 설명을 제공한다. 또한 현재의 언론현상에 대해 역사적, 이론적, 현실적 관점에서의 이해를 확대하는 것이 본 과목의 목표이다.

이 과목은 정치 커뮤니케이션 연구의 영역에서 시각적, 역학적, 정책적, 사회의 시각에서 학습의 방법론적 도구를 제공한다. 특히 정치적 메시지의 전달, 표지, 도표, 사진, 음성 등의 다양한 매체를 활용한 연구를 위한 전략을 제공한다.

이 과목은 전문적 연구를 수행할 수 있는 자료 분석능력을 함양하고 나아가 필요한 통계법을 습득한 능력을 키우기 위해 커뮤니케이션 연구영역에서 가장 많이 쓰이는 주요 통계방법을 이해하고 주요통계기법의 활용방법을 익힌 다음, 실제 자료분석을 통해 확인한다.

본 과목은 한국의 과거 언론사와 언론사상에 대한 역사적 이해와 설명을 제공한다. 또한 현재의 언론현상에 대해 역사적, 이론적, 현실적 관점에서의 이해를 확대하는 것이 본 과목의 목표이다.

The course aims to provide historical understanding about the practice and thought of Korean journalism. Also discusses historical and ideological implications of various media issues in contemporary Korean society.

이 과목은 정치적 메시지의 전달, 표지, 도표, 사진, 음성 등의 다양한 매체를 활용한 연구를 위한 전략을 제공한다. 특히 정치적 메시지의 전달, 표지, 도표, 사진, 음성 등의 다양한 매체를 활용한 연구를 위한 전략을 제공한다.

The course aims to provide historical understanding about the practice and thought of Korean journalism. Also discusses historical and ideological implications of various media issues in contemporary Korean society.
pected to analyze the relationship between the press and the state as well as the capital, based upon their knowledge of communication theory and methods. Also reviews the role of news agencies, social characteristics of news, process of gate-keeping, professionalism and socialization of reporters, etc.

211.657 커뮤니케이션정책론 3-3-0

Communication Policy

본 과목에서는 사회적 커뮤니케이션을 매개하는 주요 매체들과 관련된 기본적인 정책목표, 정책기구 및 수단을 살펴보고자 한다. 최근 한국 사회의 주요 커뮤니케이션 정책 사례들도 논의될 것이 다. 새로운 사회적 커뮤니케이션의 양태들이 가지는 다양한 정책 문제들을 분석해 놓으면서 학생들은 사회적 의사소통양식의 바람직한 상태는 무엇이며 이를 어떻게 설립할지에 대한 비판적 안목을 기울일 수 있을 것이다.

This course introduces the basic policy objectives, policy organizations and policy measures on the major communication media. This class will also go over specific communication policy cases in Korea. Through analysis of the various policy problems that arise from the new communications practice, students will be able to refine critical viewpoints and treatments, conducting aural and textual analysis. Qualitative research is research that focuses on understanding, rather than predicting or controlling phenomena. The qualitative method features include: developing research ideas and treatments, conducting aural and textual research in general, ethnography study and specialized archival research. Over the course of the semester, we will examine some of the main methods used by qualitative researchers in the social sciences such as participant observation, interviewing and historical analysis.

211.658A 질적연구방법론 3-3-0

Qualitative Research Methods

이 과목은 메스릴 연구에서 필요할 절적 연구방법을 가르치는 데 주목적이 있다. 절적 연구방법은 사회현상을 관찰하거나 예측하는데 있지 않고 그 자체의 품질을 이해하는 방법이다. 절적 연구방법에는 구체적으로 연구주제와 생성 처리, 구술나 문헌 조사, 민속지적 연구, 그리고 특정 아카이브의 분석기법 등이 다. 그 밖에 이 과목에서는 참가관찰방법, 심층 인터뷰 기법, 역사적 연구방법 등도 취급할 예정이다.

This course is intended to provide the student with the basic skills needed to do qualitative research in mass communication research. Qualitative research is research that focuses on understanding, rather than predicting or controlling phenomena. The qualitative method features include: developing research ideas and treatments, conducting aural and textual research in general, ethnography study and specialized archival research. Over the course of the semester, we will examine some of the main methods used by qualitative researchers in the social sciences such as participant observation, interviewing and historical analysis.

211.659 컴퓨터 매개 커뮤니케이션 연구 3-3-0

Studies in Computer-Mediated Communication

본 과목은 컴퓨터 매개 커뮤니케이션 현상과 관련된 다양한 이론과 실제 연구를 조망하는 것을 목표로 한다. 특히 사람들이 테크놀로지의 발달에 따른 중대한 사회적, 세속화 현상의 인간 커뮤니케이션 방식을 어떻게 이해하며, 다양한 매체의 속성에 따라 커뮤니케이션의 재현 및 결과는 어떻게 달라지는가를 집중적으로 살펴보고자 한다. 구체적으로 컴퓨터 매개 커뮤니케이션 환경에서 아래와 같은 현상이 어떻게 발전되며 발생하는지를 연구할 것이다: 인위의 성차(性別), 가상의 자아개성, 대인 커뮤니케이션에서 자기표현과 불확실성의 감소, 사회적 스테레오타입, 집단 의의 결합과 집단 승용 효과, 인터넷 상의 사회적 네트워크 형성, 컴퓨터 네트워크에 의한 지지적 협업 등이다. 기말 과제로 학생들은 독자적인 연구문제를 개발하고 이를 실증적으로 검증할 수 있는 연구를 다자인하게 될 것이다.

This course is designed to provide an overview of scholarly research and theories on computer-mediated communication (CMC), focusing on how people use this relatively new form of human communication and how various characteristics of the medium affect the processes and effects of communication. Topics include, but are not limited to: gender and language, virtual self-identity, self-disclosure and uncertainty reduction, social stereotyping, group decision-making and group-induced opinion shift, social network, computer-supported cooperative work (CSCW), and so on. Based on the readings and discussions, students will be asked to formulate their own research question and design a study to address it in an empirical manner.

211.661 문화콘텐츠와 커뮤니케이션 3-3-0

Understanding the Market for Information, Communication, and Entertainment

기술후, 사회적인 변화로 인해 미디어가 글로벌화되어나가고 더불어 소비의 '엔터테인먼트 산업' 혹은 '콘텐츠 산업'이라고 불리는 부문에 대한 관심이 낮아지지 않고 있다. 미디어 산업이 가진 특수성, 독자성, 시장성을 기반으로 하여 속속 새로운 문화를 고리할 때 커뮤니케이션 현상에 관한 사례가 콘텐츠 산업의 작동에 관련해 많은 시사점을 던질 수 있다. 이 과목은 문화콘텐츠의 생산과 유통 과정에 관한 산업의 전체적인 기본 원칙과 세부적인 경우별 분석을 바탕으로 탐구한다.

With globalization and commercialization trend in media industry, the demand for theoretical and practical knowledge on the production and consumption of media entertainment products and services increases. Understanding market for information, communication, and entertainment requires an interdisciplinary approach encompassing media, culture, communication, and industrial economics among other things. Through lectures and discussion on cases, this course offers an introductory overview on the issues that cultural industry faces today. The topics include production of creativity, taste formation and transfer, consumption and sharing of media products, industrial infrastructure of creative industry, and attention economics.

211.662A 탐사 저널리즘과 사회정치 분석 3-3-0

Investigative Journalism & Socio-political Issues

본 강좌는 미국 중심의 탐사 저널리즘, 뉴 저널리즘의 고전적 보도기법과 문헌을 검토한다. 이와 동시에 언론과 사회정치적 현상의 관찰성과 근본적 보도사례를 기준으로 탐구한다. 또한 한국 언론에서의 탐사보도사례를 시사적 배경 및 주요 이슈와 관련해 논의한다. 그림으로써 탐사 저널리즘, 뉴 저널리즘의 성립 과정과 언론사적 배경, 학술적 원리, 보도의 기준과 기법을 연구, 분석한다.

This course will mainly focus on the analysis of American Investigative Journalism and New Journalism. Readings will cover a wide range of classical cases of investigative reporting and new journalism, based on which the relationship between journalism and socio-political issues can be analyzed.
This same principle will be applied to the cases of investigatory reportings in Korean journalism. In addition, philosophical principles and the methods and techniques of investigative and new reportings will be analysed.

211.665 미디어 연구세미나 3-3-0

**Special Topics in Communication Research**

This course offers graduate-level seminar on special topics related to current media environment and its impact on individual and social life. Potential topics may include Theories on human relationship and evolution of media system and Network Communication, for example.

211.666 여론조사의 이론과 실제 3-3-0

**Public Opinion Polling: Theory and Practice**

This course will concentrate on developing an understanding of quantitative survey research. Topics covered will include the proper uses of opinion polls, methodology and survey design, analysis of poll results, drawing conclusions and recommendations from polls, and ethical issues in polling. It will also touch upon opinion mining techniques using the social media. Students will complete a political survey with a nationally representative sample and analyze the results.

M1312.001700 커뮤니케이션 능력과 미디어 리터러시 3-3-0

**Children, media, and media literacy**

The course will focus on the analysis of visual culture in the context of media literacy, and explore the ways in which media images and texts shape our understanding of the world.

211.668 커뮤니케이션 철학과 사상 3-3-0

**Classical Literature of Philosophies and Thoughts of Communication**

This course aims to a critical analysis of classical literature of eastern and western philosophies and thoughts of communication. Readings for this course will be focused on as well as social theories addressing the key problematic issues of communication theories, such as “humanity and communication,” “communication as social and political processes,” and “communication and civilization.”

211.669 문화연구와 영상방법론 3-3-0

**Cultural Studies and Visual Methods**

This course aims to a critical analysis of classical literature of eastern and western philosophies and thoughts of communication. Readings for this course will be focused on cultural studies and visual methods in the context of media literacy, and explore the ways in which media images and texts shape our understanding of the world.
211.670  

**election campaign**

This course deals with the analysis of visual texts. Students will examine what visual texts are made of and learn how to analyze them. Based on structuralist and more traditional methodologies, students will have an opportunity to analyze actual texts, such as newspaper articles, books, TV dramas, and movies. Since visual texts allow a broader range of interpretations as compared to verbal texts, students are strongly encouraged to consider various perspectives when analyzing visual texts.

211.671  

**Personal connections in the networked media**

This is a graduate seminar course on mediatization and the new communication technologies among others. Currently mankind is entering the Information Age as a result of new communications media. In this class, students will study the technological characteristics of the new media and their possible effects on society and civilization. Topics include the digital revolution, channel, networking, changes in transmission methods, and wired/wireless/packaged communication technologies among others.

211.706  

**Studies in Visual Communication**

This course deals with the analysis of visual texts. Students will examine what visual texts are made of and learn how to analyze them. Based on structuralist and more traditional methodologies, students will have an opportunity to analyze actual texts, such as newspaper articles, books, TV dramas, and movies. Since visual texts allow a broader range of interpretations as compared to verbal texts, students are strongly encouraged to consider various perspectives when analyzing visual texts.

211.708  

**Studies in New Communication Technologies**

This course deals with the analysis of visual texts. Students will examine what visual texts are made of and learn how to analyze them. Based on structuralist and more traditional methodologies, students will have an opportunity to analyze actual texts, such as newspaper articles, books, TV dramas, and movies. Since visual texts allow a broader range of interpretations as compared to verbal texts, students are strongly encouraged to consider various perspectives when analyzing visual texts.

211.714  

**Seminar in Communication Research Methods**

This course deals with the analysis of visual texts. Students will examine what visual texts are made of and learn how to analyze them. Based on structuralist and more traditional methodologies, students will have an opportunity to analyze actual texts, such as newspaper articles, books, TV dramas, and movies. Since visual texts allow a broader range of interpretations as compared to verbal texts, students are strongly encouraged to consider various perspectives when analyzing visual texts.

211.715  

**Studies in East Asian Media**

This course deals with the analysis of visual texts. Students will examine what visual texts are made of and learn how to analyze them. Based on structuralist and more traditional methodologies, students will have an opportunity to analyze actual texts, such as newspaper articles, books, TV dramas, and movies. Since visual texts allow a broader range of interpretations as compared to verbal texts, students are strongly encouraged to consider various perspectives when analyzing visual texts.
Digital Culture

This course is designed to help students understand principles and characteristics of digital culture as a new realm of visual culture. This course aims to give theoretic basis to various forms, such as films, internet and video games. In this seminar, students explore various research topics and social implications of ancient rhetorical considerations, and social implications of ancient rhetorical considerations, and social implications of ancient rhetorical considerations, and social implications of ancient rhetorical considerations. Based on the understanding of these assumptions and considerations, this course raises questions about rhetorical culture and its impacts on communicative conditions of democratic citizenship.

Rhetoric and Democracy

This seminar explores theoretical assumptions, practical considerations, and social implications of ancient rhetorical theories in relation to political practices in democratic societies. Based on the understanding of these assumptions and considerations, this course raises questions about rhetorical culture and its impacts on communicative conditions of democratic citizenship.

Studies in the Media and Democracy

한국사회 정치사회적 변화와 커뮤니케이션 환경의 변화가 한국민주주의에 미치는 영향을 개인, 집단, 제도적 수준에서 검토한다. 검토의 대상은 디지털 미디어 이용과 민주화에 관한 연구이므로, 이러한 일론, 방법론, 기존의 현대 민주주의에 대한 인식을 고찰한다. 대대라의 해석을 토대로 해석, 현대 설득이론에서의 커뮤니케이션 이론들인 현대 민주주의의 핵심 문제에 대한 합의를 논의한다.

This seminar explores theoretical assumptions, practical considerations, and social implications of ancient rhetorical theories in relation to political practices in democratic societies. Based on the understanding of these assumptions and considerations, this course raises questions about rhetorical culture and its impacts on communicative conditions of democratic citizenship.

미디어와 민주주의 연구

This course compares communication phenomena of East Asian societies using student-led international discussions, group studies, and special lectures. Topics include understanding of Chinese, Japanese and Korean media, as well as comparing western and eastern media characteristics.

Digital Culture

본 과목의 목표는 디지털 미디어 문화의 원리와 특성을 이해하고, 디지털문화와 관련된 주요 사회 문화적 쟁점을 다루는 것이다. 디지털문화는 새로운 영상문화 영역으로 급부상하고 있다. 이 과목은 디지털 미디어를 이해하기 위한 이론적 토대를 제공하는 한편, 영화, 인터넷, 비디오 게임 등 다양한 디지털 미디어에 대한 실질적인 쟁점을 논의해 보고자 한다.

This course is designed to help students understand principles and characteristics of digital culture as a new realm of visual culture. This course aims to give theoretic basis to various forms, such as films, internet and video games. In this seminar, students explore various research topics and social implications of ancient rhetorical considerations, and social implications of ancient rhetorical considerations, and social implications of ancient rhetorical considerations. Based on the understanding of these assumptions and considerations, this course raises questions about rhetorical culture and its impacts on communicative conditions of democratic citizenship.

Information Visualization

정보의 과잉 공급으로 개인이 일상에서 접하는 정보의 양을 날고 급증하고 있으며 때문에 개인의 정보 처리 능력을 필요로 다른 기법에 대한 연구가 필요하다. 이 수업에서 학생들은 이론과 실습을 병행하여 정보의 과잉 공급으로 개인이 일상에서 접하는 정보의 양을 날고 급증하고 있으며 때문에 개인의 정보 처리 능력을 필요로 다른 기법에 대한 연구가 필요하다. 이 수업에서 학생들은 이론과 실습을 병행하여 정보의 과잉 공급으로 개인이 일상에서 접하는 정보의 양을 날고 급증하고 있으며 때문에 개인의 정보 처리 능력을 필요로 다른 기법에 대한 연구가 필요하다.

This seminar explores theoretical assumptions, practical considerations, and social implications of ancient rhetorical theories in relation to political practices in democratic societies. Based on the understanding of these assumptions and considerations, this course raises questions about rhetorical culture and its impacts on communicative conditions of democratic citizenship.

Social Network Data Mining and Analysis

소셜 네트워크에서의 public sensemaking 방법에 대해서도 학습한다. Information consumed by each individual has been greatly increased due to information overload. The research on the method and technique that delivers huge amount of information effectively is required. In this course, students will learn the basic theory of information visualization, the method of transforming law data to meaningful representation, and the process of sense-making of the information. Method to collect and analysis of large data sets, information visualization technique, and the sense-making process of the information will be provided in this course. Also, public sense-making through social network will be discussed.

211.72A 정보 비주얼라이제이션

211.725A 소셜 네트워크 데이터마이닝과 분석

211.722 미디어와 수용자연구

Studies in the Media and Audience

미디어와 수용자연구

This course explores theoretical assumptions, practical considerations, and social implications of ancient rhetorical theories in relation to political practices in democratic societies. Based on the understanding of these assumptions and considerations, this course raises questions about rhetorical culture and its impacts on communicative conditions of democratic citizenship.

Rhetoric and Democracy

이 과목은 소셜 네트워크 데이터마이닝의 사용에 대한 구체적인 사료들 및 자료들을 수집하고 이를 정리, 해석하는 능력을 키울 수 있도록 한다.

This course compares communication phenomena of East Asian societies using student-led international discussions, group studies, and special lectures. Topics include understanding of Chinese, Japanese and Korean media, as well as comparing western and eastern media characteristics.
211.726 Software Culture  3-3-0

Software Culture

This course is designed to provide an understanding of software's technical trends and its socio-cultural implications in modern society. Topics include: concept and basic technical principles of software, types of software, theoretical perspectives on software, software and post-human, software and the mode of information, political economy of software, and so on. Based on the readings and discussions, students will be asked to develop and formulate their own concept or theory, and to complete their final term paper.

M1312.001300 Health Communication in Mediated and Interpersonal Contexts  3-3-0

Health Communication in Mediated and Interpersonal Contexts

This course primarily focuses on an examination of the influence of media use for health information acquisition on health outcomes (e.g., health behaviors). We will deal with the following issues: (1) media health campaigns addressing behaviors related to cancer, HIV/AIDS, drug use, obesity and others; (2) theories of health behavior change; (3) issues in designing and evaluating public health communication campaigns; (4) effects of new media use (e.g., the Internet) on health outcomes, etc. Also, this course covers the most recent theories and research in the area of doctor-patient relationship.

211.803 Reading and Research  3-3-0

Reading and Research

This course, students, with academic advisors, discuss and evaluate in depth their references for their.
213.502

Theories in Gender Studies

This course is a basic lecture for graduate students who have a goal of learning a production of feminist knowledge. Students in this course will study feminist theories which will provide a primary basis of gender studies. Course takes its aim at giving an understanding of outlined history of developments in feminist theory and feminist points at issue deployed in it.

213.505

Studies in History of Women

The goal of this course is to study a history and a development of the modern women’s movement and its social aspects of several flows and issues combined. Students in this course study the occurrence and development of the modern women’s movement by examining various issues and aspects of each movement.

213.507

Gender and Class

Gender and Family

213.508

Gender and Policy

The goal of this course is to examine the origin and the development of histories of feminist thought. This course examines various parts of women’s movements that has not been recognized as ‘feminism’ from 18th century through present feminists’ thoughts.

213.511

Feminist Theories on Culture

This course seeks to examine the existing ideas and notions of culture from the views of the feminism, and explore alternative cultural theories centered on women’s experiences and recognitions.

213.513

Research Methods in Gender Studies 1: Quantitative Methods

The goal of this course is to investigate gender issues using qualitative research methods.

213.514

Research Methods in Gender Studies 2: Qualitative Methods

The goal of this course is to examine the origin and the development of histories of feminist thought. This course examines various parts of women’s movements that has not been recognized as ‘feminism’ from 18th century through present feminists’ thoughts.

213.515

History of Feminist Thought

Gender Policy and Modern State

The goal of this course is to examine the origin and the development of histories of feminist thought. This course examines various parts of women’s movements that has not been recognized as ‘feminism’ from 18th century through present feminists’ thoughts.
Students in this course will study feminist reviews of the modern state, policy and social welfare programs. They will examine the influence of the state’s policies on gender relations and search for alternative approaches. Students will also understand the political process of policymaking and suggest possible improvements and alternative plans. (ex: <Welfare State and Gender Policy>, <Democratic Politics and Gender Policy>, <Gender Governance>, <Community and Gender Policy> etc.)

213.602 성과 법 3-3-0

Gender and Law

Students in this course will study feminist reviews of the modern state, policy and social welfare programs. They will examine the influence of the state’s policies on gender relations and search for alternative approaches. Students will also understand the political process of policymaking and suggest possible improvements and alternative plans. (ex: <Welfare State and Gender Policy>, <Democratic Politics and Gender Policy>, <Gender Governance>, <Community and Gender Policy> etc.)

213.609A 여성과 문학 3-3-0

Women and Literature

This course examines women in literature including feminist writings, the status of female writers in history, and the problems they have encountered.

213.614A 젠더, 경제, 노동 3-3-0

Women, Economy and Labor

Students in this course will study the concepts of women's work and social production in feminist view, including issues such as the economic activities of women, sexual discrimination in work place and 'work-life balance' for workers.

213.618 여성주의 문화연구 3-3-0

Studies in Feminist Cultures

This course examines feminists' critics and actual researches in the context of global flows of film, music, art, popular culture, cultural information, etc. This course will be offered additionally every semester selected from specific cultural domain.

213.620 남성성과 젠더 3-3-0

Masculinity and Gender

This course examines and analyzes modern society’s masculinities using various results from the gender studies. This course explores distorted matter of reproduction of masculinity, and seeks alternative and desirable gender relation.

M1316.000200 섹슈얼리티 연구 3-3-0

Feminist Studies on Sexuality

Students in this course will study feminist reviews of the modern state, policy and social welfare programs. They will examine the influence of the state’s policies on gender relations and search for alternative approaches. Students will also understand the political process of policymaking and suggest possible improvements and alternative plans. (ex: <Welfare State and Gender Policy>, <Democratic Politics and Gender Policy>, <Gender Governance>, <Community and Gender Policy> etc.)

M1316.000300 여성학 특강Ⅰ 3-3-0

Special Topics in Gender Studies I

M1316.000400 여성학핵심연구 3-3-0

Intensive Seminar in Gender Studies

Gender Studies is oriented towards interdisciplinary research. This “Intensive Seminar” will help to go through the challenging process of crossing the threshold of the discipline, with collaborative teaching by faculty members of the IPGS.
자연과학대학
College of Natural Sciences
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### Foundation of Natural Science

자연과학의 일반적인 학문성격 및 논리구조를 논의하고 이를 바탕으로 하여 고전역학 및 양자역학에 의한 자연의 역학적 서술 방식, 상대성이론의 기반이 되는 시간 - 공간 - 중력 개념, 엔트로피 개념에 입각한 거시적 변화의 일반이론, 우주 및 생명현상의 성격과 진화에 관한 기본이론들을 체계적으로 고찰한다.

This course discusses general characteristics and logical structures of natural sciences. The course examines the mechanical explanation of nature by classical and quantum mechanics, the concepts of space, time, and gravity according to the theory of relativity, the general theory of macroscopic changes based on the concept of entropy, and the basic theories about the nature of and the evolution of the universe and life.

### Survey of Life Science

본 과목은 진화, 유전, 생식, 발달 등 현대 생물학의 핵심 개념에 대한 폭넓은 이해를 목표로 한다. 이들에 대해 강사를 수강하는 학생들은 생물학의 역사와 현황을 더 깊이 공부할 수 있는 기초 개념을 얻을 수 있으며 현대 생물학을 더 체계적으로 이해할 수 있게 된다. 수업은 전공과목의 강의와 교수의 지도하에 이루어지는 세미나를 통해 진행되며 학생들은 관심 있는 주제에 관해 기말보고서를 제출한다.

The objective of this course is to understand the fundamental concepts of modern biology such as evolution, heredity, sex, and development. This course will help students arrive at a systematic understanding of modern biological sciences and prepare them to an in-depth study of the history and philosophy of biology. Grading will be based on students' participation in seminars and term papers on topics of their choice.

### Advanced Aquatic Chemistry

이 과목은 해수 및 지하수에 녹아 있는 다양한 물질들의 역할을 규명하고, 이들에 대해 강사를 수강하는 학생들은 생물학의 역사와 현황을 더 깊이 공부할 수 있는 기초 개념을 얻을 수 있으며 현대 생물학을 더 체계적으로 이해할 수 있게 된다. 수업은 전공과목의 강의와 교수의 지도하에 이루어지는 세미나를 통해 진행되며 학생들은 관심 있는 주제에 관해 기말보고서를 제출한다.

This course covers the formation process of the earth and the universe, the structure of the earthsystem and universe, trend, methods, results of the research of the long-term and evolving process of the earth environment in the ways of seminars of professor, relevant specialists, presentation of the students, and discussion. This course will introduce the various research area and methods and the fundamentals for the deep and scientific understanding.
3341.501

**Algebra 1**

Groups, rings, fields, Galois theory, solvability of equations, normal subgroups, homomorphisms, isomorphism theorems, rings, modules, ideals, fields, field extensions, algebraic numbers, algebraic closures, Galois extensions, Galois theory, finite fields, Frobenius, cyclotomic fields, group actions, Sylow theorems, permutation groups, linear and matrix groups, Jordan normal form, rational canonical form, symmetry, integral domains, unique factorization domains, principal ideal domains, Euclidean domains, Bezout domains, noetherian rings, primary ideals, localization, Dedekind domains.

3341.502

**Algebra 2**

Continuation of Algebra 1. Field theory, Galois theory, Ring theory, modules, tensor product, Noetherian rings, primary ideals, localization, Dedekind domains, commutative rings, associated primes, localization, completion, valuation rings, valuation ideals, ordered rings.

3341.503

**Real Analysis**


3341.504

**Complex Analysis**

Cauchy's integral formula, Cauchy-Riemann equations, harmonic functions, Taylor series, Laurent series, residue calculus, singularities, the residue theorem, conformal mappings, automorphic functions, Riemann surfaces, analytic continuation, and the Riemann sphere. The course also covers applications of complex analysis to real analysis, and to other areas of mathematics. It is designed for students who have completed a course in real analysis.

3341.505

**Differentiable Manifolds**

Differentiable manifolds are discussed while providing concrete examples. Topics include differentiable structures, tangent spaces, tangent vectors, tangent bundles, vector fields, differential forms, and integration on manifolds. The course also covers applications of differential geometry to other areas of mathematics. It is designed for students who have completed a course in linear algebra.
3341.606 미분기하학 2 3-3-0

Differential Geometry 2

In this sequel to "Differential Geometry 1", this course investigates comparison theorems, submanifold theory, general relativity, holonomy groups, minimal submanifolds, constant mean curvature surfaces, harmonic maps, isoperimetric inequalities, Lagrangian geometry, and relationships between curvature and topology.

3341.607 대수적 위상수학 1 3-3-0

Algebraic Topology 1

This course covers basic topics from algebraic topology including the theory of fundamental group, covering space, and homotopy theories.

3341.608 대수적 위상수학 2 3-3-0

Algebraic Topology 2

As a sequel to "Algebraic Topology 1", this course covers topics such as CW-complex, cohomology, orientation, Poincare duality, and cup product.

3341.611 대수적 정수론 3-3-0

Algebraic Number Theory

This course discusses various number fields, integer rings, ideals, ramifications, Dirichlet's unit theorem, valuations, localizations, and number theory.

3341.612 리대수 3-3-0

Lie Algebra

This course covers semisimple Lie algebras, Cartan decomposition, Weyl's theorem, root systems and classification, Weyl groups, classical simple Lie algebras, universal enveloping algebras, the PBW theorem, representation theory and Verma module, and Chevalley groups.

3341.613 대수기하학 3-3-0

Algebraic Geometry

This course covers the fundamentals of algebraic geometry, including schemes, sheaves, cohomology, and advanced topics in algebraic geometry.

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3341.621 작용소대수 3-3-0

Operator Algebra


3341.622 상수평균곡률곡면

Curvature and mean curvature surfaces, harmonic maps, and isoperimetric inequalities. The course covers Lagrangian geometry and relationships between curvature and topology.

3341.625 조화해석학 3-3-0

Harmonic Analysis

This course covers Fourier analysis, harmonic functions, and applications to partial differential equations. The course provides an introduction to harmonic analysis and its applications.

3341.626 수치해석학 3-3-0

Numerical Analysis

This course covers numerical methods for solving differential equations, optimization, and approximation theory. The course provides an introduction to numerical analysis and its applications.
3341.631 리군론 3-3-0

Lie Groups

해석다양체의 기초, 위상군의 기초적인 성질, Lie군의 Lie대수, 지수사상, Lie군의 표준계, Lie군의 부분군과 상군, 동질공간, 수반 표현, covering군, PBW정리와 Campbell-Hausdorff정리, 커브릿 연합 Lie군의 구조 등을 다룬다.

This course covers basic theory of Lie groups and other topics such as homogeneous space, covering groups, sub-Lie groups, Campbell-Hausdorff’s theorem, the structure of compact Lie groups, and PBW theorem.

3341.633 복소다양체론 3-3-0

Theory of Complex Manifolds

복소수체 상의 다양체가 갖는 특수한 성질을 공부하는 과목으로서 그 내용은 아래와 같다: 복소구조, 복소접평면, 복소부분다양체, 정칙다발, Dolbeault이론, Kaechrer양계, 복소구조의 변형이론, Kodaira의 배경정리 등.

This course covers special properties of complex manifolds. The main topics include: complex structures, complexified tangent bundles, holomorphic tangent bundles, Dolbeault cohomology, Kaeacher manifold, deformation of complex structures, and Kodaira’s embedding theorem.

3341.635 편미분방정식론 1 3-3-0

Theory of Partial Differential Equations 1

Fourier급수와 Fourier적분의 고전이론을 공부하다. 또한 이상코사인 변환, 빠른 Fourier변환, 위브레트 변환과 멜타-레슬루시 해석, 위브레트 변환과 Fourier변환, 상호 및 양상처리, 역문제의 응용 등을 배운다.

In this course students explore classical theories of the Fourier series and Fourier integrals. Additional topics include the discrete cosine transform, fast Fourier transform, wavelet and multiresolution analysis, wavelet transform and the Fourier transform, signal and the image process, and applications to inverse problems.

3341.636 편미분방정식론 2 3-3-0

Theory of Partial Differential Equations 2

<편미분방정식론 1>의 연속과목으로서 비선형편미분방정식, 고정점 방법, 변분법, 상호와 해방방법, 정칙성 문제, 그리고 Navier-Stokes 방정식, Euler 방정식, 비선형 파동 방정식, Einstein의 장방정식 등과 같은 구체적 예들을 배운다.

As a sequel to <Theory of Partial Differential Equations 1>, this course examines nonlinear partial differential equations, fixed point methods, variational methods, methods of upper and lower solutions, regularity problems of nonlinear PDE, and concrete equations - such as Navier-Stokes equations, Euler equations, nonlinear wave equations and Einstein’s field equations.

3341.641 미분위상학 3-3-0

Differential Topology

위상공간의 미분구조를 사용하여 그 성질을 분석하는 방법을 배우는 과목으로, Sard 정리, 횡단성, Euler표수를 배운다.
This course deals with computational aspects of algebraic number theory. First, we learn basic computations including Euclid algorithm, Legendre Symbol, square-root computation, lattice reduction algorithm, and polynomial root finding algorithm. Second, we learn several algorithms for primality tests, integer factorizations, and discrete logarithms computations. Last, we also learn how to compute norm, trace, order, regulator, and class numbers in number fields.
대학원(Graduate School) 수리과학부(Dept. of Mathematical Sciences)

M1407.000300 수리과학의 이해 2 1-1-0 Understanding Mathematical Sciences 2

새로 입학하는 대학원 전기, 후기 신입생들의 경우 세부전공을 정하는데 정보부족으로 인해 적절한 여려움을 겪고 있다. 본 강의는 해석학, 대수학, 기하학, 위상학, 응용수학 등 수학의 다양한 전공을 학생들이 이해할 수 있도록 설명하고 학생들이 세부전공, 나아가 지도교수를 선정하는데 기여할 것으로 기대된다. 수업은 15명의 각 교수가 수업주수 15주에 맞춰 수리과학전공을 설명하는 방식으로 진행된다.

Many new graduate students find difficulty selecting concentration. This lecture explains a variety of majors such as analysis, algebra, geometry, topology, applied mathematics, etc. in order that the students understand them. Furthermore, it is expected to contribute to choose an academic advisor as well as concentration. The class proceeds as every 15 professor accounts for the majors during 15 weeks.

M1407.000400 수학적 알고리즘 1 3-2-2 Mathematical algorithms I

이 과목은 산업수학을 위한 기초과목으로서 현대 사회에서 중요하게 대두되는 수학적 알고리즘 및 그 구현에 필요한 지식을 배운다. 위상 수학적 데이터분석, 컴퓨터 대수 등 중요한 수학적 알고리즘과 관련된 수학 개념과 이러한 알고리즘을 정확하게 구현하는 방법에 초점을 맞춘다. 학생들은 연습시간을 통해 이러한 알고리즘의 실행을 배우게 된다.

This is a foundational course for industrial mathematics and the main goal of this course is to teach students how to develop and analyze mathematical algorithms and how to implement them in practice. The focus is on the mathematical algorithms such as topological data analysis and computer algebra. During the practice sessions students will learn how to implement these algorithms.

M1407.000500 수학적 알고리즘 2 3-2-2 Mathematical algorithms II

이 과목은 수학적 알고리즘 I의 연속 과목으로서, 고급 수학적 알고리즘을 개발하고 분석하며 실행하는 방법을 다룬다. 이 방법들은 암호, 컴퓨터 대수, 기계학습과 신호처리를 포함한다. 연습시간을 통해 이러한 알고리즘의 실행을 배우게 된다.

This is a followup course to Mathematical Algorithms I. The main goal of this course is to teach students how to develop, analyze and implement advanced mathematical algorithms and how to implement them in practice. The methods in this course include computer algebra, cryptography, machine learning and signal processing. During the practice sessions students will learn how to implement these algorithms.
326.512A Theory of Statistics 2

This course covers statistical inference and asymptotic theories. Uniformly most powerful test, unbiased test, likelihood ratio theory are covered. Asymptotic theories, consistency of maximum likelihood estimator and minimum contrast estimator, asymptotic distribution theories of maximum likelihood estimator and its efficiency, Delta method are studied. Asymptotic inference methods including likelihood ratio test, Wald test, Rao test, Pearson’s chi-square test are covered.

*326.621A Seminar in Recent Development of Statistical Theories

The purpose is to organize seminars so that students can present the results of their own research, and invite well-known experts to present their latest research results. The time and place will be announced later.

대학원(Graduate School)
비모수적 함수 추정론 3-3-0

Nonparametric Function Estimation

비모수적 함수 추정법 중에서 주로 커널을 이용한 확률밀도함수의 추정 및 회귀함수의 추정방법과 그 이론을 소개한다. 커널 추정량의 접근적 정의와 분산, 평균량의 선택 등에 대한 이론과 실제 계산 방법 등을 다룬다. 또한, 다차원의 확장도 소개한다.

이 과목은 석사과정 대학원생을 위한 회귀분석 입문과정이다. 생존함수의 추정을 위한 인과적인 방법인 Kaplan-Meier 추정량의 정의 및 여러 성질들을 다룬다. 종분할자료의 분석을 위하여 헤즈메일, log-rank test, Cox의 proportional hazard model과 partial likelihood.

고급생물통계학 3-3-0

Advanced Bayesian Statistics

이 과목에서는 베이지안 통계학의 이론적 배경에 대해서 공부한다. 이 과목에서 다루는 내용은 여러 가지 종류의 noninformative prior, 결정론에서 minimax theory, admissibility와 complete class theorem, 비모수 베이지안 통계, MCMC의 이론적인 배경 등을 다룬다.

이 과목은 석사과정 대학원생을 위한 회귀분석 입문과정이다. 생존함수의 추정을 위한 인과적인 방법인 Kaplan-Meier 추정량의 정의 및 여러 성질들을 다룬다. 종분할자료의 분석을 위하여 헤즈메일, log-rank test, Cox의 proportional hazard model과 partial likelihood.

고급성분석 3-3-0

Advanced Survival Analysis

이 과목에서는 베이지안 통계학의 이론적 배경에 대해서 공부한다. 이 과목에서 다루는 내용은 여러 가지 종류의 noninformative prior, 결정론에서 minimax theory, admissibility와 complete class theorem, 비모수 베이지안 통계, MCMC의 이론적인 배경 등을 다룬다.

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데이터마이닝에서 유용한 여러 가지 도구와 기법을 다룬다. 비모수적 함수 추정법에 대하여도 다룬다. 커널 추정량의 접근적 정의와 분산, 평균량의 선택 등에 대한 이론과 실제 계산 방법 등을 다룬다. 또한, 다차원의 확장도 소개한다.

고급생물통계학 3-3-0

Advanced Bayesian Statistics

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고급생물통계학 3-3-0

Advanced Bayesian Statistics

이 과목에서는 베이지안 통계학의 이론적 배경에 대해서 공부한다. 이 과목에서 다루는 내용은 여러 가지 종류의 noninformative prior, 결정론에서 minimax theory, admissibility와 complete class theorem, 비모수 베이지안 통계, MCMC의 이론적인 배경 등을 다룬다.

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_regression, generalized regression analysis, use of dummy variables, application of analysis of variance, response surface analysis, analysis of mixture experiments, selection of variables, regression diagnostics, biased estimation, nonlinear regression and so on. The prerequisite courses are Statistics and Lab. for basic statistics and linear algebra for matrix theory.

326.725A 고급시계열분석  3-3-0
Advanced Time Series Analysis

일변량 시계열자료의 분석을 위해 시간영역에서의 분석모형인 ARIMA 모형의 설정, 적합, 검정 및 예측 방법과 진동수 영역에서의 Spectral theory 이론을 학습하고 실제자료의 분석을 통해 모형을 수립하는 방법을 배운다.

For the analysis of univariate time series data, ARIMA model fitting is introduced. Through real data analysis, students learn the various techniques in the model identification, fitting, diagnostic checking, and forecasting steps.

326.729A 고급확률론  3-3-0
Advanced Probability Theory

C-공간과 D-공간 위주로 거리공간에서의 확률측도에 대한 weak convergence와 그 응용을 다룬다.

This course covers weak convergence of sequence of probability measures on metric spaces, specially on C-space and D-space.

*326.739A 통계학세미나  3-3-0
Seminar in Statistics

정규 과목에서 다루어지지 않는 새로운 통계학 분야를 세미나 형식으로 진행한다.

This course consists of series of seminars on emerging statistical theory and applications.

*326.746A 확률과정론특강  3-3-0
Topics in Stochastic Processes

마코프 과정의 세미그룹이론, Hill-Yosida theorem, 브라운 운동과 경계치문제, Potential 이론 등을 다룬다.

This course covers semigroup theory in Markov process, Hill-Yosida theorem, Brownian motion and the boundary value problem and potential theory.

326.747 범주형 자료분석  3-3-0
Categorical Data Analysis

범주형 자료를 분석하기 위한 통계기법들을 소개한다. 범주형 자료들은 대개 분할표를 이용해 정리할 수 있기 때문에 분할표를 분석할 수 있는 통계방법을 중점적으로 다룬다. 주된 주제들은 분할표분석, 로그 선형모형, 로지스틱모형이다.

This course provides an introduction for using statistical methods to analyze categorical data. Since categorical data can usually be arranged in a contingency table, this course focuses on using statistical methods to analyze contingency tables. The main topics in this course are contingency table analysis, log linear models, and logistic models.
한 강연을 한다.

The statistics department invites experts to Seoul National University to make presentations on the topics of interest in the area of statistics and its applications.

Advanced Statistical Computing

M1399.000200 고급통계계산 3-3-0

비약 데이터 혹은 대용량 고차원 데이터의 출현으로 현대 통계학에서 계산의 중요성은 과거의 어떤 때보다 더 중요하게 되었다. 이 과목에서는 비약 데이터를 다루는데 필요한 최신의 계산 기법들, 즉 GPU를 이용한 통계계산과 병렬처리를 활용한 통계계산의 이론과 실제를 다룬다.

Statistical computing becomes ever more important with the advent of Big Data or large scale high-dimensional data. In this course, we study the recent statistical computing techniques for large scale high-dimensional data including statistical computing using GPU and parallel computing.
물리학전공(Physics Program)

3342.502 통계역학 3-3-0

Statistical Mechanics

물질의 구조적 성질을 구성원 사이의 상호작용에 의한 혼동현상으로 이해하는 통계역학의 기초를 다룬다. 주요주제로는 통계 물리학의 기본 개념, 분배함수의 열역학량, 고전 및 양자계의 운동, 전개, 상전이 등에 관한 내용과 함께 확률방정식, 운동량의, 수송 현상 등 비정형 현상을 다룬다.

This course covers the basic aspects of statistical physics which purports to understand macroscopic properties of matter as the collective phenomena resulting from the interaction among its constituents. Topics include basic concepts of statistical physics, partition function and thermodynamic quantities, classical and quantum gas, cluster expansion, and the elementary theory of phase transition. Also discussed are topics from nonequilibrium statistical physics such as the stochastic equation, kinetic theory, and transport phenomena.

3342.505 양자역학 1 3-3-0

Quantum Mechanics 1

현대물리학의 연구에 가장 중요한 토대인 양자역학을 대학원 수준에서 기본 개념부터 체계적으로 다룬다. 양자역학 1의 주요 내용은 양자역학의 수학적 표현, 슈뢰딩거 방정식, 퍼텐셜문제, 각 운동량 이론, 스팬, 퍼브리케이션, 계이저 변환과 아르노 프로브 효과, 측정이론과 해석의 문제 등이다.

Quantum Mechanics provides the foundation of modern physics. In this first half of the one-year course, some basic aspects of quantum mechanics is studied at the graduate level. Topics include mathematical representations, Schrödinger’s equation, potential problems, angular momentum, spin, propagator and path integral, gauge transformation and the Aharonov-Bohm effect, and the measurement theory and interpretational problem.

3342.506 양자역학 2 3-3-0

Quantum Mechanics 2

현대물리학의 연구에 가장 중요한 토대인 양자역학을 대학원 수준에서 다룬다. 양자역학 2의 주요내용은 근대알고리즘과 변변 이론 등의 이론방법, 퍼브리케이션, 대칭성, 링크는 일생개념, 원자와 분자, 내비침의 양자이론, 상대론적 양자역학 등이다.

Quantum Mechanics provides the foundation of modern physics. In this second half of the one-year quantum mechanics course, advanced theories and applications for a variety of physical systems are discussed. Topics include approximation methods such as perturbation theory and variational methods, scattering theory, symmetry, identical particles, atoms and molecules, quantum theory of radiation, and relativistic quantum mechanics.

*3342.507 고급실험 3-0-6

Advanced Physics Laboratory

실험물리학에 흥미가 많거나 학부과정에서 물리실험교육을 충분히 받지 않은 대학원 학생들을 대상으로 고급 전자학 실험을 포함한 물리실험의 기본 및 주요 실험기술을 배울 수 있도록 한다. 과목 내용은 학사과정의 중심물리실험과 같은 수준 혹은 상위 수준이며, 실험에 대한 학생들의 기본 소양과 적응력을 기르기 위해 박막 증착, 고주파 전자회로, 교류 측정, 초긴장 온도와 관련된 고전 장비를 다루거나 개인 프로젝트 위주의 실험을 수행한다.

The course is designed for graduate students interested in experimental physics research or for those with little experience in undergraduate experimental courses such as the Intermediate Physics Laboratory. The course will cover basic and advanced techniques (including advanced electronics) used in experimental physics at the level of Intermediate Physics Laboratory or higher. In particular, to enhance the capability of students in experiments, the course will be based on the individual projects or teach the advanced instruments such as thin-film deposition, high-frequency electronic circuitry, ac measurement, rudimentary low-temperature techniques, and others.

*3342.508 물리학특강 3-3-0

Selected Topics in Physics

이 과목은 물리학의 여러 전공영역에 필요한 특정 주제들에 대해 최근의 연구 동향 및 연구 방법을 배우는 것을 목적으로 한다. 예를 들어 물리학 연구에 보편적 유용성을 갖는 특정 이론이 나 고전작이 물리학 실험 방법론, 응집물리학 실험 방법론, 데이터 분석 기법 및 실험 경험론 등을 포함하여 대학원생들이 연구를 수행하는데 직접적으로 도움이 될 수 있는 내용으로 매기기 주제를 변경하여 개설하도록 한다.

This course provides graduate students to learn about the recent trend and development of special topics with a rather broad range of interests. For example, topics can be certain specific theoretical methods useful for wide-range physics, experimental techniques used in high energy physics, various experimental techniques used in modern condensed matter physics, data analysis and statistical treatment of experimental data. The topics may vary semester by semester.

*3342.509 수리물리학 3-3-0

Mathematical Physics

물리학의 전문적 연구와 밀접하게 쓰이는 주요 수학적 방법들 을 실제 사용 예제와 함께 익히는 것을 목적으로 하는 과목이다. 수업 내용은 물리학에 응용이 가능한 기초 해석학, 상미분 및 편미분 방정식, 군이론 (라디수 포함), 미분기하학과 위상수학 개념들과 관련하여 예제와 주 관정도를 선정하여 교수한다.

In this course students will have chance to learn some mathematical tools useful for physics research. From the topics like basic analysis, differential equations (ODE and PDE), group theory (including Lie algebra), differential geometry and topological notions, instructor will select about two topics each semester for concentrated study.

3342.514 고전역학 3-3-0

Classical Mechanics

뉴턴, 라그랑지, 해밀턴에 의해 정립된 역학이론을 고급수준에서 다룬다. 주요내용은 역학의 기본체계, 중력델 공통, 중심이력, 운동, 라그랑지 방정식과 변분원리, 강인계의 운동, 해밀턴 역학, 프라중 관찰, 해밀턴-자코비 이론, 원판 적분계, 고오스 이론 등이다.

The course is intended to discuss the basic framework of Newtonian mechanics, nonlinear oscillations, continuum mechanics, Lagrangian dynamics, rigid body motion, Hamiltonian dynamics, Poisson brackets, Hamilton-Jacobi theory, completely integrable systems, and the theory of chaotic motion.
물질의 전기적 성질을 고전 장이론에 바탕을 두고 다룬다. 주요 내용은 정전기장, 전기장의 이론 및 계계지수론, 유전체, 정상전달에 의한 자기장, 자기체, 핵스템 방정식, 물질 내에서의 맥스웰 방정식 등이다.

The course is intended to discuss classical electromagnetic theory from the viewpoint of classical field theory. Topics include boundary value problems, Green function technique, and applications of Maxwell equations. Macroscopic description of electric and magnetic properties in various materials and applications of Maxwell equations. Macroscopic description of electric and magnetic properties in various materials and applications of Maxwell equations. Macroscopic description of electric and magnetic properties in various materials and applications of Maxwell equations. Macroscopic description of electric and magnetic properties in various materials and applications of Maxwell equations.

This course is a sequel to "Condensed Matter Physics 1", topics like retarded Green's function, propagation of electromagnetic waves within matter, radiation, scattering and diffraction of light, and the motion of charged particles are considered on the basis of Maxwell equations and the special theory of relativity.

이 과목은 응집물질물리학의 핵심 개념을 소개하는 대학원 입문 과목의 2학기 중 첫 번째로 응집물질의 다양한 물리적 성질을 물리학의 기본 원리에서 출발하여 이해하는 것을 목표로 한다. 이 과목에서 다루는 주요 주제는 각자 구조, 각자 진동, 전자 따, 전자, 반도체 등을 포함한다. (※ 수강을 원하는 학생은 <양자역학 1, 2> 및 <통계역학>에 대한 사전 지식이 필요하다.)

This course is the first of a two-semester sequence introducing the most important concepts of modern condensed matter physics at the beginning graduate level. It aims to provide a necessary foundation to understand the physical properties of solids based on fundamental principles of physics. Topics include crystal structure, lattice vibrations, electronic energy bands, metals, and semiconductors. (※ Prior knowledge of physics on the level of <Quantum Mechanics 1, 2> and <Statistical Mechanics> is required.)

이 과목은 응집물질물리학의 핵심 개념을 소개하는 대학원 입문 과목의 2학기 중 두 번째로 응집물질의 다양한 물리적 성질을 물리학의 기본 원리에서 출발하여 이해하는 것을 목표로 한다. 이 과목에서 다루는 주요 주제는 조간체, 자성체, 강유전자, 표면 및 계면 물질 등을 포함한다. (※ 수강을 원하는 학생은 <양자역학 1, 2> 및 <통계역학>에 대한 사전 지식이 필요하다.)

This course is a sequel to "Condensed Matter Physics 1" introducing the most important concepts of modern condensed matter physics at the beginning graduate level. This course provides an introduction to various physical properties of solids aiming to provide a background in basic physical principles necessary for understanding physical phenomena. Topics include superconductivity, magnetism, ferroelectricity, surfaces, and interfaces. (※ Prior knowledge of physics on the level of <Quantum Mechanics 1, 2> and <Statistical Mechanics> is required.)

이 과목은 물리학을 전공하는 대학원생들이 알아야 할 핵과 기 본입사에 관한 개념 및 현상학적인 이해를 제공함을 목적으로 한 다. 핵 및 기본입자를 연구하기 위한 실험 및 이론적 방법의 개 요, 핵 및 기본입자의 종류와 구조, 대칭성과 보존법칙, 직 및 소립 자의 기본 상호작용, 꼬리 모형, 핵의 구조에 대한 모델, 핵 및 입 자 천체물리학의 개요 등을 다룬다. 핵물리 또는 입자물리학 전공 학생은 <핵물리학>, <입자물리학> 과목 수강 이전에 이 과목을 수강할 것을 권장한다.

In this course, students will learn basic concepts and phenomenological aspects of nuclear and elementary particles which every students majoring in physics may well have. The topics covered in this course are experimental and theoretical methods to study nuclei and particles, symmetries and conservation laws in subatomic physics, fundamental interactions among particles and nuclei, quark model, models for the structure of nuclei, and a brief introduction to the relation of nuclear and particle physics with astrophysics.

이 과목은 <양자역학 1, 2> 수강을 원하는 학생들을 대상으로 상대론적 양자역학 및 이차원적 양자역학과 동급 고급 양자역학개념을 제공하고 미해결 문제에 대한 정확한 이해를 도모하는 것을 목표로 한다. 주요 주제는 상대론적 라그랑지안과 디랙 방정식, 꼬리, 케이지체, 배리 위상, 이차원적 양자역학, 하트리-포크 이론, RPA, 그리고 페르미 액체이론 등을 포함한다. (※ 수강을 원하는 학생은 <양자역학 1, 2> 및 <통계역학>에 대한 사전 지식이 필요하다.)

This course is a sequel to "Quantum Mechanics 1, 2" and covers the basic concept of relativistic quantum mechanics and second quantization and provides many body theory and its basic application. Topics include relativistic Lagrangians and Dirac equation, photon, gauge fields, Berry’s geometric phase, second quantization, non-relativistic quantum field theory, Hartree-Fock theory, RPA (random phase approximation), and Fermi liquid theory. (※ Prior knowledge of physics on the level of "Quantum Mechanics 1, 2" and "Statistical Mechanics" is required.)
 물리학의 연구를 수행하는 데 필요한 뿐만 아니라 물리학의 새로운 패러다임으로 등장한 컴퓨터의 사용능력을 배양하기 위한 과목으로서 전반방산의 개념, 기존적인 수치해석의 방법, 컴퓨터로 방법, 데이터 분석의 기초방법 등은 다루고, 컴퓨터와 산업을 연계 방법 등 최신방법들의 입문을 포함한다. 또한 컴퓨터 안전장치의 기본개념을 다루고 컴퓨터방장점의 중요도도 배운다.

This course is intended to improve students’ ability to employ computers for physics research and to properly view them as paradigms of modern physics. Topics include concepts of computational method, basic numerical analysis, the Monte-Carlo method, elementary methods of data analysis, parallel processing, neural network method, basic concepts of computer devices, and solutions of partial differential equations.

### 3342.626A 원자물리학 3-3-0

**Atomic Physics**

이 과목은 원자의 구조 및 관련 기존 현상을 이해하는 데 필요한 기본 이론 및 방법을 공부하는 것을 주목적으로 해서 원자물리학이나 관련된 실험 기법에도 비중을 두어 논의한다. 주요 주제는 수소 원자 및 다전자원자의 구조(에니지 준위 등), 평균장 이론(하트레-포크 이론), 좌우동량이론, 상대론적 수소원자, 미세구조 및 초미세구조, 원자의 전자기적 성질에 의한 효과와 전자기학과 관련 현상, 선형 광학 및 비선형 광학, 양자광학적 현상, 보즈-아인슈타인 초진역계 등을 포함한다.

This course aims for learning basic theoretical tools needed to understand atomic structures and physical processes involving atoms. Some emphasis will be given to laser spectroscopy and experimental methods. Topics include stationary properties of hydrogen and multi-electron atoms (energy levels etc.), mean-field theoretic approach (Hartree-Fock method), angular momentum theory, relativistic corrections to hydrogen atom, atomic fine structure and hyperfine structure, electromagnetic perturbations to atoms and their interaction with electromagnetic waves, linear and nonlinear optics, quantum optical phenomena, and Bose-Einstein condensates.

### 3342.631 입자물리학 3-3-0

**Particle Physics**

소립자의 분류 및 대칭성, 상호작용의 종류 및 주요 특성, 표준모형이나 오기까지의 실질적, 이론적 배경 등 입자물리학의 전반에 걸친 현상론을 심도 있게 논의한다. 역학, 전자기학 및 양자역학에 이미 충분한 소양을 갖춘 학생들을 대상으로 한다.

This course covers the phenomenology of modern particle physics. Topics include the classification of elementary particles and symmetry, fundamental interactions and their properties, and the experimental and theoretical backgrounds of the Standard Model. Prerequisites are Classical Physics, Electrodynamics, and Quantum Mechanics.

### 3342.632 일반상대론 3-3-0

**General Relativity**

일반상대론의 개념, 물리적, 그리고 수학적 기초 배운다. 주요 내용은 군은 시간공간에서의 물리 및 수학적 기초방법, 아인슈타인 방정식과 중요한 물리적 결과, 우주론의 응용 등이다.

This course provides the conceptual, physical, and mathematical foundation of general relativity. Topics include physical and mathematical methods of curved spacetime, Einstein’s field equation and its primary outcome, and application to cosmology.

### 3342.633 액체물리학 3-3-0

**Nuclear Physics**

핵력, 원자핵의 전자기적 성질과 베타 붕괴, 핵 구조 및 핵반응 등 원자핵물리 전반을 심도 있게 다루어 읍력, 전자기학, 양자역학에 이미 충분한 소양을 갖춘 학생들을 대상으로 한다.

This course covers general theory in nuclear physics. Topics include the nuclear force, electromagnetic properties of the atomic nucleus and beta decay, and nuclear structure and reactions. The prerequisites are classical physics and Quantum Mechanics.

### 3342.635 상전이와 임계현상 3-3-0

**Phase Transitions and Critical Phenomena**

상전이 및 임계현상에 관련된 여러 도형계 및 통계역학적 방법을 다루다. 주요내용은 입계주수, 모형계의 정확한 성질, 평균마당 이론, 랜다우 이론, 랜다우-긴뜨브 이론, 금수 전개, 눈금잡이론, 둔화점론, 건드림 전개, 낫수 차원과 무질서 등이며, 통계역학을 이수한 학생을 대상으로 한다.

This course examines how model systems relate to phase transitions and critical phenomena, as well as related methods of statistical mechanics. Major topics include critical exponents, exact properties of model systems, mean field theory, Landau theory, Landau-Ginzburg theory, series expansions, scaling theory, the renormalization group theory, perturbation expansion, low dimensional systems, and disorder. The prerequisite for this course is Statistical Mechanics.

### 3342.637 양자장론 1 3-3-0

**Quantum Field Theory 1**

상대론적 양자장의 기본성질을 표준 양자화 및 급수전개 방법에 따라 논의한다. 먼저 스핀이 0, 1/2, 1인 입자들의 장론적 기술 방법을 배운 후 이것을 바탕으로 양자전기역학과 심도있는 분석을 공부한다. 대학원과정의 <고전물리 1 2> 및 <양자역학 2>를 이수한 학생을 대상으로 한다.

Basic structures of relativistic quantum fields are explained using canonical and path integral methods. Discussion of free fields of spin-0, spin-1/2 and spin-1 is followed by an investigation of quantum electrodynamics(QED). Perturbation theory is examined and then applied to simple scattering processes in QED. Prerequisites are graduate study in classical physics and quantum mechanics.

### 3342.638 양자장론 2 3-3-0

**Quantum Field Theory 2**

<양자장론 1>의 연속으로 주요내용은 양자전기역학에서 고차 삼장효과 및 재규격화, 대칭성의 스스로깨짐 현상, 비가환 게이지 장론의 양자화, 평균장 이론과 그 응용, 표준모형의 장론적 기술, 초대칭성 등이다.

This course is a continuation of <Quantum Field Theory 1>. Discussion topics include higher-order processes in QED,
renormalization, spontaneous symmetry breaking, quantization of non-abelian gauge theory, applications of renormalization group theory, field theory for standard models, and supersymmetry.

Advanced Topics in Nuclei and Particles 1

This course is designed for both masters and doctoral level students who are majoring in nuclear or particle physics. Topics are selected according to curriculum requirements.

Advanced Topics in Nuclei and Particles 2

This course is designed for both masters and doctoral level students majoring in nuclear or particle physics. Topics are selected according to curriculum requirements.

Advanced Topics in Condensed Matter Physics 1

This course is designed for both masters and doctoral level students majoring in condensed matter physics. Topics are selected according to curriculum requirements.

Advanced Topics in Condensed Matter Physics 2

This course is designed for both masters and doctoral level students majoring in condensed matter physics. Topics are selected according to curriculum requirements.

Advanced Topics in Applied Physics 1

This course is designed for both masters and doctoral level students majoring in applied physics. Topics are selected according to curriculum requirements.

Advanced Topics in Applied Physics 2

This course is designed for both masters and doctoral level students majoring in applied physics. Topics are selected according to curriculum requirements.

Advanced Theory on Fields and Particles

This course is designed for both masters and doctoral level students majoring in nuclear or particle physics. Topics are selected according to curriculum requirements.

Physics of Complex Systems

Many generic systems in nature exhibit complexity, characterized by large variability, on the border of order and disorder. Understanding such complex systems, usually possessing frustration together with randomness, offers a challenge in this century. Beginning with relatively simple complex systems in physics, we study diverse phenomena displayed by a variety of complex systems in physics, chemistry, biology, and social sciences. Emphasis will be laid on the universal principles underlying the diversity, probed by means of statistical mechanics and nonlinear dynamics.
String theory is a theoretical framework developed to account for all basic forces of Nature, including quantized gravity. Topics include the basic structures of relativistic bosonic strings and superstrings and their quantization, space-time geometry in string theory, string compactification and connections to the standard model, string thermodynamics and black holes, and AdS/CFT correspondence. (※ Prior knowledge of <General Relativity>, <Quantum Field Theory 1> and <Quantum Field Theory 2> is required.)

3342.669 생물계물리 3-3-0

Biological Physics

DNA, RNA, 단백질, 세포막 등 세포를 이루는 주요 구성성분은 모두 무른 물질(soft matter)로 이루어져 있다. 무른 물질계는 고체물리 과목과정에서 전통적으로 다루어지는 물질계와 구별되는 고유한 특성을 보인다. 이 과목은 생명현상의 물리적 기초를 정립할 수 있도록 세포 내 생명현상을 중심으로 연성물리의 기본 개념을 가르치는 것을 목표로 한다.

All biological materials such as DNA, RNA, proteins, and membranes are classified as soft matter. Compared to hard matter systems, which used to be a traditional topic of condensed matter physics, soft matter systems exhibit unique properties of their own. In this course, the basic concepts of soft matter physics will be provided by taking real biological phenomena as examples.

3342.670 고급 응집물질물리학 3-3-0

Advanced Condensed Matter Physics

이 과목은 전자 간의 강한 상관관계에 의한 물성을 이해하는 이론적 배경을 제공하는 것을 기본 목적으로 한다. 전자 간의 강한 상호작용과 협동현상 등 광범위한 주제를 다루기 위해 이 과목은 "강상관계의 자성" 및 "초전도 및 양자상전이 현상"을 소재목으로 각각 다른 학기별로 개설되는 2군 과목으로 운영된다. "강상관계의 자성"을 주제로 한 강의에서는 다체계 이론의 소재를 통해 강상관계를 기술하는 이론적 방법론을 소개하고 강상관계의 이해에 핵심적인 모델인 허바드, 콘도 해밀토니안 등을 통해서 스토너 이론 및 하이젠베르크 모델 등의 자성 현상에 대해 살펴본다. "초전도 및 양자상전이 현상"을 주제로 한 강의에서는 미시적 초전도 이론 및 현상론적인 상전이 이론을 소개하고 양자 풀 효과와 양자상전이 현상 등을 다룬다. (※ 수강을 원하는 학생은 <양자역학 1, 2> 및 <통계역학>에 대한 전문 지식이 필요하다.)

This course is designed to provide a basic understanding of strongly correlated electron systems. Due to the vast subjects to be discussed, this course will be divided into two parts offered in two semesters with two separate titles: “magnetism in strongly correlated systems” and “superconductivity and quantum phase transition”. The topics of “magnetism in strongly correlated systems” include an introduction of many-body techniques for the description of interacting electron systems such as dynamical mean-field theory, several key models of correlated systems such as Hubbard, Anderson, and Kondo Hamiltonians, and the quantum theory of magnetism. The topics of "superconductivity and quantum phase transition" covers a microscopic theory of superconductivity, Ginzburg-Landau phenomenological theory of phase transition, and quantum phase transition in relation to various physics of strongly correlated electron systems. (※ Prior knowledge of physics on the level of <Quantum Mechanics 1, 2> and <Statistical Mechanics> is required.)
Various subjects in optical observational astronomy are covered including CCD imaging, photometry, spectroscopy, near-IR observation, data reduction, and image processing. Several observational projects are assigned.

**3345.502 프라카천문학 3-3-0**

**Radio Astronomy**

In this course, these three areas are addressed and research activities will be introduced to graduate freshman students, to help them to choose their thesis.

**3342.803 대학원논문연구 3-3-0**

**Reading and Research**

In this course graduate students conduct research related to their thesis.

*"M1419.000200 고급 현대 물리학 특강 3-3-0"

**Seminars on advanced topics in modern physics**

In the last ten years, completely new topics have emerged and are progressing rapidly in modern physics surpassing the conventional boundary. As a result, it is becoming more difficult for our graduate students to compete internationally in this field.

This course focuses on radiational, gravitational, and hydrodynamical processes that occur in astrophysical circumstances. Since the astronomical observations are made by using the light originating from astronomical objects, understanding the radiation mechanism including the radiative transfer is essential. Additionally, since stars and galaxies usually form clusters, many-body dynamics is an area of importance. Moreover, most of the universe is filled with fluid, and therefore, it is difficult to interpret the astronomical phenomena without understanding hydrodynamics. In this course, these three areas are addressed and research activities are conducted.

**M1420.000200 천체분광학 3-3-0**

**Astronomical Spectroscopy**

In this course, several observational projects are assigned.

The professor in charge will check the progress and provide necessary guidance in the class. Grade will be given based on the midterm evaluation on theoretical knowledge and the final on the project presentations on research outcomes.
addition, this course provides how to analyze the spectra from interstellar media such as HII regions and from various galaxies.

3345.505 태양물리학 3-3-0

Solar Physics

CME (Coronal Mass Ejection) are studied in detail. Solar phenomena such as solar flares, eruptive prominences, studies currently conducted for helioseismology and explosive characteristics are discussed. Theoretical and observational active sun are reviewed and their comprehensive physical goals.

3345.506 항성대기 3-3-0

Stellar Atmosphere

The properties of radiation field, the processes of absorption and emission of the radiation, the energy transport in stellar atmospheres are addressed. Students investigate the characteristics of various model atmospheres and synthesize line profiles.

3345.507 성간물질 3-3-0

Interstellar Matter

This course provides an overview of the microscopic processes in the physical properties of the interstellar medium, whose fundamental constituents are electrons, protons, neutral atoms and molecules, heavy element ions, dust grains, cosmic rays, photons, and magnetic fields. Basic principles of quantifying interaction rates among the ISM species are introduced and the principles are applied to observations of the galactic ISM. Observational characteristics of diffuse HII clouds, interstellar dust clouds, dense molecular clouds, HII regions, and super-nova remnants are established and a five-phase model of the ISM is introduced in the context of long term evolution.

3345.508 천문기기 및 실험 3-2-2

Astronomical Instrumentation and Lab.

The principles are applied to observations of the galactic ISM. Observational characteristics of diffuse HI clouds, ionized gas clouds, diffuse neutral gas, and super-nova remnants are discussed. Theoretical and observational studies of the ISM are addressed. The properties of radiation field, the processes of absorption and emission of the radiation, the energy transport in stellar atmospheres are addressed. Students investigate the characteristics of various model atmospheres and synthesize line profiles.

3345.509 성간가체역학 3-3-0

Interstellar Gas Dynamics

This course aims to deepen students’ understanding of the global distribution of the galactic ISM and the gas dynamical activities therein. Students review basic MHD equations, virial theorem, energy principle analysis, shock waves, equilibrium of magnetized gas disk, and equilibrium of interstellar clouds. Convective, thermal, Jeans, and Parker instabilities as well as super-nova remnants, HII regions, and star formation are addressed.

3345.511 외부은하와 우주론 3-3-0

Extragalactic Astronomy and Cosmology

This course provides an overview of the microscopic processes in the physical properties of the interstellar medium, whose fundamental constituents are electrons, protons, neutral atoms and molecules, heavy element ions, dust grains, cosmic rays, photons, and magnetic fields. Basic principles of quantifying interaction rates among the ISM species are introduced and the principles are applied to observations of the galactic ISM. Observational characteristics of diffuse HII clouds, interstellar dust clouds, dense molecular clouds, HII regions, and super-nova remnants are established and a five-phase model of the ISM is introduced in the context of long term evolution.
3345.513 항성내부구조와 진화 3-3-0

Stellar Structure and Evolution

항성의 진화와 구조에 관한 모든 관측사실을 개관한 후 별의 구조를 알아내는 데 사용되는 방정식을 도입하고, 별 내부의 물리적인 상태를 알아낸다. 우주의 간극과 상집의 설명, 별의 형성을 통한 별의EPROM에서의 분포, 별의 진화에 따른 학종성과 중성성성의 설명과 별의 중력수축 등을 다루고 별의 진화에 따른 H-점성에서의 진화경로를 학습한다.

All relevant observational facts of the stellar structure and evolution are reviewed and the governing equations are introduced. Physical states of stellar interior are examined and the structure and properties of main-sequence stars, early evolution of post main-sequence stars and their structures are studied, followed by the late stages of evolution. The evolutionary tracks and globular clusters are applied to obtain the ages of these clusters and the properties of compact objects such as white dwarfs and neutron stars are examined.

3345.514 천문자기유체역학 3-3-0

Astronomical Magnetohydrodynamics

자기유체역학의 기본원리를 학습하고 기본방정식을 도입함으로써 자기유체의 일반적인 특성에 관하여 학습하고 특히 자기유체역학적 운동, 평형, 그리고 안정성에 대해서들어본다. 여기서 학습한 자기유체역학 이론은 태양의 흑점과 태양흑점주변에서 일어나고 있는 플레어 현상에 적용하여 각종 자기유체역학적 현상을 이해한다.

Fundamental principles and basic physics of magnetohydrodynamics, particle orbit theory, shock waves in plasmas, and macroscopic and microscopic stability of astrophysical plasmas are introduced with applications to a wide range of astrophysical systems, particularly in the Sun and other exotic celestial bodies.

3345.516 항성역학 및 중력 3-3-0

Stellar Dynamics and Gravitation

우주에 존재하는 별이나 은하에 의한 가장 많은 영향을 받는다. 이들 천체에 적용되는 중력법칙은 이미 잘 알려진 뉴턴 역학이지만, 많은 별이나 은하가 포함되어 있는 '다체계'에서는 역학 방정식을 직접 구하는 것이 거의 불가능하다. 따라서 통계적인 방법이 널리 쓰이고 있으며 최근에는 고속 컴퓨팅을 이용한 컴퓨터 시뮬레이션도 이루어지고 있다. 이 강좌에서는 다체계에 적용할 수 있는 통계적 방법론을 소개하고 이를 이용한 은하나 성단의 구조, 역학적 안정성, 그리고 이를 통해 천체의 역학적 진화를 공부한다.

항성계를 연속된 질량 분포를 가진 것으로 간주하여 별의 운동을 및 개의 물리량에 의해 결정되는 계로 대화로, 중력 운동설 모양에 따른 간단한 확률론적 특성을 이해한다. 항성계가 만족하는 브루트 몬보조 방정식을 도입하여, 여기서부터 얻어지는 항성계의 역학적 특성을 논한다. 가스 역학에서 사용하는 운동 이온을 이용한 항성계의 역학적 진화를 알아낸다. 마지막으로, 이들 원리를 연속된 항성계에 적용하여 필요한 물리량을 도출하는 방법을 공부한다.

Gravitation is the most dominant force in the universe. The gravitational law applicable to stellar systems is the well-known Newtonian gravity, but the solutions for the many-body systems are almost impossible to obtain. Therefore, various statistical methods are widely used, and numerical integrations are often drawn by computers. In this course, students are introduced to the statistical methods for N-body systems to study the structure, dynamical instability, and evolution of stellar systems. The collisionless Boltzmann equation (CBE) and its properties are discussed to examine the kinetic theory originating from gas dynamics that is applied to dynamical evolution of stellar systems.

★ 3345.701 관측천문학특강 3-3-0

Topics in Observational Astronomy

관측천문학에 관련된 특별주제를 선정하여 집중적으로 학습한다. 학습방법은 발표 및 토론을 주로 한다.

This course consists of student presentations and discussions on selected topics in recent observational astronomy.

★ 3345.702 천체분광학특강 3-3-0

Topics in Astronomical Spectroscopy

외부은하 천문학에 관련된 특별주제를 선정하여 집중적으로 학습한다. 학습방법은 발표 및 토론을 주로 한다.

This is an intensive extragalactic astronomy course. Student presentations and discussions are an integral part of the course.

★ 3345.703 외부은하천문학특강 3-3-0

Topics in Extragalactic Astronomy

특정주제에 대하여 최근 발표된 논문을 조사하여 발표하고 토론한다.

Selected topics from recently published research papers are addressed.

★ 3345.704 천체물리세미나 3-3-0

Seminar in Astrophysics

이론천문연구 3-3-0

Research in Theoretical Astronomy

研究成果에 대한 최근 발표된 논문을 조사하여 발표하고 토론한다.

Papers in theoretical astronomy are reviewed.

★ 3345.707 현대천문학특강 3-3-0

Topics in Current Astronomy

현대천문학에 관련된 특별주제를 선정하여 집중적으로 학습한다. 학습방법은 발표 및 토론을 주로 한다.

This is an intensive astronomy course consisting mostly of student presentations and discussions.
대학원(Graduate School)

*3345.708 전파천문학특강 3-3-0

**Topics in Radio Astronomy**

전파천문학 분야에서 흥미로운 주제를 선정하여 한 학기 동안 강의와 토의로 진행한다. 전파천문학 강좌를 수강한 학생들을 대상으로 한다.

This course is offered to those who have completed Radio Astronomy. Various topics are addressed and discussed.

*3345.710 우주론특강 3-3-0

**Topics in Cosmology**

외부은하천문학과 우주론 분야에서 최신 이론을 소개하고, 새로운 연구분야를 모색한다.

Recent topics in extra-galactic astronomy and cosmology are introduced and new research projects are examined.

*3345.711 태양물리학특강 3-3-0

**Topics in Solar Physics**

홍염, 플레어, CME(코로나 질량방출), 태양활동과 우주환경에 관한 첨단의 연구를 최근에 발표된 연구논문을 기초하여 학습한다.

Currently developed topics in solar physics such as sunspots, flares, prominences, coronal mass ejection are selected for in-depth study.

3342.803 대학원논문연구 3-3-0

**Reading and Research**

대학원 석사 및 박사학위 취득에 관한 논문연구를 수행한다.

In this course graduate students conduct research related to their thesis.

M1420.000100 대학원 신입생 세미나 3-3-0

**Seminar for the New Graduate Students**

지난 수 십 년간 우주관측기술의 비약적 발전으로 막바지에 천문학 연구 분야가 최근 방대하게 확장되었다. 이 강의는 대학원 신입생에게 여러 다양한 천문학 분야의 최신 연구 동향과 발전 상황을 소개하며 각 분야의 특성과 연구 핵심을 이해케하며 천문분야 및 지도교수 선택에 도움을 주고 또한 미래 천문학자가 가져야 할 비전을 제시한다.

Over the past few decades, the astronomical research area has been greatly extended thanks to the rapid progress in the observational technology. This course will introduce the new graduate students the recent developments and trends in diverse fields of astronomy. The goal of this course will make the new graduate students understand the characteristics and essence of all the astronomical research fields, helping them choose which field to major in and suggesting them a new vision that the students must have as future astronomers.
Advanced Statistical Mechanics

In this course, we will study the basic concepts and principles of quantum mechanics. It is recommended that the students who want to take this course are familiar with the basic concepts and principles of quantum mechanics. The students such that they can interpret the experimental spectra and obtain structure information from them. Quantum mechanically, the density matrix is studied. Various spectroscopic techniques such as IR, Raman, UV/vis, NMR, and EPR that can be applied to characterize the coordination and organometallic compounds will be discussed. Group theoretical methods, molecular orbital and ligand field theories are also introduced.

Advanced Molecular Spectroscopy

This course discusses fundamental bonding theory, aromatic electrophilic substitution, and concerted pericyclic reactions. The first half discusses fundamental bonding theory, aromatic electrophilic substitution, and concerted pericyclic reactions. The second half presents advanced quantum theories such as scattering theory, density matrix, and second quantization will be discussed as well as the quantum mechanical description of the light–matter interactions.

Chemical Crystallography

This course is intended for advanced undergraduate and graduate students in organic chemistry. The first half discusses fundamental bonding theory, stereochemistry, and conformation as it is applied to practical problems of structure and reactivity. The second half presents an overview of elementary reactions as well as nucleophile substitution, polar additions and elimination, carbonyl chemistry, aromatic electrophilic substitution, and concerted pericyclic reaction while utilizing the theoretical framework presented in first parts.
3343.542 Synthetic Organic Chemistry

Yugieh-Schulzachmae to technevian interface in desy are, enyus. The first half covers asymmetric organic synthesis and the second half covers the synthesis of carbocyclic compounds. These two major topics will be presented through literature reviews and recent trends in organic chemistry. Therefore, graduate students can apply the synthetic methods covered during this class for the synthesis of their own company.

This course investigates synthetic organic chemistry and can be divided into two parts. The first half covers asymmetric organic synthesis and the second half covers the synthesis of carbocyclic compounds. These two major topics will be presented through literature reviews and recent trends in organic chemistry. Therefore, graduate students can apply the synthetic methods covered during this class for the synthesis of their own company.

3343.551 Advanced Biochemistry

Four lecturers will join the course to teach their respective disciplines. Prerequisite: undergraduate biochemistry is advisable for this course. There is no prerequisite for this course, but at least one semester course in undergraduate biochemistry is advisable. Four lecturers will join the course to teach their respective disciplines.

3343.552A Enzyme Chemistry

Enzymes are bio-molecules that catalyze chemical reactions. Both proteins and nucleic acid can function as enzymes. To understand and improve the functions of these reactions. Topics include single crystal surface structure, atomic and molecular monolayers, nanostructure, solid-liquid interface, and electrochemical interface. Emphasis will be given to the physical and chemical nature of the interfaces as well as experimental techniques for surface analysis. Prerequisite: undergraduate physical chemistry.

3343.554 Plant Biochemistry

This course investigates various experimental techniques used to study the structure of biological macromolecules, such as proteins and nucleic acids, at an advanced level. Techniques include X-ray crystallography, nuclear magnetic resonance, and molecular spectroscopy. This course covers relevant principles, methodology, and trends.

3343.621 Electrochemistry

This course covers electroanalytical chemistry as well as physical electrochemical methods - their principles and
applications. The methods studied include potentiometry, amperometry, voltammetry, cyclic voltammetry, various kinds of polarographies, rotating electrodes, electrode reactions, impedance method and complicated electrochemical techniques. This course is designed for students who have taken physical chemistry and basic differential equations at the university level.

3343.622A 화학기기장치법 4-2-4

Chemical Instrumentation

The methods studied include potentiometry, amperometry, voltammetry, cyclic voltammetry, various kinds of polarographies, rotating electrodes, electrode reactions, impedance method and complicated electrochemical techniques. This course is designed for students who have taken physical chemistry and basic differential equations at the university level.

3343.641 천연물화학 3-3-0

Natural Products Chemistry

The basic concepts in polymer science, developed over the past seventy years, are essential to the scientific understanding and technological applications of natural and synthetic polymers, materials essential to both life and commerce. This course introduces the basic concepts of polymer science, with topics ranging from the establishment of macromolecular concepts in 1930s to the current debates on the basic structural-property relationships of polymer materials of various chemical structures and molecular architectures.

3343.651 핵산화학 3-3-0

Nucleic Acid Chemistry

(1) DNA와 결합하여 나노입자를 만들 수 있는 물질들에 대하여 공부한다.
(2) DNA와 결합하여 나노입자를 만들 수 있는 물질들에 대하여 공부한다.
(3) 이론 물질들은 양이온성 리피드, 양이온성 고분자들이 있으며, 이론 물질들은 합성하는 방법을 연구한다.
(4) 새로운 물질의 합성법을 설계하며 본다.
(5) Bioconjugation, Polymer Synthesis, Melting Condensation amino ester Polymer, DNA-고분자 나노 입자를 분석방법을 연구한다.

In this course students will study non-viral cationic gene delivery carriers, the cationic lipid and polymer used to make nano particles. The lecture will cover how to synthesize non-viral carrier polymers and lipids and how to characterize these particles. Additionally, the lecture will cover in vitro gene transfection and in vivo gene delivery.
각 대학원생들의 논문지도교수가 이 강좌에 참여하며, 이 강좌의 목적은 대학원생들로 하여금 방법의 터득 및 각 연구 프로젝트의 접근방법 습득 등의 논문연구 제반에 관한 지도를 받게 하는 것이다. 본 강자를 통하여 대학원 석사 또는 박사학위 논문이 완성된다.

Each graduate student will be lectured by his or her adviser. The object of the class is in (1) acquiring the methodology to research and (2) learning how to approach a project. Through this class a M.S. or a Ph.D. thesis will be completed.

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metallic compounds and their uses in synthetic organic chemistry. Topics related to polymer synthesis, environmental chemistry, and catalysis are also taught.

3343.720 Supramolecular Chemistry

Borrowing more generalized college graduates. Also the general direction of shaping undergraduate education towards graduate school courses according to the University's general curricula of the Chemistry Department have been transferred. This course covers the principles of molecular recognition and investigates various organic supramolecular systems based on the understanding of these principles. It focuses on the understanding of these principles. It covers the principles of molecular recognition and investigates various organic supramolecular systems based on the understanding of these principles. It focuses on the understanding of these principles.

3343.721 Medicinal Chemistry

Yu-gi-chemicals' understanding of the human medicinal chemist's understanding of the human. The subject of medicinal chemistry is the study of the study of the development of various functional supermolecules.

M1409.000700 Special Topics in Contemporary Chemistry

Recent many specialized courses in the undergraduate curricula of the Chemistry Department have been transferred to graduate school courses according to the University's general direction of shaping undergraduate education towards bringing more generalized college graduates. Also the source of incoming graduate students has become more diversified than ever, ranging from many related departments other than chemistry and from many different colleges all over the country. Therefore, the number of students who are not immediately ready to the level of education and research in the graduate school is on the rise. In order to equip the incoming graduate students with proper knowledge needed for the graduate level education and research, a special course, “Advanced Chemistry” is designed, and through this course, graduate students will prepare themselves with proper background knowledge and be ready to take courses and carry out research in their specialized fields of chemistry.
3343.727

Synthesis of Organic Materials

The main focus of this course is how to synthesize various polymers. The lecture will start with introduction of polymer chemistry, and expand to the two basic polymerization mechanisms, step-growth and chain-growth polymerization. Then modern methods especially metal-catalyzed polymerizations will be introduced which is one of the most powerful tools in modern organic synthesis. Lastly, latest technology of polymer electronics dealing with the synthesis of conjugated polymers will be touched upon.

3343.729

Chemistry in Industry Seminar

This course is an open forum in which all graduate students are encouraged to participate in the research. In this class comprising seminars of student reports, all students are encouraged to understand and communicate various contents of chemical researches are applied to practical industrial processes.

M1409.000200

화학연구 학생 포플로취업 3-3-0

Student Colloquium on Chemical Research

화학부 대학원생들에게 산업체에서 응용되는 화학 연구를 소개하고, 산업체에서 실질적으로 필요하거나 현재 중요하게 여겨지는 화학의 전반적인 문제점을 학습하게 하는 목적이 있다. 화학 산업체 연구소에서 연구를 수행하는 연구군을 초청, 집단 또는 팀으로 진행한다. 수강생들은 학과적으로 배운 화학을 산업체에 적용함에 있어서 어떤 연구를 할지, 기술적인 화학의 연구들이 어떻게 산업체에 적용되는지를 학습하게 될 것이다.

M1409.000300

노벨 해커 강독 3-3-0

Readings in Nobel Lectures

Our brain creates and enables cognition, emotion, motivation and behavior via a variety of biochemical and electrochemical reactions, and understanding the mechanisms underlying these phenomena is a significant challenge in contemporary science. Neurochemistry is the study of neurochemicals, including neurotransmitters and other molecules such as psychopharmaceuticals and neuropeptides, that influence the function of neurons. This fundamental field within neuroscience examines how neurochemicals influence the operation of neurons, synapses, and neural networks. The aim of this lecture is to introduce the basics of neurons and the

M1409.000400

핵자기공명 분광학 3-3-0

NMR Spectroscopy

NMR spectroscopy is a technique to study molecules of various sizes at atomic resolution. This course deals with fundamentals and applications of NMR to help students design their own NMR experiments and understand NMR literature. The first part of the course involves quantum description of solution-state NMR and introduces pulse sequences to control nuclear spin states. In the second part, NMR experiments are introduced to analyze small chemicals and biomolecules.

M1409.000500

신경과학 3-3-0

Neurochemistry

Our brain creates and enables cognition, emotion, motivation and behavior via a variety of biochemical and electrochemical reactions, and understanding the mechanisms underlying these phenomena is a significant challenge in contemporary science. Neurochemistry is the study of neurochemicals, including neurotransmitters and other molecules such as psychopharmaceuticals and neuropeptides, that influence the function of neurons. This fundamental field within neuroscience examines how neurochemicals influence the operation of neurons, synapses, and neural networks. The aim of this lecture is to introduce the basics of neurons and the
nervous system and to provide the in-depth understanding of major neurochemicals, including glutamate, GABA, dopamine, acetylcholine and serotonin. Furthermore, we will seek to understand how these neurochemicals influence bodily and mental functions. The class is for both graduate and undergraduate students interested in neurochemistry, and is also open for students interested in applying their knowledge from diverse disciplines to neuroscience, such as medicinal chemistry, organic chemistry, chemical biology and analytical chemistry.

M1409.000800 생명화학특론 3-3-0

Special Topics in Life Chemistry

화학부에서는 기존에 생화학특론이라는 과목 개설을 통해 생명과학의 다양한 특수분야를 강의(1990년-2002년; 교과목번호 305.602)한 바 있다. 최근에는 생명화학의 발전 속도가 더욱 빨라져, 대학원생들은 생명화학의 최첨단 연구를 빠르게 습득하여 자신의 연구에 적용하지 못한다면 세계적 트렌드에 뒤쳐질 가능성이 매우 크다. 이에 본 생명화학특론 과목에서는, 유전자, 단백질과 같은 다양한 생체 분자의 구조 및 기능, 조절, 더 나아가 이러한 분자가 생체 전체에 미치는 영향에 대해 가장 최근의 연구 결과를 중심으로 전공 교수들이 순환 강의한다.

Interesting topics related to the biosystems had been taught in the Department of Chemistry from 1990 to 2002 as a course of “Special topics in biochemistry.” Graduate students in the chemistry major had better adapt to recent rapid advances in life chemistry, and apply the frontier information and technologies to their own research as soon as possible. This new course, “Special topics in life chemistry”, intends to give the most frontier results in life chemistry including biomolecular structure, function, control, and effects on the whole biosystem to graduate students by the professor who has the speciality in each field.

M1409.000900 나노의학특론 3-3-0

Special Topics in Nanomedicine

이 과목은 최근 여러 제약회사들 중심으로 활발히 연구개발되고 있는 나노메디신, 즉 나노기술을 적용한 신약개발전략에 대한 동향과 나노메디신의 기반에 하고 있는 바이오소재화학에 대한 기본, 핵심, 그리고 충전적 이해와 더불어, 응용학문에 기반한 미래 의학의 진단과 치료에 이르기까지의 과학적 이해를 도와주고자 한다.

This course is designed to guide students in gaining a better understanding of future medicine based on interdisciplinarity studies including nanotechnology and biomaterials chemistry in addition to recent trends of new nano-therapeutics developed in biopharmaceutical industries to treat life-threatening diseases.

3343.803 대학원논문연구 3-3-0

Reading and Research

대학원 석사 및 박사학위 취득에 필요한 논문연구로서, 논문연구 결과 및 연구주제는 각 학생에 따라 별도로 주어질 것이다.

In this course graduate students conduct research for preparing their thesis. The objective is to determine the focus and title of the thesis.
study molecular actions of drugs on various cell functions, drug-discovery assay methodologies, and molecular toxicology.

*3344.513 高級分子細胞生物学実験研究  3-3-0

Special Studies in Molecular and Cellular Biology

본 세포 생명과학의 최신 실험 기법을 강의로 통해 체계적으로 습득하고, 수생생의 대학원 연구에 효용적으로 적용할 수 있는 방법을 접점 토론을 통해 제시하도록 한다.

This course is designed to lecture advanced techniques and themes in molecular and cellular biology. The graduate students will benefit efficient planning and performance in laboratory research from this practical course.

Biochemistry Lectures

미토콘드리아, 소포체, 골지, 리소솜 등의 세포소기관은 세포기능 유지에 필수적인 역할을 한다. 세포소기관의 작동원리와 구조 및 기능조절 기전을 이해함으로써, 세포소기관과 관련된 유전질환과 세포신호장관의 이해에 필수수준에서 추구한다.

Eukaryotic organelles, such as mitochondria, endoplasmic reticulum, Golgi and lysosome, are indispensable for maintaining proper cellular activities. In this course, the molecular mechanisms for the morphological and functional dynamics of eukaryotic organelles are taught. Main topics include human genetic disease-related issues and cell signal transduction.

Molecular Developmental Stem Cell Biology

Research on stem cells is advancing knowledge about how an organism develops from a single cell and how healthy cells replace damaged cells in adult organisms. This class is designed to give students a basic understanding of concepts at a molecular and cellular level that are fundamental to molecular medicine. The course will emphasize molecular mechanisms underlying diseases like autoimmune diseases, cancer, inflammation, allergy, infectious diseases, their diagnosis and therapeutic intervention. Students will

Advanced Genetics

Molecular genetics and transmission genetics are studied and several model organisms are used to illustrate the material. Emphasis is placed on an experimental approach at the molecular and cellular level. Background knowledge in genetics and biochemistry is required.

Molecular medicine

본 강좌는 분자 및 세포생물학 수준에서 난치성 인체질환을 이해하는 데 필요한 신화지식과 기술을 제공한다. 본 과목은 화학, 생물학, 의학 등 다양한 학문분야에서 recent developments in cell biology and related topics. Students will learn the latest research findings and techniques in cell biology. The course will emphasize the integration of molecular and cellular biology concepts and their applications in research and medicine.

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tively participate in critical evaluation and discussion.

**3344.518 세포생물학특강 2-2-0**

Cell biology Lectures

세포생물학세포전공분야로 선택한 대학원생들을 위해 세포생
물학과 관련된 분야에서 최근에 발표된 중요한 연구에 대한 문
헌의 고찰 및 토론을 중점적으로 다루는데, 최근의 연구동향을 re-
view하여 보고, 각자가 직접 문헌을 찾고 발표를 하면서 학문의
깊이와 이에 대한 이해를 돕고자 한다. 또한 탐구방향을 제시함으
로써 각자의 전공 학문을 수행할 수 있는 연구분야 및 자질을 함
양하여, 급격하게 발전하는 학문추세에 대한 진취적인 수용적 자
질과 비판적인 능력을 아울러 갖출 수 있는 기틀을 마련하고자 한다.

Recent progress in the field of cell biology is reviewed. Research tools and approaches as well as scientific findings are presented. Various methodologies for critical analyses are introduced.

**3344.520 유전학특강 2-2-0**

Genetics Lectures

유전학을 세부전공분야로 선택한 대학원생들을 위해 유전학과
관련된 분야에서 최근에 발표된 중요한 연구에 대한 문헌의 고찰
및 토론을 중점적으로 다루는데, 최근의 연구동향을 review하여
보고, 각자가 직접 문헌을 찾고 발표를 하면서 학문의 깊이와 이
에 대한 이해를 돕고자 한다. 또한 탐구방향을 제시함으로써 각자
의 전공 학문을 수행할 수 있는 연구분야 및 자질을 함양하여, 급
격하게 발전하는 학문추세에 대한 진취적인 수용적 자질과 비판적
인 능력을 아울러 갖출 수 있는 기틀을 마련하고자 한다.

Recent progress in the field of genetics is reviewed. Research tools and approaches as well as scientific findings are presented. Various methodologies for critical analyses are introduced.

**3344.522 분자생물학특강 2-2-0**

Molecular Biology Lectures

분자생물학을 세부전공분야로 선택한 대학원생들을 위해 분자생
물학과 관련된 분야에서 최근에 발표된 중요한 연구에 대한 문헌
의 고찰 및 토론을 중점적으로 다루는데, 최근의 연구동향을 re-
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로써 각자의 전공 학문을 수행할 수 있는 연구분야 및 자질을 함
양하여, 급격하게 발전하는 학문추세에 대한 진취적인 수용적 자
질과 비판적인 능력을 아울러 갖출 수 있는 기틀을 마련하고자 한다.

The goal of this course is to review current developments in molecular biology research. Student presentations and discussions are integral parts of the course. Students are expected to actively participate in critical evaluation and discussion.

**3344.524 세포생물학과 인간질병특론 3-3-0**

Cell Death and Human Diseases

Apoptosis, necrosis, autphagic cell death 등의 정의와 각각
의 mechanism에 대한 최신 연구의 요약, 그리고 치료, 허혈, 현
명된 병 등 병질환, 그리고 암 등의 인간질병과의 연계성 등을 강
의, 토론하고자 함.

Definition of cell death machinery, such as apoptosis, ne-
crosis, and autophagic cell death, and recent progress on mo-
lecular mechanism of their signaling will be described. In
addition, the role of cell death machinery in human disease
including neurodegenerative diseases and cancer will be
discussed.

**3344.525 단백질대사론 3-3-0**

Protein Metabolism

단백질의 기능은 인을 포함한 여러 화합물질뿐만 아니라, 유비
퀴틴(Ub) 또는 그와 유사한 단백질(UBL)이 결합되고 활성화되면서
조절된다. 단백질의 Ub의 결합은 대개 proteosome에 의해 분해
되어, UBL의 결합과 유리는 마치 인산화와 탈인산화와 유사
하게 신호전달 등 세포의 생리적 기능을 조절한다. 본 과목은Ub
및 UBL의 결합에 따른 단백질 기능 조절에 관한 최근 발표된 논
문을 가지고 세미나 형식으로 진행한다.

Covalent modification of proteins plays a key role in the
maintenance of cell homeostasis. Proteins are reversibly
modified by ubiquitin (Ub) and ubiquitin-like proteins
(UBLs) as well as by small chemicals, including inorganic
phosphate. While ubiquitination in most case leads to protein
degradation by proteasome, UBL modification is involved in
the control of numerous cellular processes, such as signal
transduction. This course will deal with the recent publica-
tions on the role of protein modification by Ub and
UBLs.

**3344.542 RNA 생물학특론 3-3-0**

Advanced RNA Biology

Recent progress in the field of RNA biology is reviewed.
Research tools and approaches as well as scientific findings
are presented. Various methodologies for critical analyses are
introduced.

**3344.544 면역유전학 3-3-0**

Immunogenetics

19세기 파스퇴르와 코호 등의 미생물학자들에 의하여 탄탄한 기
초를 마련한 면역학은 20세기 전반, 특히, 냉동 보존법, 현미
경底下에서의 면역학 연구가 활발해지고, 최근 isotype 변이, 요
인, 말라리아의 면역성, 면역열 등이 이용되어 발전하였다. 면역학은
전체 동물의 면역학적 차원에서 이해할 수 있게 된 중요한 기술을 마련하였다.

본 과목은 면역학의 기초와 기본 개념을 이해하고, 면역학의 현
대적 연구의 발전을 이해하는 데 도움을 줄 수 있는 학과에
되는 교육을 제공한다. 현재 면역학의 주요 연구 분야는 면역학의 기본
기전, 면역학의 약물학적 연구, 면역학의 치료학적 연구 등의
주요 연구 분야로 구분된다.

The goal of this course is to review current developments in immunology research. Student presentations and discussions are integral parts of the course. Students are expected to actively participate in critical evaluation and discussion.

**3344.543 면역유전학 특강 3-3-0**

Advanced Immunogenetics

Recent progress in the field of immunogenetics is reviewed.
Research tools and approaches as well as scientific findings
are presented. Various methodologies for critical analyses are
introduced.

**3344.545 면역생물학 3-3-0**

Advanced Immunobiology

Recent progress in the field of immunobiology is reviewed.
Research tools and approaches as well as scientific findings
are presented. Various methodologies for critical analyses are
introduced.

**3344.546 면역생물학 특강 3-3-0**

Advanced Immunobiology Lectures

Recent progress in the field of immunobiology is reviewed.
Research tools and approaches as well as scientific findings
are presented. Various methodologies for critical analyses are
introduced.

**3344.547 면역생물학 및 면역생물학특강 3-3-0**

Advanced Immunobiology and Immunobiology Lectures

Recent progress in the field of immunobiology is reviewed.
Research tools and approaches as well as scientific findings
are presented. Various methodologies for critical analyses are
introduced.
물하고 있는 허위일이며, 결국 이러한 문제의 해결은 유전학적인 접근이 불가피하다고 할 수 있다. 생명공학의 시대가 열린 무렵에도 많은 연구결과들이 그 수용체에 대한 유전자 클론 등에 기반한 접근이 이루어지면서 제일 먼저 태그에 의하여 실내의 분자보다 효율성이 높은 물질을 개발하기도 하였다. 이 강의를 통하여 생명과학에서의 유전학적 접근이 하게 될 것이다.

Through the remarkable progress during the 19th and 20th centuries, Immunology had been supported very much by the development of Genetics. As is well known, Genetics began a little later than Immunology, but the syndromeic niche opened a firm foundation for the development of Immunogenetics, which was later gave the clear answers for the ABO blood type led by Lantsteiner and the MHC area during the early 1900s. When genetic engineering opened a new era, a variety of cytokines and immune regulators and their receptors were cloned and we could make more efficient molecules in mass thanks to recombinant DNA technology, having immunogenetics a new future promising field.

Immune regulation is becoming a leading scientific area for the description of human health, since many immunopathological analysis could be done on the basis of genetics. Autoimmune diseases, such as RA or SLE, are not well understood as yet, which we expect to get the answers from the immunogenetic researches. This lecture will give the outline to understand what we could find out in Immune Regulation based on the Genetic.

3344.545 식물호르몬생리학 3-3-0

**Physiology of Plant Hormones**

식물호르몬은 식물의 발달과 생장 그리고 외부 환경에 대한 반응에 핵심이 되는 역할을 하는 바, 본 강좌는 이들 식물호르몬들의 합성, 수송, 작용 메커니즘 등에 대한 최근의 생화학적, 분자유전학적, 생물학적 연구 결과들을 살펴보고자 한다.

Plant hormones are key factors for plant development, growth and responses to environmental stimuli. This lecture aims to survey recent reports on biochemistry, molecular genetics, and physiology in the fields of biosynthesis, transport, molecular action mechanism of major plant hormones.

3344.546 신경생물학특강 2-2-0

**Neurobiology Lectures**

신경생물학을 세부전공분야로 선택한 대학원생들을 위해 신경생물학과 관련된 분야에서 최근에 발표된 중요한 연구에 대한 문헌의 고찰 및 토론을 중심적으로 다루는데, 최근의 연구동향을 review하여 보고, 각자가 직접 문헌을 가지고 발표를 하면서 학문의 깊이와 이에 대한 이해를 돕고자 한다. 또한 탐구방향을 제시함으로써 각자의 전공 학문을 수행할 수 있는 연구분야 및 자격을 함양하여, 극심하게 발달하는 학문추세에 대한 전문적인 수용적 자세와 비판적인 능력을 아울러 갖출 수 있는 기틀을 마련하고자 한다.

This course provides a forum for discussion of the current trends in neurobiology. Current research topics are introduced by the faculty and guest speakers, and student presentations are given.

3344.548 미생물학특강 2-2-0

**Microbiology Lectures**

미생물학을 세부전공분야로 선택한 대학원생들을 위해 미생물학과 관련된 분야에서 최근에 발표된 중요한 연구에 대한 문헌의 고찰 및 토론을 중심적으로 다루었다. 최근의 연구동향을 review하고, 탐구방향을 제시하여 근거하게 발전하는 학문추세에 대한 전문적인 수용적 자세와 비판적인 능력을 아울러 갖출 수 있도록 한다.

Recent progress in the field of microbiology is reviewed. Research tools and approaches as well as scientific findings are presented. Various methodologies for critical analyses are considered.

*3344.550 생물공학특강 2-2-0

**Biotechnology Lectures**

생물공학을 세부전공분야로 선택한 대학원생들을 위해 생물공학과 관련된 분야에서 최근에 발표된 중요한 연구에 대한 문헌의 고찰 및 토론을 중심적으로 다루었다. 최근의 연구동향을 review하고, 탐구방향을 제시하여 근거하게 발전하는 학문추세에 대한 전문적인 수용적 자세와 비판적인 능력을 아울러 갖출 수 있도록 한다.

Recent progress in the field of biotechnology is reviewed. Research tools and approaches as well as scientific findings are presented. Various methodologies for critical analyses are considered.

*3344.552 식물생리학특강 2-2-0

**Plant Physiology Lectures**

식물생리학을 세부전공분야로 선택한 대학원생들을 위해 식물생리학과 관련된 분야에서 최근에 발표된 중요한 연구에 대한 문헌의 고찰 및 토론을 중심적으로 다루었다. 최근의 연구동향을 review하고, 탐구방향을 제시하여 근거하게 발전하는 학문추세에 대한 전문적인 수용적 자세와 비판적인 능력을 아울러 갖출 수 있도록 한다.

This course is designed for graduate students majoring in plant physiology. Reviews on recent developments in these fields and student presentations on related papers are integral parts of this course.

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★3344.549 단백질 구조론 3-3-0

**Introduction to Protein structure**

단백질 구조 개요는 단백질의 구조론과 이 구조적인 정보가 어떻게 기능하는지에 초점을 맞추고 있다. 특히, 증거적으로 이해와 같은 내용에 대하여 학습하고자 한다.

1. Chemical and physical properties of amino acids, peptides and proteins
2. Fundamental principles governing folding, structure and interactions of proteins.
3. Structural motifs of proteins
4. Function and structure relationship of proteins
5. Prediction and analysis of protein sequences

The lectures will be based on the book, “Introduction to protein structure” written by Branden and Tooze.
Methods for Animal Behavior and Ecology

This course focuses on learning practical research skills for the studies in animal ecology and behavior, including designing experiments, performing statistical analyses, and writing scientific papers. Students will be encouraged to design and conduct their own small research project as a part of the lecture. The process of conducting research projects, as well as the final product, will be discussed and evaluated in the class.

Sensory Ecology and Signals in Animal

We will study how animals use senses to survive, forage, avoid predators, orient, and make reproductive decisions, etc.

Species richness

This course will introduce methods for signal measurement and analysis. The class will be based on lecturing, reading papers and conducting experiments. The course will give hands-on knowledge that every student need if their future education involve evolving experiments. This course will give hands-on knowledge of systematics and their environment is reviewed and the historic background is surveyed.

Developmental Biology Lectures

The course will begin by considering the mechanisms for coexistence of species, and then move on to the patterns on various scales (local to geographical), including latitudinal and elevational gradients, and ‘hotspots’ in species richness. The role of past extinction events natural and caused by humans will be considered. Finally, the course will assess present and future threats to species diversity, and what can be done to ensure the survival of the world’s present biological diversity.

Assessment will be two short-answer exams, in English.

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생태학 특강 2-2-0

Ecology Lectures

생태학을 세부공학분야로 선택한 대학원생들은 생태학과 관련된 분야에서 최근에 발표된 중요한 연구에 대한 문헌의 고찰 및 토론을 중심으로 다루는데, 최근의 연구동향을レビュー하여 보고, 각자가 직접 문헌을 찾아보고 발표를 하면서 학문의 깊이와 이에 대한 이해를 돕고자 한다. 또한 탐구형 강좌를 설계함으로써 각자와 그의 연구를 수행할 수 있는 연구동향과 자료를 함양하며, 급격하게 발전하는 생물학에 대한 신규적인 수용과 정량적인 능력을 아우러 간과하는 기회를 마련하고자 한다.

In this course, students are introduced to the fundamental knowledge of ecology. The relationship between organisms and their environment is reviewed and the historic background is surveyed.

발생생물학특론 3-3-0

Advanced Developmental Biology

발생유도체, 생물의 분화, 핵-세포질의 상호작용, 발생이 진행 되어가는 과정에서의 세포조직분화의 기작을 다루며, 생물의 발 생이 나타나는 과정을 분자생물학적 수준에서 파악하도록 한다. 또한 생물체의 발생과 관련하는 각종 요인의 분석과 그의 발현을 논하고iji 적용 설명과 생활 중에 있는 세포 및 개체의 생활사에 어떻게 작용하는가 하는 문제, 그리고 발생 중에 있는 각 세포들의 상호 조정 기작을 해석한다.

The process of development at molecular and cellular levels as well as induction and inducer, morphogenes, nucleo-cytoplasmic interaction, mechanism of cell differentiation are discussed in this course. Special emphasis is given to various developmental factors, gene expression, and cellular interaction during cell-cycle and ontogenesis.

생물공학특론 3-3-0

Advanced Biotechnology

생물공학 특론에서는 생물산업에서 사용되는 각종 미생물 및 세포주의 다양한 반응을 열역학(thermodynamics) 및 반응공학 (heat, mass, momentum transport phenomena)의 원리로 이해하는 계기가 된다. 즉 사용하는 기질과 생산되는 균체 및 산물의 물질수지량(material balance) 및 반응수율(stoichiometry) 및 속도를 분석하는 것은 연구 결과를 정량적이고 정확한 것으로 표현할 수 있는 원리를 도출하는 기반이다. 미생물 배양 및 원하는 물질의 생산의 각 단계에서의 특성을 분석하여 생물공학에서 얻은 물질을 실제로 생산하고 실제 적용하는 원리를 다루게 된다.

The complicated and diversified responses of microbes and cells to the intrinsic and extrinsic environments are to be understood through analyses of the principles of thermodynamics and transport phenomena. Analyses of material balance, stoichiometric relation and the reaction kinetics are studied and the construction concepts representing the experimental data as well as the production and application of products are discussed.

미생물들은 다양한 환경에서 다양한 형태의 생리적 특성을 보이므로, 생태학의 다양한과 생물생산의 향상적 조절 및 적용성을 연구하는 데 매우 좋은 재료이다. 이러한 다양한 생물생산의 기본을 유전자의 발현과 분화의 간의 상호작용 측면에서 이해하고자 하는 것이 분자생물학 분야의 목적이다. 이를 위해 본 강의에서는 미생물들이 여러 환경에서 수행하는 특구적 기능과, 그러한 기능의 원인은 유전자의 발현, 환경과 유전자발현자의 신호전달 등에 관한, 관련된 분자들의 상호작용 등을 강의한다. 세분적인 강의 주제로는 세균의 생리, 유전적 다양성, 대장균의 세포분열, 해양세균의 반응작용, 자세세균의 광합성, 성호조제, 항생제발생, 균유전, 형태변화 등의 내용이 포함한다.

Microorganisms display diverse physiological and morphological characteristics under diverse environments. The purpose of molecular microbiology is to understand the basics of these diverse life phenomena at the level of molecules involved and their interactions. This course introduces the characteristic functions of microorganisms, the gene regulations that underlie these functions, the signal transduction pathway from environment to gene expression, the interaction of participating molecules. Specific themes include genetic and physiological diversity, bacterial cell division, lumen cesence, photosynthesis, nitrogen fixation, antibiotic synthesis, morphological differentiation.

신경생물학특론 3-3-0

Advanced Neurobiology

아직까지 신경의 역할로 재배하는 과학적 과제가 두려웠으므로 발생하는 의식과 정신작용을 생물학적으로 규정하는 것이다. 본 과목에서는 신경계에 대한 다양한 기능과 신호를 원리로 설명하는 것을 목표로 한다. 따라서 신경세포의 분화 및 세포생물학, 중추신경계의 구조와 기능, 신경계 발생과정, 신경, 운동계를 포함한 시스템 신경과학, 고차원적인 인지기능의 신경생물학적 이해 등이 논의에 다뤄진다. 신경생물학 전공의 다양한 교수들이 세부 전공별로 강의에 참여하게 된다.

The goal of neuroscience is to help students understand the biological mechanisms that account for consciousness and mental processes. This lecture covers the basic principles of the nervous system. We look at cellular and molecular biology of the nerve cell, synaptic transmission, anatomy and function of central nervous system and neural development, control of higher functions, function of the limbic system, and cognitive neuroscience of thought, language, and emotions. Faculty members of diverse expertise in neuroscience participate in the lecture.

생태학특론 3-3-0

Advanced Ecology

인간의 급속한 증가, 산업화 방식 및 인간의 활동은 자연계체의 변이를 초래하였다. 다양하게 자연계체가 어떻게 운용되며 생물체와의 상관관계를 계계적이고 구체적으로 규정하기 위한 생태학의 중요성이 대두되었다. 특히 극단에서는 자연계체가 어떻게 대응하는 지에 대한 연구가 주 관심대상이다. 이 과목에서는 생태계의 계계 개발, 생명체의 분포, 환경의 작용, 균균생태학, 개체군생태학, 생태 계계학에 대하여 깊이 있게 다루게 된다.

Students in this class study and carry out projects in the following areas: the methods for analyzing distribution, factors that limit distributions, the problem of abundance, species intersections, population regulation, applied problems, community change, organization, biodiversity, energy flow and nutrient cycles.
High-throughput molecular biological methodology and genomics are introduced. From these bases, students learn how to analyse data in shotgun sequencing projects, EST projects and other biological methods used in the present genomics.

Selected topics in biochemistry are reviewed in this course. The course is consisted of student presentations and discussions on current developments in biochemistry.

Recent progress and problems in development of flowering plants are also discussed.

Advanced Biochemistry

Clinical Microbiology

Molecular and Cellular Biology

Molecular and Cellular Biology 2

Special Studies in Organismal Biology
This course is designed to lecture advanced techniques and themes in organismal biology. The graduate students will benefit efficient planning and performance in laboratory research from this practical course.

**3344.632 식물과학특론 3-3-0**  
*Advanced Plant Science*

Plants as an autophor display unique developmental patterns different from other life forms. This course aims to teach students with in depth knowledge of plant sciences in essential disciplines including physiology, biochemistry, molecular biology, genetics, and developmental biology. After taking this course, students will obtain both fundamental concepts and current trends of modern plant biology.

**3344.633 미생물학특론 3-3-0**  
*Advanced Microbiology*

This course will deal with new exciting concepts in microbiology that cannot be considered in an undergraduate course. Topics will include biology of bacteria, archaea, viruses and eukaryotic microorganisms; industrial microbiology; new concepts in pathogenicity of microbes; and evolution.

**3344.635 개체생물학세미나 1 1-0-2**  
*Seminar in Organismal Biology 1*

This course surveys contemporary topics of molecular and cellular biology. Students evaluate, interpretate and discuss a wide range of papers and conduct research in connection with various fields of biology.
Advanced Immunology

This course is for graduate students who took basic immunology course. Research strategy, methodology, and interpretation of results are discussed. Characteristics and functions of genes and proteins controlling the immune response are studied. Function of cells, organs, cell to cell interaction, differentiation and development of immune cells are discussed.

Advanced Microbial Physiology

This course introduces physiology and biochemistry of microbial processes. Topics covered include the following: nutrient availability and cellular structure; structure and synthesis of membranes and cell wall; transport of molecules into the cell; secretion of proteins from the cell; coupling of growth, DNA synthesis and cell division; chemotaxis; nitrogen fixation; starvation and quorum sensing; photosynthesis; and adaptive and developmental changes of prokaryotes and yeast prion.

Cell Signaling

This course explores the cellular signaling pathways involved in cell differentiation, proliferation, and regulation of cellular processes in response to extracellular stimuli. Emphasis is placed on the cross-talk among signaling components.

Advanced Enzymology

Integrated functions of enzymes which regulate metabolism and other physiological activities are studied. A special emphasis is given to the protein structures, reaction mechanisms between the enzyme and substrate and the regulation of enzyme activity.

Biology of Membranes

This course is offered to graduate students in the School of Biological Sciences. Systematic mycology, morphology, cytology, evolution, physiology, ecology, as well as applied mycology are covered and audio-visuals including slides, videos, and internet are used in the lecture.
대학원과정에서는 심도 있게 동물 및 인간 행동의 진화와 생태를 다루기 위한 자격과정에 입각하여 분석한다. 행동연구에 사용되는 여러 현대생물학적 방법론을 자세하게 소개한 후 동물들의 의사소통, 행동의 자유도, 인간의 진화, 동물의 생존전략, 성의 기원과 생태, 사회행동의 진화 등의 주제들을 강의하고 토론한다.

This course analyzes the origin and evolution of various kinds of behavior through the study of genetics, ecology, and evolutionary biology. Topics discussed include Darwinian theory of natural selection, mechanisms of behavior, communication, sexuality, sociality, and cognition.

3344.770 진화생물학특론 3-3-0
Advanced Evolutionary Biology
본 과목에서는 생물학의 기본 개면 중의 하나인 진화의 기작에 대해서 심도 있게 배우게 된다. 주요 내용은 단세균의 진화론, 개체군의 진화, 종의 기원, 계통 및 분화, 생물학적 종의 개념, 분화가 진행되며 진화의 규모와 속도 등이 포함된다.

In this course, we will dealing with mechanisms of evolution. In detail, we will investigate Darwin’s evolution view, evolution of populations, origin of species, phylogeny and systematics, biological species concepts, speciation and micro-evolution and macro-evolution.

*3344.771 분자세포생물학세미나 1 1-0-2
Seminar in Molecular and Cellular Biology 1
본 세미나는 생물학 분야에 속하는 최근의 중요 연구에 대한 문헌의 고찰을 중점적으로 다루는데, 전 분야에 대한 최근의 연구동향을 review하여 보고 해시 박람회를 이루며 각자의 관점과 유기적인 관계를 통해 학문을 수행할 수 있는 컨텍스트와 성장을 향상시킬 수 있는 기회를 마련하도록 한다.

This course surveys contemporary topics of molecular and cellular biology. Students evaluate, interpretate and discuss a wide range of papers and conduct research in connection with various fields of biology.
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**3344.772**  
**Seminar in Molecular and Cellular Biology 2**

Students evaluate, interpretate and discuss a wide range of papers and conduct research in connection with various fields of biology.

**3344.803**  
**Research and Reading**

This course is offered to graduate students preparing theses. Students review and discuss special problems in research projects.

**M1410.000300**  
**Principles of Systems Biology**

Principles of Systems Biology

**M1410.000500**  
**Glia Biology**

Glia biology

**3344.772**  
**Seminar in Molecular and Cellular Biology 2**

Seminar in Molecular and Cellular Biology 2

**M1410.000600**  
**Biological Paper Writing 1**

Biological Paper Writing 1

This course will give instruction on how to write scientific papers, in English, for submission to international journals. Special emphasis will be placed on requirements for biological journals. Topics will include: the emergence of English as the standard language for scientific communication; advantages, disadvantages, and oddities of the English language; the art of scientific writing; organisation of a research paper; how to choose key words and write an abstract concisely; how to review literature and introduce the study; the need for specificity and rigour in methods; graphical and tabular presentation of results; interpretation of results; and discussion. Additional such as how to select a journal, good practice for submitting papers, and how to respond to editorial decisions will be covered. Writing assignments will give students realistic writing experience, with individual guidance and feedback.

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In Systems Neuroscience, the function of neural circuits and systems will be studied. This includes higher functions such as emotion, dream, bi-visual motor and reward systems etc.). In addition, this course includes higher functions such as emotion, dream, bi-

The inflammatory response is the body’s first system of alarm signals that are directed toward containment and elimination of microbial invaders. Uncontrolled inflammation has emerged as a pathophysiologic basis for many widely occurring diseases in the general population that were not initially known to be linked to the inflammatory response, including cardiovascular disease, asthma, metabolic disease, arthritis, and cancer. To better manage treatment, diagnosis, and prevention of these wide-ranging diseases, multidisciplinary research efforts are under way. The course is designed to give graduate students from diverse disciplines a greater understanding of the cellular and molecular mechanisms fundamental to inflammation and disease. Course content will include lectures and discussion on the inflammatory response overview, individual cell types, chemical mediators, immunomorphology, inflammatory diseases and animal models of inflammation.

Advanced Genomics

21세기에서 가장 혁신적인 기술적 발명 중 하나가 대용량 고속 염기서열 결정법이다. 그 중 차세대 염기서열결정법은 인간질병의 분자적 원인 규명 뿐 아니라 치료법 개발에 새로운 패러다임을 제공하였고 기초생물학 연구의 전반에 있어서 연구의 양과 질적 성장은 많은 기여를 하고 있다. 이러한 생물정보학이나 시스템 생물학 같은 새로운 학문 분야를 확립하는 데 결정적 기여를 하였다. 본 강좌에서는 최근에 개발된 유전자연구기술의 기본 원리와 이 기술을 어떻게 응용하는지에 대하여 최근 연구 동향을 이해하고자 하는 것을 목표로 한다.

One of the most innovative inventions is high-throughput DNA sequencing technology. Especially, the development of so-called next generation sequencing (NGS) provided a new paradigm in the research of molecular basis of diseases and the development of disease therapeutics and treatments. NGS also contributed to acquiring basic knowledge in biological science, and to establishing new academic field such as bioinformatics and systems biology. This lecture is aimed to introduce the principle of newly developed sequencing technologies and its application.
M1410.001200 현대생물학 콜로키움 1 3-3-0
Modern Biology Colloquium 1

본 교과목 분자세포생물학을 중심으로 최근 연구동향에 대하여 교수 및 학생들에게 소개를 하고 개별 연구실 단위에서 진행 중인 연구 내용과 연구 계획에 대하여 집중 논의한다.

Modern Biology Colloquium 1 focuses on Molecular Cell Biology. In this colloquium, faculties will present current issues and hot topics and discuss their own research outcomes and future plans with students and other faculties.

M1410.001300 현대생물학 콜로키움 2 3-3-0
Modern Biology Colloquium 2

본 교과목 생태학과 진화생물학을 중심으로 최근 연구동향에 대하여 교수 및 학생들에게 소개를 하고 개별 연구실 단위에서 진행 중인 연구 내용과 연구 계획에 대하여 집중 논의한다.

Modern Biology Colloquium 2 focuses on Ecology and Evolution. In this colloquium, faculties will present current issues and hot topics and discuss their own research outcomes and future plans with students and other faculties.

M1410.001400 현대생물학 콜로키움 3 3-3-0
Modern Biology Colloquium 3

본 교과목 발생생물학과 개체생물학을 중심으로 최근 연구동향에 대하여 교수 및 학생들에게 소개를 하고 개별 연구실 단위에서 진행 중인 연구 내용과 연구 계획에 대하여 집중 논의한다.

Modern Biology Colloquium 3 focuses on Developmental Biology and Integrative Biology. In this colloquium, faculties will present current issues and hot topics and discuss their own research outcomes and future plans with students and other faculties.

M1410.001500 현대생물학 콜로키움 4 3-3-0
Modern Biology Colloquium 4

본 교과목 현대 식물학과 미생물학을 중심으로 최근 연구동향에 대하여 교수 및 학생들에게 소개를 하고 개별 연구실 단위에서 진행 중인 연구 내용과 연구 계획에 대하여 집중 논의한다.

Modern Biology Colloquium 4 focuses on Modern Plant Biology and Microbiology. In this colloquium, faculties will present current issues and hot topics and discuss their own research outcomes and future plans with students and other faculties.
3345.551 중권기상학 3-3-0

**Synoptic Meteorology**

중위도 지방 저기압의 형성, 발달 및 소멸과정을 강의한다. 전신 현상의 원리와 상호 작용 내부의 관계를 설명한다. 저기압과 강수형성 기후의 역학을 알아본다.

In this course we try to understand the genesis, development, and dissipation of the mid-latitude cyclones. We deal with the relationship between fronto-genesis and the upper level jet stream. We will talk about the cyclones and accompanying precipitation processes.

3345.552 대규모대기역학 3-3-0

**Large Scale Dynamics of Atmosphere**

대기에서 일어나는 여러 규모의 현상 중 주로 대규모 현상을 역학적으로 설명한다. 중권규모 운동의 특성을 토하고 대기의 전동, 중권으로 순환 및 대기상순환을 다룬다. 특히 대기불안정 문제, 이와 관련된 중권계의 발생기구 및 대규모 기상현상들에 대한 역학적 접근 등이 주요 과제이다.

The large-scale motions among meteorological phenomena of various scale are mainly studied by using dynamical analysis. The features of synoptic-scale motion, atmospheric oscillations, mesoscale circulation and general circulation are discussed. Especially, the atmospheric instability, the development mechanism of unstable synoptic system and dynamic approach for large-scale meteorological phenomena are main topics.

3345.553 미기상학 3-3-0

**Micrometeorology**

이 과목은 대기과학 전공자를 위한 대학원 교과목으로써 인간이 거주하는 대기 최하층인 surface layer, planetary boundary layer에서 일어나는 여러 현상을 파악하는 몰리크, 역학적 현상과 더불어 화학물질들의 퍼짐을 설명하는 화학적 현상을 다룬다. 구체적으로는 혼합층의 안정구조, 난류, 지표의 에너지 관형도에 대한 이론들을 공부하고 나아가 실제 일기예보 및 기후연구에 사용되는 수치모수화 및 여러 스키마들에 대해 공부하고 간단한 상황에 적용할 수 있는 모델 코드를 작성하는 부분이 포함되어 있는 과목이다.

This class is an upper division elective course for graduate students with atmospheric sciences majors. It is an introductory course on the earth's atmospheric boundary layer (ABL), roughly the lowest kilometer of the atmosphere adjacent to the surface. Topics include mean vertical structure of ABL, turbulence and vertical turbulent fluxes in the ABL, surface energy balance, mathematical parameterization of ABL used in weather and climate models, mesoscale circulations driven by ABL processes, and applications to such topics as air pollution dispersion and wind speed assessment for wind energy.

M1411.000800 대기수치모델링 및 실습 1 3-2-2

**Numerical Modeling of the Atmosphere and the Practice 1**

대기과학연구에 필수적으로 이용되는 대기 전자구 모델 및 일기예보 모델의 구조는 구상하는 대기과학 코어 및 자료트라이널 시스템에 이용되는 다양한 수치적인 방법들을 공부한다. 실습시간에는 실제 현업 모델 혹은 단순화된 현업 모델을 이용하여, 대기과학 코어 및 자료트라이널 시스템이 실제 기상현상의 수치모델에 있어 어떻게 이용되는지 이해할 수 있는 기회를 갖는다.

The goal is to obtain a fundamental understanding of the basic numerical techniques used in the atmospheric dynamic core and the data assimilation system that form the foundation of the atmospheric general circulation model (GCM) and weather prediction model (NWP). During the practice, the students will have a chance to practice the class materials with the operational GCM/NWP or simplified models.

M1411.000200 대기난류 및 경계층 3-3-0

**Atmospheric Turbulence and Boundary Layer**

난류의 근본적 특성을 해석하고, 대기의 난류 현상을 이해하도록 한다. 난류의 원천, 특성 및 스키마, K-이론 및 적용방법, 난류 에너지수저, 경계층에서의 난류 특성, 혼합층의 형성 및 발달 과정, 상층형식, 난류에너지의 스펙트럼 분포 및 깊이 케인스케일 (cascade) 이론 등에 대한 이해를 바탕으로 하여, 대기의 난류 현상은 이해할 수 있도록 한다.

This course studies the physics of turbulence, which includes the origin of turbulence, methods of describing turbulence, similarity theories, spectral analysis and energy cascade.

M3345.559 대기대순환 3-3-0

**Atmospheric General Circulation**

대규모 대기순환 형태와 이 대기순환을 유지하는 데에 필요한 에너지-운동량 보존 법칙을 공부한다. 헤들리, 페럴 순환의 유체 필수적인 복사-대기 에너지와 에너지의 역할을 이해하고 에너지의 생성, 변환, 소멸 과정을 설명한다.

This course aims to learn some basic requirements of large-scale atmospheric circulations, energetic and angular momentum conservation. In particular, effects of radiation-convective energy and eddies on the maintenance of Hadley and Ferrel circulations and processes of energy generation, conversion, and dissipation are explained.

M3345.561 열대기상학 3-3-0

**Tropical Meteorology**

열대지방에서 나타나는 일기의 특성을 이해하고 열대와 중위도 사이의 일기현상의 상호작용을 규정한다. 주요 내용으로는 지구물 리료와 중권규모의 일기계, 열대의 대기순환과 요란, 대류적 운의 역할, 열대지방의 대기공동, 열대성 지표와 계절풍과 관련 문제들이 다루이진다.

This course focuses on the understanding of characteristics of tropical weather and investigating tropics-extratropics interaction. The major topics of this course are global and synoptic weather system, general circulation and disturbances in tropics. The role of convective system, atmospheric wave dynamics, tropical cyclone and monsoon related problems will be studied also.

3345.564 구름물리학 3-3-0

**Cloud Physics**

구름 내부에서 일어나는 미세물리 과정과 기본적인 구름 역학을 이해한다. 레일리-베나르 대류, 구름 미세물리학과 강수과정, 적
the space science and technology.

In order to educate the ways of dealing with weather data, and its application and distribution, I will deal with the unique characteristics of the weather data, the adoption of GIS basics and its techniques for meteorology.

3345.601B 환경지구학 3-3-0
Environmental Geochemistry


This course introduces basic principles and methods of gas geochemistry for environmental change in the earth system. Especially, emphases is placed on interactions among geosphere, hydrosphere, atmosphere, biosphere and cryosphere, that compose the earth system. The main topics include cycling of substances, trace gas and climate change, cryospheric change and origin of geological materials.

3345.602 변성암석학특론 및 실험 3-2-2
Advanced Metamorphic Petrology and Lab.

변성암을 이해하는 데 필수적인 개념들을 다루며, 주된 내용은 성화장, 자유온장, 운도-압력-시간 영역, 변성지질구조 등을 포함한다. 강의 진행정도에 따라 우리나라 변성암체에 대한 소개 및 성안론 해석이 포함될 것이다. 강의는 우리나라 뿐만 아니라 외국의 유명한 변성암대에서 산출하는 변성암 시료에 대한 관찰 및 성인연구를 주로 한다.

Major topics including phase equilibria, geothermobarometry, P-T-t path, and tectonometamorphism are addressed. In addition, tectonic evolution of metamorphic complexes in Korean Peninsula is discussed. Students in this course examine various metamorphic rocks collected from famous metamorphic complexes in Korea and other countries.

3345.603 안정동위원소지구화학 및 실험 3-2-2
Stable Isotope Geochemistry and Lab.

안정동위원소는 지구시스템과학을 비롯한 다양한 자연과학 분야에서 목각물 연구수단으로 이용되어 오고 있다. 특히 약석 및 광석의 성형연구, 고기와 고치리 연구, 퇴적현상 연구, 해양에서의 수질 및 대기오염원의 추적 연구 등 여러 분야의 연구가 가능하다. 자원지질분야에서는 광상과 연관된 모양 및 광상의 생성과정 및 기원과학의 추적자로 활용하여 광상의 기원연구와 탐사에 이용되고 있다. 그 외에도 인간활동과 연관된 환경변화 monitoring에도 이용된다. 따라서 이 강의는 향후 지구시스템과학에서 안정동위원소를 활용할 수 있는 기본 지식을 습득하고자 해석자료의 해석을 포함한 교육이다.

Principles governing the distributions of stable isotopes in igneous, metamorphic, and sedimentary environments are addressed. The mass spectrometry and sample preparation techniques used in the isotopic analysis of the various samples in nature including silicates, sulfides, carbonates, water, and carbonates are introduced with an emphasis of application of petrology and resource geology.
This is an advanced sedimentology and stratigraphy course. Diverse topics such as siliciclastic, carbonate, and other chemical sediments are addressed in detail with a special emphasis on provenance, tectonic setting, diagenesis, and geochemistry. The course is offered in two modes; lecture and seminar. Student presentations are given on recent developments in the field of sedimentary geology and stratigraphy.

Hydrogeology

Water cycle, occurrence and flow of groundwater, transport of contaminants in subsurface waters are main topics of this course. The characteristics of porous and fractured media in terms of groundwater flow and contaminant transport are studied along with fluid dynamics and stochastic theory.

Methods in Geomicrobiology

This lecture introduces microbiological and low-temperature geochemical techniques commonly used in geomicrobial research. The first half of the lecture covers essential concepts of stable isotope mass-spectrometry, organic bio-geochemistry, redox geochemistry, and molecular biology. In the later half, we will review major outstanding questions in the field of geomicrobiology, and learn common approaches to solving these problems.

Remote Sensing Data

The volume of remote sensing (spatial) data has grown significantly in recent years as the number of satellite use has been rapidly increasing. To efficiently process large volume of multi-source (multi-sensor) remote sensing data, special data handling and processing techniques are needed. In this course, students study the background rationale and approaches in processing and handling the Earth observing remote sensing (spatial) data.
3345.652 해류학 3-3-0
Ocean Currents

이 교과목에서는 해류와 대기를 이해하는데 있어 필수적인 역학적 개념을 다루는 지구유체역학의 주요 주제를 다루며, 지구유체역학에서 다루는 유체는 지구표면과 수직 상층의 영향을 받는다. 이 교과목에서 다루는 포텐셜과도 방정식, 해류역학, 현상과 지형, 순서회전 역학과 해양 대순환에 있어 마찰의 영향과 해양의 풍류순환에 관한 이론 등이다.

The content of this course is mainly based on core subjects in geophysical fluid dynamics, whose concerns are fundamental dynamical concepts essential to an understanding of the atmosphere and ocean. Earth’s rotation and vertical stratification characterize the fluid which we deal with through this course. The course will cover the potential vorticity equation, shallow water dynamics, planetary and topographic waves, quasi-geostrophic dynamics, effects of friction on a planetary scale, and basic theoretical frames for ocean’s wind-driven circulation.

3345.653 조석이론과 분석 3-3-0
Tide Theory and Analysis

조석의 발생, 전파, 소멸에 관련된 조석이론을 다루고, 속임수 및 경상 조석 현상을 기술하는 (내부)조석과 역학 이론을 학습하며, 또 실제 해양에서 최근 관측된 자료를 분석하여 수학한 관련 연구 결과들과 그 종류를 파악한다.

In this course we will examine tide theories on generation, propagation, and dissipation, and the dynamics of (external and internal) waves underlying both barotropic and baroclinic tides. We will also review relevant articles recently published in literatures by analyzing and interpreting the observational data.

3345.655 해조절학 3-3-0
Sedimentology

해조절학은 해조절이 생성, 응산, 퇴적되어도 퇴적으로 변화하는 과정을 연구하는 순수 자연과학의 한 분야이다. 해조절과 퇴적층에 관한 데이터를 기술하고 분석하여 해조절학을 규명하는 학문으로 순차층석학적 이론을 포함한다. 즉, 해조절학의 지배요인을 연구하는 학문분야이다.

Sedimentology studies the process of formation, transport and deposition of material, accumulated in continental and marine environments. The study of sedimentary processes and products allows us to interpret the dynamics of depositional environments and consequently controlling factors in a sequence stratigraphic framework.

3345.656 해저화학적지구화학 3-3-0
Geochemistry of Marine Sediments

해저화학적 지구화학은 해조절의 화학적 특성과 분포 및 기원을 다루는 강의이다. 주요 강의내용으로서는 해조절이 생성과 환경변 화학적 성질의 특성, 퇴적 후 처리, 조절물의 지화학적 특성의 해석 등이 포함된다.

This course will examine the chemical properties, distribution and origin of marine sediments. Main topics include geochemical properties of different sediment types and environments, early diagenetic processes of sedimentary deposits, and analyses of geochemistry data.
### Advanced Marine Natural Products Chemistry

This course deals with the marine natural products chemistry and biology. Topic that we will examine include: sophisticated bioassays, including immuno-modulating assays and receptor-based screening; the molecular aspects of bioassay; the stereochemistry of marine natural products chemistry.

**3345.661 대기-해양역학 3-3-0**

**Atmosphere-Ocean Dynamics**

The aim of this course is to understand the atmospheric and oceanic phenomena by the dynamical approach. We will discuss the characteristics of waves, mainly focusing on the middle latitudes and the tropics. In this course we will study the models and methodolgies to infer the dispersion and transport of various pollutants.

**3345.723 대기오염 및 분산 3-3-0**

**Air Pollution and Dispersion**

The objective of this course is to understand the basic numerical techniques used in various physics parameterizations (Planetary Boundary Layer, Convection, Cloud Microphysics, Cloud Microphysics, and Aerosols) that form the foundation of the atmospheric general circulation model (GCM) and weather prediction model (NWP). During the practice, the students will have a chance to practice the class materials with the operational GCM/NWP or simplified models.

**3345.725 중규모기상학 3-3-0**

**Mesoscale Meteorology**

The goal is to obtain a fundamental understanding of the basic numerical techniques used in various physics parameterizations (Planetary Boundary Layer, Convection, Cloud Microphysics, Cloud Microphysics, and Aerosols) that form the foundation of the atmospheric general circulation model (GCM) and weather prediction model (NWP). During the practice, the students will have a chance to practice the class materials with the operational GCM/NWP or simplified models.

**3345.726 대기파동 3-3-0**

**Atmospheric Waves**

Rossby wave is a type of atmospheric wave that is particularly important in Rossby wave dynamics. Main topics of this course include conservation theorem, Rossby waves, wave-mean flow interaction, instability, meridional dispersion, critical and turning latitudes, multiple equilibria, and three-dimensional wave propagation.

**3345.729A 중층대기역학 3-3-0**

**Middle Atmosphere Dynamic**

The aim of this course is to understand the dynamics associated with the characteristics of the large-scale atmospheric waves—particularly the Rossby waves. Main topics of this course include conservation theorem, Rossby waves, wave-mean flow interaction, instability, meridional dispersion, critical and turning latitudes, multiple equilibria, EP flux, and three-dimensional wave propagation.

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**M1411.00900 대기수치모델링 및 실습 2 3-2-2**

**Numerical Modeling of the Atmosphere and the Practice 2**

The objective of this course is to understand the basic numerical techniques used in various physics parameterizations (Planetary Boundary Layer, Convection, Cloud Microphysics, Cloud Microphysics, and Aerosols) that form the foundation of the atmospheric general circulation model (GCM) and weather prediction model (NWP). During the practice, the students will have a chance to practice the class materials with the operational GCM/NWP or simplified models.
In this course we will study the dynamic phenomena in the middle atmosphere and the dynamic which will help our understanding of the phenomena. We will focus on the zonally-averaged formulations and linear wave theory to represent the inviscid dynamics. The dynamics phenomena of the middle atmosphere include sudden warming of the stratosphere, quasi-biennial and semiannual oscillations in the tropical wave phenomena, transport of minor gases, and interactions of the stratosphere and troposphere.

**3345.733** 대기과학특강 2 3-3-0  
Topics in Atmospheric Sciences 2

The aim of this course is to improve the ability to conduct research. Students will read various papers on the current issues in atmospheric science and are encouraged to apply the new methodologies to their own research.

**3345.734** 대기화학 3-3-0  
Atmospheric Chemistry

Even the smallest concentration of minor gases in the atmosphere can be a direct/indirect cause of atmospheric phenomena such as acid rain, photochemical smog, and depletion of ozone layer and can bring about significant climatic phenomena such as acid rain, photochemical smog, and depletion of ozone layer. The small concentrations of minor gases can have a large impact on the environment due to their indirect effects on the environment. For example, the smallest concentration of minor gases in the atmosphere can act as a catalyst for chemical reactions, leading to the formation of harmful substances such as sulfuric acid and nitrogen oxides. These substances can then react with other gases in the atmosphere, leading to the formation of acids and smog, which can have serious health and environmental effects.

**3345.735** 대기복사학 3-3-0  
Atmospheric Radiation

This course is for the application of the principles of radiative transfer to modern problems in the atmospheric sciences. Portions of this course provide the fundamental theoretical and mathematical background to problems encountered in radiation physics as applied to planetary atmosphere. Students will also study the techniques of radiative transfer, particularly parameterization techniques, that have wide applications in remote sensing, climate modeling, and diagnostic studies.


**3345.746**

*Seminar in Paleobiology*

This is specialized research course in sedimentary geology. Topics dealt with in the course include siliciclastic, carbonate, and other chemical sediments as well as reconstruction of paleogeography, thermal history, and paleoclimate. Individual student researches are conducted.

**3345.747**

*Advanced Study in Resource Geology*

This lecture makes students experience for themselves handling and interpretation of data dealing with spatial data processing. Course format is individualized and dependent upon size of enrollment.

**3345.749**

*Recent Advances in Geophysics*

This is advanced study course on modern geophysics and will be given two or three times a week for 12 weeks. Basic geophysical theories, data analysis, and inversion techniques, which are necessary to research on various geophysical problems, are taught with practical exercises.

**3345.751A**

*Workshop in Earth System Observation Science*

This course covers diagnosis and prognosis of soil/groundwater environments, characterization of the fate and transport of contaminants in subsurface environments, and study of remediation measures.

**3345.752**

*Topics in Environmental Geology*

This is a graduate course on advanced techniques in Earth observation science with specific applications to be chosen by the students. Course format is dependent upon size of enrollment.

**3345.753A**

*Topics in Geophysics*

Students study basic geophysical theories, data analysis, and inversion techniques, which are necessary to research on various geophysical problems. They also learn how to apply these techniques to different subjects arranged in each semester.
### Topics in Exploration Geophysics

**3345.754**

This lecture is to provide graduate students with an introduction to the theory of geophysical fluid dynamics. The focus of this lecture is the application of fluid mechanics to the dynamics of large-scale flows in the oceans and atmosphere. Students will review various geophysical methods for exploring the shallow structure of the Earth. Students will also examine theories of gravity, geomagnetism, seismology, geoelectricity and electromagnetism applied to exploration along with methods of data acquisition and processing. There will be emphasis of applications to environmental problems, geotechnical engineering, and geological hazards in case studies.

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<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>3345.754</td>
<td>Topics in Exploration Geophysics</td>
<td>3-3-0</td>
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</tbody>
</table>

### Topics in Geochemistry

**3345.755**

This course is designed to examine new and significant developments in the field of geochemistry, focusing on a specific theme each semester. The format is mainly student presentations and discussions with supplementary lectures. Topics include application of isotope systems to geochronology, paleoclimate, and Earth surface processes.

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<td>3345.755</td>
<td>Topics in Geochemistry</td>
<td>3-3-0</td>
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</tbody>
</table>

### Physical Oceanography of the Coastal Processes

**3345.761**

This course is designed to examine new and significant developments in the field of geochemistry, focusing on a specific theme each semester. The format is mainly student presentations and discussions with supplementary lectures. Topics include application of isotope systems to geochronology, paleoclimate, and Earth surface processes.

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<tbody>
<tr>
<td>3345.761</td>
<td>Physical Oceanography of the Coastal</td>
<td>3-3-0</td>
</tr>
</tbody>
</table>

### Topics in Theory of Ocean Circulation

**3345.762**

This lecture is to provide graduate students with an introduction to the theory of geophysical fluid dynamics. The focus of this lecture is the application of fluid mechanics to the dynamics of large-scale flows in the oceans and atmosphere.

<table>
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<tr>
<td>3345.762</td>
<td>Topics in Theory of Ocean Circulation</td>
<td>3-3-0</td>
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</table>

### Topics in Ocean Waves

**3345.763**

This lecture is to provide graduate students with an introduction to the theory of geophysical fluid dynamics. The focus of this lecture is the application of fluid mechanics to the dynamics of large-scale flows in the oceans and atmosphere.

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<tr>
<td>3345.763</td>
<td>Topics in Ocean Waves</td>
<td>3-3-0</td>
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</table>

### Topics in Marine Geochemistry

**3345.767**

This course will examine the recent research trends and developments in the study of marine geochemistry. Topics vary from semester to semester.

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<tr>
<td>3345.767</td>
<td>Topics in Marine Geochemistry</td>
<td>3-3-0</td>
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</table>

### Topics in Marine Ecology

**3345.769**

This course will examine the recent research trends and developments in the study of marine geochemistry. Topics vary from semester to semester.

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<tbody>
<tr>
<td>3345.769</td>
<td>Topics in Marine Ecology</td>
<td>3-3-0</td>
</tr>
</tbody>
</table>

### Topics in Sediment Assessment

**3345.770**

This lecture is to provide graduate students with an introduction to the theory of geophysical fluid dynamics. The focus of this lecture is the application of fluid mechanics to the dynamics of large-scale flows in the oceans and atmosphere.

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<tr>
<td>3345.770</td>
<td>Topics in Sediment Assessment</td>
<td>3-3-0</td>
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</table>
items, methods, and criteria for the evaluation. We will fi-
nally discuss the possibilities of applying such practices into
our system.

*3345.771 지구환경과 해양미생물특강 3-3-0
Topics in Earth Environments and Marine
Microbes

지구의 생지화학적 순환에서 해양미생물들의 역할, 지구환경 조
절 기능의 해양미생물, 여러 극한환경에서의 생존 및 생화학적 작
용, 해양미생물을 이용한 환경의 개선 및 정화, 해양생물의 질병
및 역학, 그리고 해양생물공학을 다룬다.

Major topics dealt with are roles of marine microbes in
biogeochemical cycles on earth and in controlling earth envi-
ronments, survival and biochemical adaptation of the mi-
crobes in various extreme environments on Earth. Further,
environmental remediation using the microbes, diseases and
epidemics of marine lives and marine biotechnology are
discussed.

*3345.772 생물해양학특강 3-3-0
Topics in Biological Oceanography

생물해양학분야의 최근 연구과제에 대하여 학기에 따라 주제를
선택하여 학생들에게 해양에서의 해양생물학적 연구와 해양
생물의 생화학적 역할, 그리고 해양생물학적 주제에 대해 강
의와 논고를 하며 강의가 구성된다.

This course focuses on the interaction of biological and
abiotic processes that govern the ocean. We will have dis-
cussions on ecology, applying foraging theory and analytic
formulation of encounter roles of predator and prey as or-
ganizing principles. Discussion topics include the differences
between marine and terrestrial environments which arise pri-
marily from the ways in which deposit feeders process
muds, suspension feeders extract particles, bacteria absorb
solutes, and marine plants gather nutrients and light.

*3345.773 환경화학특론 및 실험 3-1-4
Advanced Environmental Chemistry and
Lab.

지구환경의 제문제를 강의를 통하여 소개하며 이를 실제적으로
연구하기 위한 실험방법을 실험을 통하여 소개하고 운용기법을 체
험하는 것을 주목적으로 한다. 

In this course we will examine the various problems of
the earth environment and conduct experiments to investigate
the experimental methods to make practical research on these
problems. Students will acquire modern practical observing
methods such as mass analytic tools, AMS, and air environ-
mental observing system and develop the skills to apply
these methods in their own research.

*3345.774A 해양신약특강 3-3-0
Topics on Marine Drugs

본 과목에서는 해양천연물신약개발에 필요한 신규 약물발견
및 신약 개발 관련의 신호전달계, 이를 기반한 각종 생리활성검사방
법, 신약개발에 대한 근본적 과정, 약물 동력학 및 기초 독성검
증, 전임상 및 임상시험 등 해양천연물산약 개발 전반에 대해 심
도 있게 다루고자 한다. 대상 질환에 대해서는 다양한 주제가 학
기별로 다루어진다.

This course will cover a comprehensive topic on marine
drug discovery and development. Students will also conduct
their own research on a topic of their choice in marine
drugs such as novel drug targets, underlying physiology of
human diseases, animal disease models, lead optimization,
ADME-PK, preclinical trials, clinical trials and design and
etc. Their research will be presented in the class. The time
limit for the presentation will vary according to the size of
classes. Presentations must be given in English. After each
seminar, students will have a discussion on the ways to im-
prove their presentations.

*3345.775 화학해양학특강 3-3-0
Topics in Chemical Oceanography

이 강좌에서는 해양환경에 대한 화학적인 접근을 통하여 해양
및 이를 통한 지구환경시스템에 대한 물질순환 기계, 지구환경의
변화 과정 및 해양천연물의 이용 등에 대한 이해를 목표로 하여
각 학기별로 주제를 정하여 심화학습하게 된다.

The objective of this course is to understand the process of
element circulation and changes in the earth environment,
and the utilization of marine natural products. Topics for in-
tensive discussion will be assigned each term.

*3345.776 해양세미나 3-3-0
Seminar in Oceanography

학생들이 해당 학기 중 선발된 주제에 대하여 연구하게 하며,
또한 강의시간 중 이를 발표하고 서로 토의하는 형식으로 강의와
해양세미나에 참여하게 한다. 

In this course students will do research on selected topics
and discuss them in class. This course will acquaint students
with new research areas and help them develop skills to
make presentations on their research.

*3345.777 지구환경과학세미나 3-3-0
Seminar in Earth and Environmental
Sciences

이 과목은 지구환경과학부 대학원 과정에 입학한 수강생 전원
이 필수적으로 이수하여야 할 통년과정의 세미나 과목의 하나로서
1, 2학기 개설되는 과목이다. 현재 지구환경과학부를 구성하는 6개
의 연구분야에서 각 2주씩의 세미나를 담당하여 수강생들에게 폭넓
은 지구환경과학 전반에 걸친 연구를 제공하게 하며, 그 외에도
여러 주제에 대해 강의를 하는데 주목적이 있으므로, 이에 따라
수강생 주제를 설정하여 발표하는 과정을 통한 논문 발표 능력을 향상시켜내는데 강의의 주요 목표를 삼고 있다.

This course is the one of the mandatory courses every
graduate student in SEES has to take before graduation. The
purpose of the course is to introduce current research activ-
ities in Earth and Environmental Sciences. The six research
groups in SEES will be in charge of preparing the seminars
and each student has to prepare and present a term paper,
acquiring the skill for scientific presentation.
Atmospheric Remote Sensing

With recent advent of satellite technology, satellite measurements of atmospheric and surface parameters became indispensable in weather and climate analysis and studies, and thus satellite remote sensing can be considered to be important area in atmospheric sciences. In this course, we focus on understanding the basic interactions between radiation and the atmosphere, and how weather and climate data can be obtained from satellite remote sensing. Also focused on are satellite data applications including water and energy budgets, atmospheric physical processes, data assimilation, and climate analysis.
This course is to provide a basic understanding of brain disorders to graduate students at the advanced level. We will teach pathophysiological mechanism and related brain structural and functional abnormalities in psychiatric and neurological disorders. Students will obtain a basic understanding of cause, pathophysiology and treatment after taking this course.

M0000.01000 입상신경과학 I 3-3-0

Clinical Neuroscience I

본 강의는 임상상황에서 부딪히는 뇌 질환 (조현병, 우울증, 뇌 전증, 치매, 불안장애 등)을 이해하기 위해 병리적 기전과 관련된 뇌구조 및 기능을 이해하기 위한 심화 지식을 습득하는 것을 목표로 전문대학원생에게 가르치는 강좌임.

M0000.01100 입상신경과학 II 3-3-0

Clinical Neuroscience II

본 강의는 임상상황에서 부딪히는 뇌 질환 (조현병, 우울증, 뇌 전증, 치매, 불안장애 등)을 이해하기 위해 병리적 기전과 관련된 뇌구조 및 기능을 이해하기 위한 심화 지식을 습득하는 것을 목표로 전문대학원생에게 가르치는 강좌임.

M0000.000800 시스템 신경과학 I 3-3-0

Systems Neuroscience I

본 강의는 시스템 수준에서 뇌구조 및 기능을 대학원생에게 가르칠 목적으로 개설됨. 특히 신경회로들로 구성되는 시스템의 구조와 기능을 심도 있게 연구하기 위해 기초지식과 방법론의 습득을 목표로 함. 전통적으로 신경과학에서 많은 연구들 모델 시스템들에 바탕으로 시스템 신경과학에 대한 기초적인 수준의 이해를 목표로 함. 본 강의는 시스템 수준에서 뇌구조 및 기능을 대학원생에게 가르칠 목적으로 개설됨. 특히 신경회로들로 구성되는 시스템의 구조와 기능을 심도 있게 연구하기 위해 기초지식과 방법론의 습득을 목표로 함. 전통적으로 신경과학에서 많은 연구들 모델 시스템들에 바탕으로 시스템 신경과학에 대한 기초적인 수준의 이해를 목표로 합니다.

M0000.000900 시스템 신경과학 II 3-3-0

Systems Neuroscience II

본 강의는 시스템 수준에서 뇌구조 및 기능을 바탕으로 시스템에 구조적 기능적 긴밀성을 유지하는지 자세히 살펴보는 강의가 주를 이룸. 현재 시스템의 일반적 특성과 작용을 살펴 신경계가 이와 같은 기능을 수행하는 이유와 최근에 신경생리학 분야에서 새롭게 밝혀지고 있는 연구결과에 대해 학습한다.

M0000.001000 입상신경과학 세미나 I 3-3-0

Clinical Neuroscience Seminar I

입상신경과학 I에 이어서의 심화 강의로 입상경험과 적응기계는 연구 분야에서 전반적인 연구 방법을 활용하며, 뇌의 기능과 뇌 전증을 연구하여 뇌의 작용기계를 규명해나가고 있다. 이 과목에서는 어떤 연구들이 최근에 발견된 다양한 신경과학 분야의 연구들을 대상으로 언제 연구들이 연구내용을 합리적으로 해석하는 능력과 자료 전공대학원생에게 가르치는 강좌임.

M0000.001100 입상신경과학 세미나 II 3-3-0

Clinical Neuroscience Seminar II

입상신경과학 II에 이어서의 심화 강의로 입상경험과 적응기계는 연구 분야에서 전반적인 연구 방법을 활용하며, 뇌의 기능과 뇌 전증을 연구하여 뇌의 작용기계를 규명해나가고 있다. 이 과목에서는 어떤 연구들이 최근에 발견된 다양한 신경과학 분야의 연구들을 대상으로 타 연구들의 연구내용을 합리적으로 해석하는 능력과 자료 전공대학원생에게 가르치는 강좌임.

M0000.001200 고급 신경생리학 3-3-0

Advanced Neurophysiology

신경계는 내부배계와 더불어 대부분의 신체활동을 조절하는 기능을 가지고 있다. 이를 위해서 신경계의 수많은 정보를 받아들이고 통합하여 적절한 반응을 일으키고 있는데, 본 강좌에서는 신경계의 일반적인 특성과 작용을 살펴 신경생리학자 이와 같은 기능을 할 수 있는 이유와 최근에 신경생리학 분야에서 새롭게 밝혀지고 있는 연구결과에 대해 학습한다.

Human nervous system plays major role in regulating human physiology. To this end, it is optimized to receive, process, integrate, and respond to the external information. In this course, general characteristics and functions of the nervous system that enable such pivotal physiological roles will be addressed, and recent research topics in neurophysiology will be discussed.

M0000.001300 신경발생학 3-3-0

Neural Development

본 강의의 목적은 신경발생에 대한 신경관의 발생, 신경세포의 분화, 신경축삭 유도, 시냅스 형성 및 가소성에 대한 핵심적인 지식을 습득하는데 있다.

The goal of this course is to provide a contemporary overview of neural development, including neural induction, neurogenesis, axon guidance, and synapse formation and plasticity.
신경과학 분야는 신경생물학에서 인지과학에 이르기까지 다양한 연구 분야에서 전통적인 연구 방법을 활용하여, 뇌의 기능과 뇌 질환을 연구하여 뇌의 작용기작을 규명해나가고 있다. 이 과목에서는 학생들이 최근에 발표된 다양한 신경과학 분야의 연구들에 대상으로 타 연구진의 연구내용을 합리적으로 해석하는 능력과 자신의 연구를 도출하고, 연구내용을 다른 사람들에게 효과적으로 전달하는 능력을 기르다.

Neuroscience which covers neurobiology and cognitive sciences aims to understand how brain works through multi-disciplinary approaches in the context of physiological and pathophysiological brain conditions. This course aims to help students to develop fundamental skills in critical evaluation of the research from other neuroscientists and also generate own research topics and improve skill for effective presentation of research activities to audience.

★ M0000.001500 고급 신경과학 세미나 II 3-3-0

Advanced Neuroscience Seminar II

신경과학 분야는 신경생물학에서 인지과학에 이르기까지 다양한 연구 분야에서 전통적인 연구 방법을 활용하며, 뇌의 기능과 뇌 질환을 연구하여 뇌의 작용기작을 규명해나가고 있다. 이 과목에서는 학생들이 최근에 발표된 다양한 신경과학 분야의 연구들을 대상으로 타 연구진의 연구내용을 합리적으로 해석하는 능력과 자신의 연구를 도출하고, 연구내용을 다른 사람들에게 효과적으로 전달하는 능력을 기르다.

Neuroscience which covers neurobiology and cognitive sciences aims to understand how brain works through multi-disciplinary approaches in the context of physiological and pathophysiological brain conditions. This course aims to help students to develop fundamental skills in critical evaluation of the research from other neuroscientists and also generate own research topics and improve skill for effective presentation of research activities to audience.

★ M0000.001600 고급 뇌인지과학 I 3-3-0

Advanced Brain and Cognitive Science I

전통적으로 통증연구는 말초신경에서 통각이 발생하는 분자 세포 기전과 병적인 통증 상황의 신경계의 변화에 대한 연구가 주를 이루었으나, 최근에는 통증의 경우 감정적인 경험이 측면에서 통증 인지 과정의 중요성이 대두되고 있다. 이 과목에서는 학생들이 통증의 인지기작과 병적인 통증실태에 대한 최근 연구결과들에 대한 학습한다.

Traditionally, pain research has focused on understanding of molecular and cellular mechanisms of physiological nociception, and their changes in pathological pain conditions. Given that pain is a complex sensory and emotional experience, not only ‘nociception’ but also ‘cognitive processing’, which leads to the perception of pain and associated suffering, should be critical for the comprehensive understanding of pathophysiology of pain. This course is aimed to cover cognitive function and brain mechanisms of pain.

★ M0000.001700 시각신경과학 방법론 3-3-0

Methods in Visual Neuroscience

대학원생을 대상으로 한 고급 신경과학 과목이지만 의사결정 및 인지신경과학에 관심 있는 학부 고학년에게도 적당한 과목. 수강생들은 현재 의사결정의 신경과학에서 사용되는 기존의 개인과 군의 인지 과학을 익히고, 매주 2-3편의 고전적 및 최근 논문을 읽고, 구두 발표하고 토론하게 됨. 제출한 것들은 학단에 있다. 수강생들은 인지 및 시스템 신경과학에 대한 사전 지식이 있을 것이 가장이다.

This is an advanced graduate seminar class, but also suitable for seniors or advanced juniors in undergraduate programs interested in Decision Neuroscience. Students will (1) be introduced to a set of basic concepts in modern-day decision sciences, (2) read 2-3 classic and recent empirical/review articles every week, (3) presenting those research articles and leading discussion of those papers. Students are (not required but) expected to have taken classes on System and Cognitive Neurosciences.

★ M0000.001800 확률적 두뇌의 이해 3-3-0

Probabilistic Brain

대학원생을 대상으로 한 고급 신경과학 및 강의 과목이지만 격인 신경과학이나 의학에서 이루어지는 확률추론에 관심 있는 학부 과학 년계에도 적당한 과목. 수강생들은 현재 이론적 신경과학과 예학 행동에서 발견되는 확률추론에 관한 기존적인 모델 및 그 개념과, 학생들이 학년 2-3단의 과학적 및 최신 논문을 읽고, 구두 발표하고 토론하게 됨. 제출한 것들은 학단에 있다. 수강생들은 인지 및 시스템 신경과학에 대한 사전 지식이 있을 것이 가장이다.

This is a graduate lab class, but also suitable for seniors or advanced juniors in undergraduate programs interested in Vision or Cognitive Neuroscience. Students will (1) be introduced to a set of basic research techniques used in modern-day visual neurosciences, (2) learn to design/conduct/analyze classic types of visual neuroscience experiments, and (3) write scientific papers about those experiments and give oral presentation of them. Students are (not required but) expected to have taken classes on Neuroscience and Linear algebra, have some skills on computer languages and ready to invest more than 8 hours in extra-class lab activities per week.
This is an advanced graduate seminar and lecture class, but also suitable for seniors or advanced juniors in undergraduate programs interested in Computational Neuroscience with Probabilistic Inference in Brain. Students will (1) be introduced to a set of basic concepts in modern-day theoretical neurosciences and probabilistic representations in brain/behavior, (2) read 2-3 classic and recent empirical/review articles every week, (3) presenting those research articles and leading discussion of those papers. Students are (not required but) expected to have taken classes on System and Cognitive Neurosciences.

This seminar course aims to enable non-medical students to plan and conduct scientific researches on nervous system disorders via understanding the mechanisms of nervous system dysfunction and providing them with neurobiological, neuroimaging and cognitive research methods and techniques.

M0000.002800  
Seminars in Clinical Cognitive Neuroscience I

M0000.002900  
Seminars in Clinical Cognitive Neuroscience II

M0000.003000  
Seminar Series in Brain and Cognitive Sciences I

M0000.003100  
Seminar Series in Brain and Cognitive Sciences II

M0000.003200  
Practical skills & Ethics for Neuroscientist

M0000.002200  
Seminars in Systems Neuroscience I

M0000.002300  
Seminars in Systems Neuroscience II

M0000.002600  
Research on Nervous Disorders

M0000.002700  
Alzheimer’s Research I

M0000.002800  
Biology of Alzheimer’s disease

M0000.002900  
Medical and Scientific Perspectives on Alzheimer’s disease

M0000.003000  
Practical skills & Ethics for Neuroscientist
This course will teach graduate students how to become professional scientists especially in the field of neuroscience. The course will teach practical skills such as writing skills for academic papers and thesis, presentation skills, scientific communication skills, etc. The course will also include teaching research ethics.

Neuroscience Graduate Research Seminar

The goal of the course is for BCS graduate students to learn about basic concepts of molecular and cell biology. Lectures will focus on protein structure and function, regulation of gene expression, standard methods of cell analysis, biomembrane structure, transmembrane transport, protein targeting, vesicular trafficking.

Cell Structure and Function I

The course is designed for BCS graduate students to formulate and present a research project. All students who participate in the seminar will be expected to prepare a written research proposal, which is closely related to student's dissertation project, and to make at least one presentation to explain and defend the proposal to other participants.

Cell Structure and Function II

The goal of the course is for BCS graduate students to learn about basic concepts of cellular and molecular biology. The course will focus on cell signaling pathways, cell or- ganization and movement, cell cycle control, cell growth and differentiation, and basic histology.

Classical readings for cognitive learning and memory

The course is designed for BCS graduate students to learn about basic concepts of molecular and cell biology. The course will cover protein structure and function, regulation of gene expression, standard methods of cell analysis, biomembrane structure, transmembrane transport, protein targeting, vesicular trafficking.

M1426.000200 신경과학 연구 세미나 3-3-0

M1426.000400 세포의 구조와 기능 I 3-3-0

M1426.000500 세포의 구조와 기능 II 3-3-0

M1426.000600 학습과 기억 전문 연구워크숍 3-3-0

M1426.000800 분자 및 세포 신경생물학 I 3-3-0

M1426.000900 분자 및 세포 신경생물학 II 3-3-0
This course provides a general survey of the history of science from ancient times to the scientific revolution in the 17th century. The main purpose is to acquaint graduate students with some of the classics of influential scientists and a selection of recent scholarship in the history of science. Students are required to read not only important scholarly works of historians of science but also primary sources by Plato, Aristotle, Ptolemy, Galileo, Harvey, and Newton. Students’ major activities consist of reading the designated core reading materials and participating in presentations and discussions.

This course surveys major topics in the philosophy of science, especially the scientific method, scientific explanation, and the structure and function of scientific theories.
물리학의 철학 3-3-0

Physics of Philosophy

물리학의 중심개념 특히 시간-공간 이론 양자역학이론 등의 개념적 바탕을 인식론적 존재론적 바탕에서 분석, 검토한다. 또한 고전역학, 양자역학 등의 공리적 구조를 밝히고 그 타당성을 검토한다.

이 과목은 자연과학의 여러 분야에서 발생한 현상의 이론적 해석, 전문성의 구축과 이론적 구조를 분석, 검토한다.

생물학의 철학 3-3-0

Philosophy of Biology

생물학의 중심개념 특히 진화, 유전, 생리, 생물학이론 등에서 불가분의 역할을 하는 생물학의 해석적 해석방법론, 의학적 해석방법론, 그리고 생물학의 기술적 해석방법론을 탐구한다.

이 과목은 생물학의 이론적 해석방법론의 구축과 이론적 구조를 분석, 검토한다.

과학사과제연구 1 3-3-0

Issues in History of Science 1

별도로 설정된 과목에 포함되지 않는 과학사의 주제 중에서 학기별로 강사와 수강생들에게 적합한 주제를 선정하여 깊이 있게 다룬다. 이 과목은 과학사의 다양한 주제를 탐구하고, 학습하는 과정에서의 문제해결 능력을 향상시키고, 과학사 주제의 이해를 돕는 역할을 한다.

과학사과제연구 2 3-3-0

Issues in History of Science 2

과학사과제연구 1과 같은 성격의 과목으로서 서로 교대해서 개설한다. 이 과목은 과학사의 다양한 주제를 탐구하고, 학습하는 과정에서의 문제해결 능력을 향상시키고, 과학사 주제의 이해를 돕는 역할을 한다.

과학사과제연구 3 3-3-0

Issues in History of Science 3

과학사과제연구 2과 같은 성질의 과목으로서 서로 교대해서 개설한다. 이 과목은 과학사의 다양한 주제를 탐구하고, 학습하는 과정에서의 문제해결 능력을 향상시키고, 과학사 주제의 이해를 돕는 역할을 한다.

과학사과제연구 4 3-3-0

Issues in History of Science 4

과학사과제연구 3과 같은 성질의 과목으로서 서로 교대해서 개설한다. 이 과목은 과학사의 다양한 주제를 탐구하고, 학습하는 과정에서의 문제해결 능력을 향상시키고, 과학사 주제의 이해를 돕는 역할을 한다.

과학사과제연구 5 3-3-0

Issues in History of Science 5

과학사과제연구 4과 같은 성질의 과목으로서 서로 교대해서 개설한다. 이 과목은 과학사의 다양한 주제를 탐구하고, 학습하는 과정에서의 문제해결 능력을 향상시키고, 과학사 주제의 이해를 돕는 역할을 한다.

과학사과제연구 6 3-3-0

Issues in History of Science 6

과학사과제연구 5과 같은 성질의 과목으로서 서로 교대해서 개설한다. 이 과목은 과학사의 다양한 주제를 탐구하고, 학습하는 과정에서의 문제해결 능력을 향상시키고, 과학사 주제의 이해를 돕는 역할을 한다.

과학사과제연구 7 3-3-0

Issues in History of Science 7

과학사과제연구 6과 같은 성질의 과목으로서 서로 교대해서 개설한다. 이 과목은 과학사의 다양한 주제를 탐구하고, 학습하는 과정에서의 문제해결 능력을 향상시키고, 과학사 주제의 이해를 돕는 역할을 한다.

과학사과제연구 8 3-3-0

Issues in History of Science 8

과학사과제연구 7과 같은 성질의 과목으로서 서로 교대해서 개설한다. 이 과목은 과학사의 다양한 주제를 탐구하고, 학습하는 과정에서의 문제해결 능력을 향상시키고, 과학사 주제의 이해를 돕는 역할을 한다.

과학사과제연구 9 3-3-0

Issues in History of Science 9

과학사과제연구 8과 같은 성질의 과목으로서 서로 교대해서 개설한다. 이 과목은 과학사의 다양한 주제를 탐구하고, 학습하는 과정에서의 문제해결 능력을 향상시키고, 과학사 주제의 이해를 돕는 역할을 한다.

과학사과제연구 10 3-3-0

Issues in History of Science 10

과학사과제연구 9과 같은 성질의 과목으로서 서로 교대해서 개설한다. 이 과목은 과학사의 다양한 주제를 탐구하고, 학습하는 과정에서의 문제해결 능력을 향상시키고, 과학사 주제의 이해를 돕는 역할을 한다.
Philosophy of Space and Time

This course examines representative views about the nature of space and time in modern physical theories such as Newton’s mechanics or Einstein’s relativity theory. Students also study about normativities of geometry, the epistemological and ontological status of space and time, relationships between time and casualty, and the direction of time.

Studies in Science and Technology Society

The course will give students an understanding of the multi-layered relationship between science and society. Throughout the course, the historical examination of 20th-century science and technology is intertwined with a discussion of contemporary social issues in science. The course will give students an understanding of the multi-layered relationship between science and society, by examining important historical events that have shaped the modern features of science. Seminar topics include the notion of scientific progress, science and democracy, the scientific understanding of society, science and war, “Big Science,” social issues in molecular biology, gender and science, science and culture, science and media, features of the Korean scientific community, 20th-century philosophy of science, and social constructivism.

Studies in the History of Science Policy

The course focuses on several topics which are important when we understand the relationship between science and culture in modern society. The topics will be 1) science and humanism, 2) science and law, 3) science and art, 4) science hall (hall of science) and museum, 5) public understanding of science and culture and so on. It is because of recognition of the problematic situation that the importance of the current science culture has been suggested. This course covers several topics which are important when we understand the relationship between science and culture in modern society. The topics will be 1) science and humanism, 2) science and law, 3) science and art, 4) science hall (hall of science) and museum, 5) public understanding of science and culture. To study science culture is to pursue the nature of scientific knowledge and to focus on history of science, science and society, science policy, science and value, science and ethics, science and education and so on. We can understand the nature of science and culture more fundamentally and generally through such searches. (These searches will help us to understand the nature of science and culture more fundamentally and generally.)

Research Topics on Science, Technology and Society Studies

This is a research course on the following themes: 1) science and humanism, 2) science and law, 3) science and art, 4) science hall (hall of science) and museum, 5) public understanding of science and culture. To study science and culture is to pursue the nature of scientific knowledge and to focus on history of science, science and society, science policy, science and value, science and ethics, science and education and so on. We can understand the nature of science and culture more fundamentally and generally through such searches.
This course involves self-directed reading and research, supervised by the professor who teaches the course. Students who have taken one or more graduate course on science and technology studies are eligible to take this course. The aim of this course lies in the production of a major report on a topic in science and technology studies. The result of the student’s research should be submitted to scholarly journals. This course provides sufficient research skill to PhD students writing their dissertations in the field of science and technology studies.

Special Topics in Science, Technology and Society

The purpose of this course is to offer an opportunity of STS students to explore various special topics that represent the interactions between science, technology, and society. Such topics will include technoscientific governance, the public participation in technoscience, innovation policy, and the relationship between science and art.

Introduction to Science Policy

This introductory course covers theoretical basis and major subjects of the modern science policy. The contents will deal with innovation system perspectives, indicators for science policy, the relationship between science policy and STS, basic research, the role of universities, R&D funding system, etc. The course will provide graduate students with broad knowledge and deep understanding of science policy.
Advanced Genetic Engineering 1

This course is to deal with the recent development of Molecular Biology. The course will deal with a specific theme, composed of various sub-themes. The theme for Advanced Genetic Engineering 1 should be different from Advanced Genetic Engineering 2.

Advanced Genetic Engineering 2

This course is to deal with the recent development of Molecular Biology. The course will deal with a specific theme, composed of various sub-themes. The theme for Advanced Genetic Engineering 2 should be different from Advanced Genetic Engineering 1.

Genetic Engineering Colloquium

The course consists of a series of seminars presented by invited speakers and student evaluation of the discussions of participants concerning these papers. Active interpretation and discussion of participants concerning these papers are expected. At the same time, some laboratory work is included. This course is the introduction to current research topics in metabolic diseases and a interdisciplinary study between biology and medical science. The main themes of this lecture are the concept of ‘insulin resistance’ which is the common patho-physiological mechanism of metabolic diseases such as diabetes, obesity, hypertension and arteriosclerosis, and furthermore molecular biological mechanisms and defects in signal transduction system related with insulin resistance. Based on these studies, the research currents and prospects to overcome the metabolic diseases will be presented.
Methodology in Medical Bioscience

의학과 생명과학의 연계는 필수적이다. 본 강좌에서는 의생명과 학 분야에서 현재 사용되고 있는 다양한 연구방법들을 소개하고자 한다. 이를 위해 인체에 대한 발생학적, 해부학적개론과 신경계와 면역계 등의 구조와 기능을 중심으로 공부하고자 한다. 또한 단백 질구조학 연구에서 사용되는 X-선 결정법, NMR, 질량 분광분 석법 등 최근 연구방법들의 원리를 이해할 수 있도록 한다.

Interdisciplinary study between biology and medical science is indispensable. In this class, various methods used in medical bioscience will be introduced. First of all, the developmental and anatomical survey of human body, and the function and structure of nervous and immune system will be studied. Also, the recent methodologies for proteomics research such as X-ray crystallography, NMR and mass spectroscopy will be introduced.

Topics in Genetics of Experimental Organisms

고등동물의 유전자 기능을 정확히 이해하려면 개체를 대상으로 연구해야 한다. 개체대상의 연구에서는 실험의 특성과 조건에 맞는 실험생물의 선택이 중요하며 그 실험생물의 유전적 특성 및 유전자의 발현조절 등의 이해가 필수적이다. 따라서 이 강좌에서는 애기장대, 초파리, 생쥐 등 대표적인 실험생물의 특성 및 유전학적 연구방법론을 소개하고, 이들을 대상으로 수행된 최신연구들을 공부하고자 한다.

The researches based on an organism must be carried out to exactly understand the mammalian genetic function. In these researches, it is important to select an appropriate experimental organism which is suitable for the trait and condition of research, and to understand the genetic characteristics and regulation of the organism. In this lecture, the features of experimental organisms such as Arabidopsis, Drosophila and mouse, and genetic methodologies will be introduced. And recent researches performed with these organisms will be studied.

Topics in Immune Cell Differentiation

면역계는 자기와 비자기를 구분하여 항상성을 유지하려는 상당히 복잡한 생명현상이다. 면역계에 관련된 세포들의 분화과 역할은 상호작용을 통하여 일어난다. 세포형태에 나타나는 분자들을 통해 상호간의 연관된 조절작용과 분화는 면역 반응의 시작이고 끝이라 할 수 있다. 본 강좌에서는 면역세포의 표면에 나타나는 많은 분자들의 상호작용을, 그리고 면역반응에 대한 분자수준의 이해를 논하고자 한다.

Immune system is a highly organized life system that maintains the ‘homeostasis’ by discrimination between ‘self’ and ‘nonself’. Cellular differentiation and responses related to immune system are transduced through molecular interaction. Regulation and differentiation mechanisms linked to cellular surface molecules are the main points of immune reaction. In this lecture, the main topics are the interactions of many surface molecules of immune cells and the molecular mechanisms.

Reading and Research

대학원 석·박사 과정을 통해 수행될 연구에 필요한 기본적인 논문 연구와 이를 기초로 한 연구의 기획을 연구대상으로 해독적 인 연구를 수행할 수 있는 능력을 향상할 수 있는 기회를 본 과 목을 통해 제공하고자 한다. 수강생의 연구주제에 대한 최근 논문 의 검토와 분석, 그리고 이를 통한 수강생의 연구방법론의 향상을 도모하고자 한다.

This course will lay out basic schemes of graduate level research for each student’s thesis. Students in the master’s and doctoral programs will spend most of their time doing laboratory work. However, follow-up of research activities in relevant fields throughout the world is also important. This can be achieved by active communication between students and professors.
Cellular Neurophysiology

This course aims to understand the basic principles of the nervous system. Particular emphasis is on cellular and molecular biology of the nerve cell (cell biology of the neuron, synthesis and sorting of neural proteins, ion channels, and the resting and action potential), synaptic transmission (synthesis and secretion of neurotransmitters, receptor molecules, intracellular signal transmission, etc.), anatomy and function of central nervous system and neural development (neuronal death, survival, migration, and synapse formation with target cells). Seminars are presented by faculty members various neuroscience specialties of the Graduate School of Brain Science.

Molecular Neurobiology

In this course, students learn to design the computational model of neurons using experimental data with basis upon computational, informatical, probability theories and statistical inference algorithms. Experimental approaches include modeling the artificial neural networks and evolutionary algorithms.

Computational Neuroscience

In this course, students learn to design the computational model of neurons using experimental data with basis upon computational, informatical, probability theories and statistical inference algorithms. Experimental approaches include modeling the artificial neural networks and evolutionary algorithms.
based on textbooks, this course offers recent trends of neuroscience based on newly published papers of speakers, and thus, students will gain updated and wide-ranged knowledge in each field. Additionally, temporary seminars will be presented when highly recognized neuroscientists in various fields are available.

Seminar in Neuroscience 2

This course is designed to educate students who have already mastered basic principles and facts through neuroscience textbooks. Invited speakers will give seminars to convey advanced knowledge concerning each discipline of neuroscience. The content for this seminar will be either a review of recent trends for neuroscience or presentation of research seminars. From this course, student will obtain recent progress in various field of neuroscience, which will help students organizing their future researches.

Neuroanatomy

Brain science is inherently interdisciplinary. Its methodology involves a wide range of techniques from diverse fields such as molecular biology, genetics, electrical engineering, chemical engineering and optics. The aim of this lecture is to introduce the concepts and applications of various techniques used in contemporary neuroscience and to discuss how scientists and engineers from diverse backgrounds can contribute to the study of our brain. “Methods in Brain Science 1” focuses on microscopic view involving molecules and cells, whereas “Methods in Brain Science 2” focuses on macroscopic levels, such as systems and cognitive levels.

M1427.000100 大学院論文研究 3-3-0

Reading and Research

In this course graduate students conduct research related to their thesis.
Bioinformatics and Practice 1

Bioinformatics is the study of the inherent structure of biological information and systems that require deep understanding in information sciences such as computer science, statistics, and mathematics that have been applied to biology. It brings together the avalanche of systematic biological data (e.g. genomes) with the analytic theory and practical tools. In order to understand bioinformatics in depth, it is recommended that bioinformatics should be taken concurrently with graduate dissertation work in a number of participating departments. This curriculum emphasizes fundamental theory and methodology essential for doing original research in bioinformatics.

Bioinformatics and Practice 2

With the availability of genomic-scale gene expression and biological structural data, mathematics and computational sciences have changed the face of modern biology. This course will introduce the basic computational methods of understanding biological phenomena on a molecular level. We first focus on biological sequence algorithms such as dynamic programming, hashing, suffix trees, and Gibbs sampling. Computational algorithms for genetic, physical, and mapping, statistical and data mining issues will be introduced with examples of how bioinformatics technologies can be applied to RNA and protein structure and folding problems, such topics as how bioinformatics technologies can be applied to RNA and protein structure and folding problems, such topics as how bioinformatics technologies can be applied to RNA and protein structure and folding problems, such topics as how bioinformatics technologies can be applied to RNA and protein structure and folding problems, such topics as how bioinformatics technologies can be applied to RNA and protein structure and folding problems, such topics as how bioinformatics technologies can be applied to RNA and protein structure and folding problems, such topics as how bioinformatics technologies can be applied to RNA and protein structure and folding problems, such topics as how bioinformatics technologies can be applied to RNA and protein structure and folding problems, such topics as how bioinformatics technologies can be applied to RNA and protein structure and folding problems, such topics as how bioinformatics technologies can be applied to RNA and protein structure and folding problems, such topics as how bioinformatics technologies can be applied to RNA and protein structure and folding problems, such topics as how bioinformatics technologies can be applied to RNA and protein structure and folding problems, such topics as how bioinformatics technologies can be applied to RNA and protein structure and folding problems, such topics as how bioinformatics technologies can be applied to RNA and protein structure and folding problems, such topics as how bioinformatics technologies can be applied to RNA and protein structure and folding problems, such topics as how bioinformatics technologies can be applied to RNA and protein structure and folding problems, such topics as how bioinformatics technologies can be applied to RNA and protein structure and folding problems, such topics as how bioinformatics technologies can be applied to RNA and protein structure and folding problems, such topics as how bioinformatics technologies can be applied to RNA and protein structure and folding problems, such topics as how bioinformatics technologies can be applied to RNA and protein structure and folding problems, such topics as how bioinformatics technologies can be applied to RNA and protein structure and folding problems, such topics as how bioinformatics technologies can be applied to RNA and protein structure and folding problems, such topics as how bioinformatics technologies can be applied to RNA and protein structure and folding problems, such topics as how bioinformatics technologies can be applied to RNA and protein structure and folding problems, such topics as how bioinformatics technologies can be applied to RNA and protein structure and folding problems, such topics as how bioinformatics technologies can be applied to RNA and protein structure and folding problems, such topics as how bioinformatics technologies can be applied to RNA and protein structure and folding problems, such topics as how bioinformatics technologies can be applied to RNA and protein structure and folding problems.

Advanced Bioinformatics 1

In this lecture, the most advanced scientific fields in bioinformatics will be examined to familiarize students with the most recent trends in the field.

Advanced Bioinformatics 2

In this lecture, the most advanced scientific fields in bioinformatics will be examined to familiarize students with the most recent trends in the field.

Analysis of Protein Structure

Since the sequencing of the entire human genome, studies on protein structure have received more attention. This course covers methodology of protein structure determination and prediction. In addition, students participate in discussion on the properties of proteins and protein folding.
<화학정보학>은 분자계의 구조, 분광학적 특성, 화학반응과 반응성 등에 대한 화학 정보의 저장, 조작, 표현, 그리고 유효성에 관련된 학문이다. 이 과정에서는 유용한 데이터와 정보를 체계적인 지식으로 변환시키기 위한 데이터베이스 구성, 데이터분석, 시각화, 정보 처리, 그리고 정보통합에 대한 방법을 배우고, 실제적인 경우에 적용시키는 훈련을 하게 된다.

<Chemoinformatics> is a study that deals with the storage, manipulation, presentation and application of chemical information of the structures, spectra, reactions and activities of molecular systems. Students will learn data analysis, visualization, data integration, and decision making for the purpose of turning data and information into further knowledge and insight.

유전체 관련 자료들을 다루기 위한 통계 기법들을 다룬다. 특히 유전체 자료의 양이 복잡하고 방대하기 때문에 기초적인 통계 모형 이외에도 유전체 자료들의 특성을 잘 고려한 통계분석 방법들을 학습하게 될 것이며 컴퓨터를 이용한 다양한 분석을 통한 노란색을 다룬다.

As statistics has been a key area for analyzing genomic data, this course covers some basic concepts in statistics such as estimation and testing. In addition, some specific statistical models will be introduced to analyze genomic data statistical computer algorithms.

유전자 집합 단백질들의 바이오칩 기술과 정보학은 후기 유전체 시대를 이끌어 갈 핵심기술이다. 본 강좌는 바이오칩 제작의 기초와 자료구조에서 이미지분석, 정규화, 필터링, 누락값추론, 매핑, 통계학적 분석, 클러스터 분석, 유전자발현 조절 네트워크 분석, 바이오칩 자료의 표현법 및 데이터베이스 구축에 대해 논한다.

Topics covered in this course include use of integrated biochip informatics technology such as image analysis, data normalization, data filtering, multivariate data projection, statistical significance analysis of differentially expressed genes, clustering, gene-regulatory pathway.
3394.501 Scientific Visualization

This course will examine algorithms that visualize on computer terminals the various three-dimensional images that appear in sciences and engineering. This course will focus on the theories and practices of the various efficient algorithms for visualization softwares; visualization of scalars, vectors, and tensor matrices; visualization of images that arise in scientific models; other efficient computer visualization algorithms; and scientific visualization.

3394.503 Parallel Scientific Computation

This course covers the basic concepts of parallel computation, theories and models of parallel and vector computers, high performance computing models, parallel programming models and their efficiency analyses, parallel programming techniques, debugging, and applications and practices of parallel computation. In particular, we will practice using parallel programming methods that combine languages such as FORTRAN and C/C++ with parallel language processing such as MPI(Message Passing Interface) and Open MP.

3394.504 Scientific Computational Modeling

This course examines the method of mathematical modeling which translates scientific and engineering problems into calculable equations and formulae. Other topics covered in this course include the following: mathematical analysis of the model equations; analysis of the efficiency, stability and convergence of numerous computational algorithms; numerical simulation techniques; fundamentals of visualization.

3394.506 Advanced Matrix Computation

This course examines the method of mathematical modeling which translates scientific and engineering problems into calculable equations and formulae. Other topics covered in this course include the following: mathematical analysis of the model equations; analysis of the efficiency, stability and convergence of numerous computational algorithms; numerical simulation techniques; fundamentals of visualization.

%한글부문의 내용을 이 페이지에 추가할 수 있습니다.\%

화점구조는 "학점수-주당 강의시간-주당 실습시간"을 표시한다. 한 학기는 15주로 구성됨. (The first number means "credits"; the second number means 'lecture hours' per week; and the final number means 'laboratory hours' per week. 15 weeks make one semester.)
이론 및 구현 등 응용사례에 대한 최신의 선택적 주제를 다루도록 한다. MPI와 Open MP 등 병렬계산 interface을 이용하여 선택된 주제에 대하여 병렬계산 모델링을 통하여 직접 계산할 수 있도록 강의하여 학생들에게는 적절한 과제를 부여하기도 있다.

This course deals with selected topics from up-to-date theory, practise, and applications of parallel computation. Topics include parallel computational algorithms such as matrix, integration, optimization, nonlinear equations, and Monte Carlo methods. We will also examine the parallel computational methods of partial differential equations such as domain decomposition methods. We will practice computing selected problems using parallel computation interfaces such as MPI and Open MP.

3394.512 고급병렬계산특강 2 3-3-0

Topics in Advanced Parallel Computation 2

본 과목에서는 Matrix, 적분, 최적화문제, 방정식, Monte Carlo방법 등의 병렬계산 알고리즘 및 Domain decomposition methods과 같은 편미분방정식의 병렬계산해법 등 최신 병렬계산 이론 및 구현 등 응용사례에 대한 최신의 선택적 주제를 다루도록 한다. MPI와 Open MP 등 병렬계산 interface를 이용하여 선택된 주제에 대하여 병렬계산 모델링을 통하여 직접 계산할 수 있도록 강의하여 학생들에게는 적절한 과제를 부여하기도 있다.

This course deals with selected topics from up-to-date theory, practise, and applications of parallel computation. Topics include parallel computational algorithms: domain decomposition methods for partial differential equations, parallel algorithms for matrix problems, integration, optimization, solution methods of system of nonlinear equations, and Monte Carlo methods. Lectures will be directed such that students can compute selected problems using parallel computation interfaces such as MPI and Open MP.

3394.513 고급계산모델링특강 1 3-3-0

Topics in Advanced Computational Modeling 1

본 과목에서는 과학, 공학, 의학, 산업, 국방 등에서 제기되는 중요한 실제적인 문제들의 효율적인 최신 과학계산모델링의 기법 및 응용, 시뮬레이션에 대한 선택적 주제를 배우도록 한다. 또한 선택된 주제들에 대하여 수학적, 수치해석적, 공학적 분석을 강의한다. 학생들에게 적절한 문헌들을 배당하고 모델링, 분석, 수치해법, 시뮬레이션을 단계적으로 하게 한다.

This course deals with the method and practice of the efficient computational modelling recently developed for problems that arise in sciences, engineering, medicine, industry, and defense. Students will study modelling techniques, applications, and simulations of selected topics as well as their mathematical analysis, numerical analysis and engineering analysis. Appropriate problem assignments will be distributed to each student and will be discussed.
물리생물학은 물리학의 이론적 실험적 접근법을 이용하여 생물학의 미해결 문제를 해결하려는 연구분야를 일컫는다. 급속히 발전하고 있는 이러한 연구분야는 전체 생명물리학의 연구를 주도해 나가고 있으며 이러한 추세는 앞으로 물리생물학이 나아가야 할 방향으로, 본 강좌에서는 이 분야에서 확실히 진행되고 있는 연구를 중심으로 물리생물학의 고급지식을 습득하는 것을 목표한 다.

Physical biology is a research field in which researchers seek answers to the unsolved biological problems by means of theoretical and experimental approaches of physical science. Physical biology is an emergent research field that will lead the entire biophysics field in the future. This course will cover principles and advanced knowledge of physical biology, focusing on the current and up-to-date research activities.

물리생물학을 위한 연성물리 3-3-0
Macromolecular Structure and Function
DNA, RNA, 단백질, 세포막 등 세포를 이루는 주요 구성성분은 모두 무른 물질로 이루어져 있다. 무른 물질은 물리학적 성질에서 전통적으로 다루지하기 학문적 과제를 해결하기 위해 고성질 현상이 존재함에도 불구하고 이를 다루는 방식은 자유상이 다항자와 달리나며 고생물학적 문제를 해결하기 위한 방법론을 모방하게 된다. 본 강좌는 생물학적 특성에 기초한 가능성을 탐색함으로써 세포 내 현상을 중심으로 연성물리의 기본 개념을 습득하려는 것이다.

This course will cover the structure-function relationship of proteins and nucleic acids. In detail, this course will focus on the principles and application of macromolecule structure determination, methodology of structure-function relationship studies, and current and up-to-date researches on the structure-function relationship of proteins and nucleic acids.

생물학을 위한 연성물리 3-3-0
Soft Matter Physics for Biology

DNA, RNA, 단백질, 세포막 등 세포를 이루는 주요 구성성분은 모두 무른 물질로 이루어져 있다. 무른 물질은 물리학적 성질에서 전통적으로 다루지하기 학문적 과제를 해결하기 위해 고성질 현상이 존재함에도 불구하고 이를 다루는 방식은 자유상이 다항자와 달리나며 고생물학적 문제를 해결하기 위한 방법론을 모방하게 된다. 본 강좌는 생물학적 특성에 기초한 가능성을 탐색함으로써 세포 내 현상을 중심으로 연성물리의 기본 개념을 습득하려는 것이다.

This course will cover the soft matter physics including colloidal, biopolymer, surfactant, and phase transition. Major components of living cells, DNA, RNA, proteins, and membranes, are all soft materials. Despite the notion that the soft material system is different from the solid substance system, which is conventionally studied in the physical sciences, there has been no course offering the principles and application of the soft material system. This course will cover basic concepts of soft matter physics including colloidal, biopolymer, surfactant, and phase transition so that the students will understand the cellular events by means of physical mechanisms.
Understanding how our brain creates and enables cognition, emotion, motivation and behavior represents a significant challenge in contemporary science. Human brain is an extremely complicated neural circuitry consisting of 80 billion neurons and 100 trillion neurons; to investigate structure and function of the neural circuitry, scientists and engineers from diverse background are developing novel techniques. Among the novel techniques, optogenetics brought a breakthrough in neuroscience in 2005 and is now widely adopted by neuroscientists throughout the world. The aim of this lecture is to introduce and discuss the principles and applications of optogenetics along with other neuroscience methods.

This course is a seminar course in which most prominent biophysicists, chemical biologists, and experts in related areas will be invited to give seminars and discuss possible collaborative activities in the future.

M1430.001500  BPCB Seminar I  2-0-4

M1430.001600  BPCB Seminar II  2-0-4

M1430.001700  BPCB Seminar III  2-0-4

M1430.001800  BPCB Seminar IV  2-0-4

M1430.001900  BPCB Seminar V  2-0-4
**M1430.002000**  화학생물학 특강  2-2-0  

Special Topics in Chemical Biology

 생명의 다양한 현상을 생명과학, 생명공학, 화학 및 물리학적 접근을 통해서 이해하는 연구 분야인 화학생물학의 최근 연구 동향을 다룸으로써 학생들이 다양한 연구 분야의 중요성에 대해서 인식할 수 기회를 제공할 것이다.

This course will provide detailed discussions on the application of chemical approaches to tackle unsolved problems in biological science. The detailed examples of the roles of the understanding of chemical phenomena in the understanding and control of biological phenomena will be discussed as well.

**M1430.002100**  BPCB 특수연구  3-3-0  

Special Research of Biophysics and Chemical Biology

모든 학생들이 참여하는 과목으로서 학생들에게 영어 발표의 기회를 제공하고, 타 연구분야에 대한 통섭적 이해를 높이도록 한다. 구체적으로, 과제간 협력 연구 및 공동 연구 수행에 필요한 개념 및 아이디어 설계 토의와 관련 예비 결과를 집중 논의한다.

The purpose of this course is to train students to expand their ability to communicate their research interests in English. This course will encourage all enrolled students to participate in the presentation and discussion of their research in English. In particular, the focus will be on the possible collaborative approaches to an identical biological problem of interest.
간 호 대 학
College of Nursing
811.504 간호철학 3-3-0

Philoosophy of Nursing
간호학의 존재론, 인식론, 방법론과 예술로서의 간호행위와 윤리에 관한 철학적 관점을 고찰함으로써 간호지식 개발과 정체성 있는 이상간호사, 간호연구자로서의 학문적체를 기르는 데 중점을 둔다.

This course explores major schools of thoughts in contemporary western philosophies of science; metaphysics, epistemology, ethics, and esthetics. It also focuses on improving scholastic attitude as a clinical nurse or a researcher.

811.518 간호이론총론 3-3-0

Theoretical Foundation of Nursing
본 교과목은 간호학적 체계를 이해하기 위하여 이론이 무엇인가, 그 기능과 구성이 어떻게 이루어졌는가, 간호학은 어떻게 발전되어 왔으며 그 특성을 규정하는 간호이론 맵의 현주소는 무엇인가?를 목표로 한다. 과학적이고 주제를 통해 탐색함으로써 간호학의 학문적 성격을 규정해 보는 과정이다.

This course provides an overview of nursing theory and development.

811.519 간호연구방법총론 3-3-0

Nursing Research Methodology
본 교과목은 질적자료 분석에 초점을 맞추고 있다. 학생들은 참여관찰과 면답 등을 통하여 수집한 자료를 민속학적 방법, 현상학적 방법, 근거이론방법론 등의 원리에 따라 분석을 실제로 수행하여 정성적 분석을 경험하고 학습하게 함으로써 간호학의 체계적 관점에서 간호학적 연구방법론을 이해하게 한다. 학생들은 간호학의 체계적 연구의 진행을 위해 필요한 다양한 기술과 절차와 지식을 학습하게 된다.

The primary purpose of this course is to broaden the overall understanding of the scientific research methodology necessary for development and verification of the nursing knowledge and problem-solving in nursing practice as a required course in the master program. Students will learn the scientific research methods and processes, and apply them to their own research topic. Because human is a primary subject in most quantitative nursing research, this course will cover research methods used in social science fields, including literature review, research design, sampling, data collection and analysis. The course will cover the overview of qualitative research and the significant differences between qualitative and quantitative research, not detailed qualitative research methodology. On successful completion of the course, students will be able to develop their own research proposal by enhancing their basic knowledge and skills of research methods through exploration of the research methods and processes and critical examination of published studies.

811.521 중급간호통계학 3-3-0

Intermediate Statistics in Nursing
석박사과정 대상으로 개설되는 본 교과목은 간호연구에 필요한 간단한 통계법에 대한 기본 정리와 통계패키지와 간호학 분야의 연구과정에서 생성된 자료를 활용하여 자료분석을 실제 실습한 과정으로 구성된다.

This course introduces the basic statistical methods necessary for nursing research. Basic concepts, assumptions, and computational process of elementary statistical methods are covered and hands-on experiences on data analysis using SPSS and SAS are provided.

811.658 질적자료분석론 3-3-0

Qualitative Data Analysis
본 교과목은 질적자료 분석에 초점을 맞추고 있다. 학생들은 참여관찰과 면답 등을 통하여 수집한 자료를 민속학적 방법, 현상학적 방법, 근거이론방법론 등의 원리에 따라 분석을 실제로 수행하여 각 분석의 특성과 절차를 익히도록 한다. 간호학적 분석에서는 케이스내 분석, 케이스간 분석을 중심으로 대상이 될 내용들이 포함될 것이다. 또한 체계적인 질적자료 분석을 위하여 NUDIST 등의 사례와 같은 소프트웨어를 도입하고자 한다. 본 교과목을 통해 학생들은 간호학적인 실제 질적연구 수행을 위해 필요한 다양한 기술과 절차와 지식을 학습하게 된다.

This course is designed to focus on analyzing qualitative data from participant observations, interviews, and other sources. The course will begin with the introduction of qualitative research design related issues. Additional studies include: within-case analysis, cross-case analysis, matrix displays, and verification. This will be discussed according to the qualitative method, such as ethnography, grounded theory, or phenomenology. Students will be expected to collect or bring a qualitative data to analyze during the course. Nudist software program will be introduced to manage qualitative data.

811.683 전문간호사의 역할 및 정책 3-3-0

Policy and Roles of Nurse Practitioners
이 교과목은 전문간호사의 역할과 전문간호사로서의 책임과 의무, 역할 및 전문간호사 발전과 관련된 정책을 파악하여 전문간호사로서 보건의료관련정책을 분석하고 개발하는 데 참가할 수 있는 능력을 갖게 한다.

[교과목표]
1. 전문간호사제도의 발전과정을 기술한다.
2. 전문간호사의 직무역량과 역할을 설명한다.
3. 우리나라 전문간호사제도와 보건의료관련 정책을 파악하여 전문간호사 관련 정책의 개발전략에 대해 이해한다.
4. 보건의료정책 및 전문간호사제도 실무방침을 통해 국제적인 현상을 파악한다.
5. 전문간호사에 관련된 윤리적 가치관과 법적근거를 숙지하고 간호실무상황에서 대처할 수 있는 능력을 갖게 한다.

This subject enables the mater students who enroll the NP course be competent to identify and analyze the issues related to accountability, roles, and development of NP with context of the health care policy.

The objectives of this course are to describe the development process of NP, to explain the job competencies and roles of NP, to identify the health care policy and develop policy strategies of NP, to identify and analyze of the inter-
national policy and it’s national system of NP, to be competent the coping ability to nursing practice situation to recognize ethical value and legitimation practice of NP

811.705 Dissertation Seminar 1

이 교과목은 기본적인 박사과정의 교과목을 이수한 학생들을 위해 박사 학위 논문 계획서를 개발해 가는 과정을 도와주기 위해 개설된 것이다. 수강생은 자신의 논문개발 과정에 대해 발표하고 다른 학생들의 논문 계획 발표에 참여하여 토론하는 것이 중요 하습 활동이다. 학생의 발표시 각 논문 지도 교수도 참여한다. 학 위 논문 연습 1보다는 학위 논문 연습 2에서는 좀더 구체적인 논문계획서가 개발 되는 것을 기대한다.

The courses are offered to help the students who have finished basic doctoral courses and to start developing doctoral thesis proposal. Students are required to present their progress of developing ideas and literature review results of their subject. Thesis adviser is required to present in the progress of developing ideas and literature review results of doctoral thesis proposal. Students are required to present their finished basic doctoral courses and to start developing doctoral thesis proposal. Students are required to present their

811.706 Dissertation Seminar 2

이 교과목은 기본적인 박사과정의 교과목을 이수한 학생들을 위해 박사 학위 논문 계획서를 개발해 가는 과정을 도와주기 위해 개설된 것이다. 수강생은 자신의 논문개발 과정에 대해 발표하고 다른 학생들의 논문 계획 발표에 참여하여 토론하는 것이 중요 하습 활동이다. 학생의 발표시 각 논문 지도 교수도 참여한다. 학 위 논문 연습 1보다는 학위 논문 연습 2에서는 좀더 구체적인 논문계획서가 개발 되는 것을 기대한다.

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811.707 간호학론보전선 3-3-0

Analysis and Evaluation of Nursing Theory

간호학론의 지식 체계 구성을 이해하고 여러 이론 평가기관에 의해 현대간호론을 분석하여 분리, 평가한다. 또한 주요 배경 이론이 되고 있는 체계 이론, 상호작용이론, 에너지창이론, 발달이론, 적응 이론 등을 이해하고 현대 간호론에 접목된 부분을 설명하고 평가. 고찰한다.

This course focuses on students understanding of conceptual, theoretical systems of nursing knowledge as a discipline. Students are encouraged to analyze and evaluate contemporary nursing theories based on the evaluation criteria. In addition, students will review major overarching theories (e.g., system theory, interaction theory, energy field theory, development theory, and adaptation theory), and explore how they are relevant to the contemporary nursing theories.

811.710 질적간호연구방법론 3-3-0

Qualitative Nursing Research Methodology

본 교과목의 목적은 질적연구방법론의 학적 이론적 배경을 이해하고, 간호학에서 주로 이용하는 질적연구방법에 초점을 맞추어 이들의 특성 및 절차와 기술을 이해함으로써 간호현상에 대한 깊은 이해, 그리고 이에 대한 이론을 개발할 수 있는 질적연구 수행능력을 기르는 데 있다. 그 내용으로는 (1) 질적연구방법론의 철학적, 이론적 배경, (2) 간호학에서 사용하는 질적연구방법론의 종류와 특성, (3) 질적연구 설계, (4) 현장 연구, 참관 체험, 심층면담 등 자료수집 방법, (5) 질적자료 분석과 결과 보고, 그리고 (6) 질적 연구의 여러가지 측면 및 평가 기준에 관한 내용을 포함한다.

Qualitative research methods are conducted in naturalistic settings. The qualitative research method should be selected and appropriately used according to the nursing problem and what is known about the nursing phenomena to be studied. The philosophy of qualitative research method is discussed. The gathering of data by participant observation and deep interview in field and the analyzing data are studied. Ethnographic method, hermeneutic and phenomenological method, grounded theory methodology, field research method, critical action research, and ethnomethodology are also discussed.

811.712 고급간호통계학 3-3-0

Advanced Statistics in Nursing

본 교과목은 간호학 통계학과 연구에서 주로 사용하는 통계학의 기초와 고급을 가르치는 교과목으로, 간호학적 특성과 현상에 대한 통계적 분석을 위한 교과목으로 개설된다. 본 교과목의 목표는 통계학적 방법론의 이해를 위해 간호학적 현상에 대한 학생들의 이해를 돕는다.

This course is open for those who took a graduate-level course in basic nursing research and data analysis methods. This course deals with the advanced statistical methods which can be used in nursing research. This course consists of lectures, computer lab sessions and case presentations. Basic concepts, assumptions and computational process of the advanced statistical methods will be covered during lectures. In computer lab sessions and case presentations, data produced in nursing research will be analyzed using statistical package. Interpretation of output will be also covered.

811.713 간호연구설계 3-3-0

Advanced Design for Nursing Research

본 교과목은 간호학적 특성과 현상에 대한 통계적 분석을 위한 교과목으로, 간호학적 현상에 대한 학생들의 이해를 돕는다. 본 교과목의 목표는 통계학적 방법론의 이해를 위해 간호학적 현상에 대한 학생들의 이해를 돕는다.
design their own research study using appropriate research methods.

811.718 사회・문화적 다양성과 건강 3-3-0
Sociocultural Diversity and Health

급속히 다문화 사회로 변화해 가고 있는 한국 사회에서, 사회・문화적 다양성이 건강에 미치는 영향에 대한 이해가 절실히 요구되고 있다. 본 과목에서는 다양한 사회・문화적 배경(인종, 민족, 사회 계층적, 교육적, 지역적 배경 등)이 건강, 간호관련 연구에 미치는 영향에 대한 이해를 돕는 것을 목표로 한다. 문화의 개념적 정의를 살펴보고, 다양한 사회・문화적 배경을 가진 사람들에게 적합하고 효과적인 간호관리와 이에 관한 연구방법은 무엇인지 살펴보고 논의한다. 본 과목에서는 이언에 따른 문화적 적응과 사회화, 다양한 사회・문화적 배경에 따른 다양한 건강에 관한 신념과 가치, 가족과 교육정도가 간호관리에 미치는 영향, 특정한 대상자들에게 적합한 연구 방법 등에 대해 학습한다.

Given the rapidly changing ethnic composition and family structure of Korean society, it is critical for health care providers to understand sociocultural influences on health and health care. The objective of this course is to provide students with the understanding of the influence of various cultures (e.g., racial, ethnic, socioeconomic, educational, and geographic) on health, health care services and research. Definitions of culture and essential components of culturally relevant health care and research are explored and analyzed. Main topics include immigration and acculturation, health beliefs and values of diverse cultural groups, impact of poverty and illiteracy on health care. The objective of this course is to provide students with the understanding of the influence of various cultural factors (e.g., racial, ethnic, socio-economic, educational, and geographic) on health, health care services and research. 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811.817 영아증증중간호간호 3-3-0
Critical Infant Care

본 과목은 간호학과 가족의 신체적, 사회심리적 건강문제에 대한 이해를 바탕으로 최근 관련 연구결과를 활용하여 이들 요구에 적합한 간호중재를 계획하고, 고위험 영아 간호와 관련된 윤리적 문제에 대해 논의하고, 신생아전문간호사의 역할을 분석하는 것을 목적으로 한다.

This course focuses on understanding of physical and psychosocial problems of high risk infants and their families. The students will utilize recent research findings to plan nursing interventions for high risk infants and their families and analyze the roles of advanced practical neonatal nurse (APNN) and ethical issues in relation to high risk infant care.

811.626 아동건강중재론 3-3-0
Theories of Pediatric Nursing Intervention

본 과목은 가족과 지역사회的社会적 면역 속에서 건강한 혹은 건강문제가 있는 아동과 그 가족을 대상으로 하는 다양한 간호중재 개발을 위한 관련 연구를 계획하고 간호실무 적용 방안을 논의한다.

This course focuses on reviewing nursing interventions based on concepts of the care of healthy children, or children with health disruptions, in the context of family and community. The emphases are on designing research for the development of pediatric nursing interventions by integrative reviews such as attachment, parenting role, premature development, child safety, and discussing the application in nursing practice.

811.633 고급아동건강학세미나 3-3-0
Seminar in Advanced Pediatric Nursing

본 과목은 임상적 경험과 문헌고찰에 근거한 토론을 통하여 아동건강과 관련된 최근의 이슈를 이해하는데 초점을 둔다. 학생들은 병원과 가정, 지역사회와의 다양한 간호실무 현장에서의 아동건강의 확립된 역할에 대해 확인하며, 아동건강과 관련된 국내외 정책을 이해하게 된다.

This course focuses on understanding of recent child health issues through in-depth discussion based on clinical experiences and literature reviews. The student will identify the advanced role of child health nurse in various health care settings including hospital, home and community, and understand national, and international health policy for child health.
This course provides an opportunity for training to become a consultation-liasion nurse through understanding theory and clinical application for the client and their families who have physical illness as well as psychosocial health problems.

811.651 모성간호연구 3-3-0
Maternity Nursing Research

간호학에서 여성건강과 모성간호 분야에서 여성주의적 연구방 법을 이해하고 연구된 개념별 이론과 연구양상을 분석하고 연구 계획을 수립한다: (1) 양식, 양식 여성주의 연구방법을 이해한다. (2) 임산부의 생리적, 사회심리적 변화 및 간호중재와 관련된 연구의 이론적 개념과 연구 양상을 분석한다. (3) 여성의 생식기 건 강을 중심으로 건강증진과 질병예방 및 치유와 관련된 연구의 이 론적 개념과 연구 양상을 분석한다.

This course is an introduction of feminist research method with an emphasis on critical analysis of nursing research related to women’s health and childbearing. This class will cover issues related to female health, pregnancy, and the patient’s reproductive organs.

811.656 임산부의 생리적 적응 3-3-0
Physiological Adaptation of Pregnant Women

임신과 분만으로 인한 여성의 신체 생리적 변화를 임상적 측면 에서 분석하고 태아의 성장과 발달을 이해하여 임산부의 적응을 도모한다.

This course focuses on the physical and psychological changes of a female. Studies include analysis of a pregnant woman’s physiological adaptation and the fetus. An emphasis on implications for nursing practice will be one of the characteristics of this course.

811.657 고위험임산부간호 3-3-0
Care of High-Risk Pregnant Women

임산부의 고위험을 사정하고 출혈성 합병증, 고혈압 합병증, 당뇨병, 삼정증, 난산, 산후 감염, 산후 우울 등의 고위험 임산부를 위한 간호중재를 계획하고 평가한다.

This course deals with women with complicated pregnancies. Topics to be studies include: care and management of childbearing women and fetus at risk, and health problems throughout the prenatal, intrapartum, and postpartum periods.

811.665 부모-자녀간계간호론 3-3-0
Topics in Parent-Child Health

부모-자녀관계의 관련이론들에 대한 분석을 통해 부모의 역할과 아동간계간의 관계를 탐구하고자 하는 교과목이다. 부모-자녀 관계를 상호작용 모형의 관점에서 부모의 역할양상, 영아행동능력에 관한 이해를 바탕으로 한다.
This course offers an in-depth exploration of the concepts of parent-child relations and children’s health within interaction models. The coursework will focus on the promotion of health during the developmental transition in parenting role and childhood. Major emphases are on assessment of parent-child interactions, prevention of dysfunction, provision of nursing care to vulnerable populations, and reducing parenting stress and role conflict. Selected theoretical/conceptual perspectives serve as the basis for formulating various research programs in parent-child health.

811.666 Seminar in Women's Sexual Health

Theory in Maternity Nursing: Concepts, Theories, and Research

M0000.003500 Nursing Care of Children with Chronic Illness

M0000.004100 Feminism and Women Health Nursing

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verse socio-cultural political factors associated with women's health, and to explore new ways of thinking critically about health issues affecting women's lives.

M0000.004200

**Advanced Psychiatric-Mental Health Nursing Interventions**

The course addresses theories and techniques of psychiatric nursing interventions for individuals and groups. Upon completion of this course, students will have had the opportunity to analyze diverse individual and group therapy cases and obtain diverse nursing interventions strategies.

M0000.004300

**Psychiatric-Mental Health Nursing based on the Developmental Stages**

This course focuses on the definitions, characteristics, and care of patients in each developmental stage. Students will learn to apply clinical nursing interventions such as relaxation, meditation, music therapy, imagery, exercises, dancing, massage, and biofeedback for prevention of diseases, promotion of health, rehabilitation, and quality of life.

**M0000.004400**

**Growth & Development**

This course provides an opportunity to analyze diverse individual and group therapy cases and obtain diverse nursing interventions strategies.

M0000.004500

**Community-based Psychiatric-Mental Health Nursing Service**

This course focuses on the definitions, characteristics, and life-cycles of family. Upon completion of this course, the students will have had the opportunity to obtain knowledge about conceptual frameworks and strategies of family therapy and acquire the abilities to analyze family's problems, conduct nursing interventions, and test the effectiveness of the interventions for diverse families.
This course explores what are health promotion behaviors and how nurses can help plan and implement the health promotion behaviors for older adults. The topics included in the course are nutrition, safe and healthy exercise, optimum sleep, stress management and health screening for early detection of disease. Nursing role for the older adults without disability will be the focus of this course, but health promotion concept for the older adults with chronic illness also included in the course contents.

811.616 노인건강문제관리 3-3-0
Management of Elderly Health Problems

이 교과목은 세미나로 운영되는데 이 교과목을 통하여 학생들은 노인건강문제와 관련된 연구들을 분석하여 임상연구에 대한 홍미와 지식을 높인다. 노인관계 시설을 방문하여 노인간호사의 역할 확립을 위한 기회도 갖게 된다. 노인간호특론을 먼저 수강하고 이 과목을 수강하는 것이 바람직하다.

This course provides seminars for presentation and discussion of designated topics related to health researches for the elderly. Students are required to visit health care institutions for senior citizens in order to understand and develop their roles as nurses. It serves as an advanced course in gerontological nursing care.

811.630A 중앙약가론 2-2-0
Introduction to Oncology

이 교과목은 중앙학의 기초가 되는 생명학적 원인과 증상의 유전 기전, 종양의 면역기전 등의 발암기전과 종양의 역학을 이해하고 이 내용을 양의 일차적 예방과 환자의 조기발견(이차적 예방)을 위한 간호에 활용할 수 있도록 구성되어 있다. 암의 예방법이나 조기발견법은 점차로 그 중요도가 증가하고 있고 새로운 방법이 제시되고 있기 때문에 이에 대하여 전반적으로 이해하고 적절히 사항하는 것이 간호 실무에 있어 더욱 필요하다.

Students understand the biological etiology and mechanisms such as immunological and genetic mechanism, and epidemiology of cancer through this basic course. They eventually can apply these principles to the nursing activities of prevention and early detection of cancer. Since these primary and secondary prevention methods of cancer are developing radically and become more important to health care of people, it is important for nursing students to understand and apply these principles to their nursing activities.

811.641 고급병태생리학 3-3-0
Advanced Pathophysiology

간호전단에 나타난 간호개념(혈액, 부정맥, 의식상태, 피로, 호흡곤란, 응고성, 운동장애, 근위축, 종부 등)의 병태생리학적인 기전에 관한 지식을 전달하고 앞으로 이 방향에 관한 연구를 계획하고 수행할 수 있는 기초지식자 체계적으로 심도 있게 배울 것에 목표를 둔다.

This course will provide knowledge regarding pathophysiological mechanisms with relation to nursing diagnoses. Information gained in this course will prepare the student to design and conduct studies for this area in advanced clinical nursing studies.

811.652 중앙간호학특론 3-3-0
Symptom Management in Cancer

암과 치료로 인해서 발생한 신체적 증상과 심리 사회적 문제의 관리에 대해서 이해하고, 그 문제에 대해서 환자와 가족이 적절히 관리하고 대처할 수 있게 하기 위한 간호중재방법에 대해 관련이론과 임상간호실제에 입각하여 다룬다.

This course provides understanding of how to manage physical symptoms and psychosocial problems resulting from cancer and cancer treatment. It is necessary to understand how to manage and cope with patients and family members through theories and clinical nursing practice.

811.661A 중앙간호세미나 2-2-0 Seminars in Advanced Nursing Oncology

이 교과목은 만성 질병화 되어가고 있는 종양에 대응하기 위한 이론적 토론을 습득하고 종양간호의 전반, 간호사와 환자와 관련된 신체적, 심리적 측면의 총합, 사회적, 경제적 측면의 총합, 재활과 지역사회 자원 활용과 관련된 내용을 다룬다. 그 외에도 암환자와 관련된 병처 유리적 총합과 예방, 예방, 암사례의 임상연구 등과 관련된 문제를 다룬다. 그 외에도 대체요법, 가족간호, 호스피스 간호, 환자 자조모임, 종양간호 서비스의 질 평가와 향상방안 등이 포함된다.

This course deals with current issues in oncology nursing. It includes the issues on cancer survivors, such as physical, psychological, social, and economic problems. It also deals with cancer rehabilitation and utilization of community. Besides, it discusses legal and ethical issues related to euthanasia and clinical researches, and alternative therapies, family care, hospice care, self-help group, and the evaluation for the quality of the cancer services.

811.662 행동생리 3-3-0
Physiology of Human Behavior

간호학은 인간의 생물학적, 심리학적, 사회학적 측면을 모두 다루고 있다. 본 과목에서는 인간의 심리학적인 측면과 생물학적인 측면을 통합하여 인간 행동의 생물학적 측면에 관한 지식을 전달한다.

Nursing science deals with the psychologic, physiologic and sociologic aspects of the human being. This course will provide in-depth knowledge about physiologic phenomena and mechanisms of human behavior based on psycho-physiologic research.

811.663 간호약리학특론 3-3-0
Advanced Pharmacology in Nursing

임상적으로 유용한 약물들의 종류, 약의 기전, 약물작용 및 부작용, 그리고 간호에 대한 최신 진단적 지식을 습득한다. 또한 약물이 체내에서 작용하는 과정과 생체에 미치는 효과에 대한 원리를, 그리고 신약 개발과정도 소개하여 전문간호사로 진화하여 관련 연구를 수행하는데 기초를 제공한다.

This course is designed to provide the student with knowledge about the mechanisms of clinical drugs, drug action, possible side-effects, and nursing actions. We will discuss pharmacokinetics and dynamics of each
drug. This course also aims to increase the fundamental knowledge required to plan and conduct the nursing research related to these subjects.

811.667A

Social Welfare and Nursing in Aging

This course is designed to promote advanced professional nursing ability in managing cancer patients by providing principles of oncology therapeutics and nursing. It deals with new knowledge and perspectives on oncology treatments, such as surgery, radiation therapy, chemotherapy, biological therapy, and gene therapy. It also deals with pathophysiology, diagnosis, classification, stages and specific treatments of cancer, such as gastric cancer, liver cancer, lung cancer, breast cancer, and so on.

811.677

Gerontological Nursing Practicum and Hospital and Community

The objectives of this course are to understand social welfare system in Korea and worldwide, and to identify the roles of advanced practice nurse in this system. This course will use seminar format and topics related to the health care system, the role of social worker, and the diverse nursing care services for older adults will be included. Through this course, students are expected to grasp in-depth understanding of social policy in our nation and to be able to propose ideas of improvement. Students also learn the multidisciplinary aspect of gerontological care team and how to cooperate in the team as a nurse.

811.669

Bowel and Gastrointestinal Care

This course is the clinical course with the older adults subjects in the community who are temporarily hospitalized, or the user of adult day-care facilities. This course is divided to three different courses with different focuses; older adult subjects who are followed by out-patient department, older adult subjects visiting out-patient department, and older adult subjects utilizing adult day care facilities. The practicum is organized around the assessment and management of health problems for these population under the supervision of clinical preceptors.

811.677

Oncology Therapeutics and Nursing 1

This course deals with the application of theories of surgical cancer treatments to the professional oncology nursing practice. Students will learn about various diagnostic tests and pre-operative nursing care. They also learn about various operative procedures of gastrectomy, mastectomy, lobectomy, colostomy, and etc. This course also deals with pain management, wound and ostomy care of patients after the operation. Patient education and counseling and discharge planning education will also be included.

811.685

Oncology Nursing 2

This course is designed to promote advanced professional nursing ability in managing cancer patients by providing the principles of oncology therapeutics and nursing. It deals with pathophysiology, diagnosis, classification, stages, and treatments of hematologic malignancies and other specific types of cancer as well as cancers occurring in children and adolescents. It includes nursing care of bone marrow transplantations and pediatric cancer.

811.684

Surgical Oncology Practicum
This course is aimed to apply knowledge related to special kinds of cancer and treatments such as bone marrow transplantation to nursing practice. It includes bone marrow transplantation procedures, complications of transplantations, and future directions and advances in bone marrow transplantation. It will also deal with legal and ethical issues related to transplantations. It also includes assessment and management of childhood cancer and the family care of it.

This course is aimed to apply knowledge of hospice care for the end-stage cancer patients, and health care for cancer survivors living at home to home care setting. In order to maximize quality of life for patient and family, it includes education of recurrence, self-examination of various cancer to detect in early stage, development of educational program for cancer patient and family, health-related behavior, alternative therapy. It will also deal with operation and management of self-help groups, support for the caregiver, and other psychosocial issues, such as the impact of cancer on sexuality.

**Practicum for Oncology Home Care**

This course focuses on the application of theories of medical cancer treatments to the professional oncology nursing practice. Students will learn specific and advanced nursing care of patients with chemotherapy or radiation therapy, with understanding of the complications and side effects of each therapy. Besides, students learn the care of blood transfusion, lymph edema, and stoma, et al. which are closely related with cancer treatment. And students will visit various cancer related facilities to learn more about new therapies such as immuno-therapy, gene therapy, and etc.
an opportunity to expand their knowledge and the ways of thinking to propose and conduct their own research in this area by learning the influencing factors, strategies, and issues in reference to self-management in chronically ill patients. Throughout the course, students will be able to obtain not only the knowledge and research skills but the becoming role as an intervening agency to improve self-management for the people with chronic illnesses.

M0000.003600 스트레스 및 웰니스 3-3-0

Stress and Wellness

스트레스는 다양한 만성질환을 유발할 수 있는 주요 위험, 유발 요인이다. 따라서 질병의 예방 및 건강증진을 위해 스트레스를 효과적으로 관리할 필요가 있으며, 그러기 위해서는 스트레스에 대한 관리적, 정량적 평가지표가 필요하다. 한편 스트레스와 반대되는 개념인 웰니스(wellness)는 심리적, 생리적으로 조화롭고 안정된 건강을 의미하며 이는 전인적 건강을 통해 이루고자 하는 이와 같은 건강상태인 것이다. 스트레스와 마찬가지로 개개인의 웰니스(wellness)를 평가하기 위한 객관적 지표를 통해 측정할 수 있으며 스트레스와의 차이점에 대해 고찰할 것이다.

본 과정에서는, 스트레스, 생체신호, 안구움직임, 안면진동, 스트레스 호르몬, 염증물질, 스트레스 평가설문지 등의 스트레스 및 웰니스에 대한 생물학적, 심리학적, 신체적 평가와 관련된 다양한 방법들을 분석하고 학습한다.

Stress is major precipitating factor for various chronic disorders. Effective management of stress is essential for disease-prevention and health-promotion. So the development of objective and quantitative biomarker for stress evaluation is very important. Wellness means psychologically and physiologically well-balanced and harmonized state and goal of nursing care. Such as stress, objective measurement of wellness status can support paradigm-shift for health-centered medicine. This course is about various research methodology for measuring stress and wellness by means of EEG, bio-signals, eye-movement, face vibration, stress hormone, inflammation material and stress questionnaire.

M0000.007100 노인간호학세미나 3-3-0

Gerontological Nursing Seminar

노인연구의 증가와 함께 노인간호학의 발전에 대한 요구가 커지고 있다. 본 과목에서는 노인간호학과 노인학의 발전 과정, 노인간호학의 중요 개념과 이론, 노인간호학의 전반적인 경향 등을 고찰할 것이며 이를 통해 수면증후군은 노인간호학 연구에 대한 경향과 수준을 이해할 수 있음을 것이다. 이 과목을 통하여 학생들은 노인간호학 분야의 연구를 하기 위한 기본적인 개념과 기술을 갖춘다.

Increasing number of older population, health needs of older people is an important part of nursing research. In this course, literatures related to historical background of evolution of the gerontological nursing and gerontology, major theories and concepts in gerontological nursing, development of gerontological nursing research, recent trend of gerontological nursing research. Through this course, students will acquire basic information for gerontological nursing research and practice.

M0000.010800 맞춤간호중재연구 3-3-0

Tailored Nursing Intervention Research

장기간 서비스가 환자의 개별성에 맞추어 제공되어야한다는 웰

이 강의는 만성 질환환자의 회복을 지원하고 삶의 질을 갖추고 있다. 이 강의는 만성 질환환자 특수 심혈관, 예를 들면, 만성환자의 수면장애와 피로의 병태생리적 기전과 다양한 양상은 보완하는 내용으로 한다. 또한 수면장애와 피로의 관련 요인, 그리고 우울과의 관계등을 문헌을 통해 살펴보고 Actigraph을 이용하여 수면장애의 심리적 변화를 측정할 수 있게 한다. 이는 복합적으로 만성 환자 수면장애와 피로를 연구하고자 하는 대학원생에게 연구 역량을 기르고 이해를 높이며 관심 분야의 대학원생들에게 기초 지식과 경험을 제공한다.

Sleep disturbances and fatigue are common in patients with chronic diseases. These may negatively influence the patient’s recovery and quality of life. This course intends to give an overview of the various aspects of sleep disturbances (daytime sleepiness and insomnia) and fatigue in patients with cardiovascular, stroke and cancer patients. The course will also deal with the relating factors to sleep disturbances such as depression, pain, and disease severity. By providing the hands on experience with an actigraph, an objective sleep measurement, the students will have a deeper understanding of sleep disturbances in these patients.

M0000.013400 만성 환자의 수면장애와 피로 3-3-0

Sleep disturbances and fatigue in patients with chronic disease

노인 간호 영역에서 테크놀로지를 활용한 간호서비스가 확대되고 있는 가운데, 본 과목은 (1) 노인간호의 발전에 대한 수면장애와 관련된 이론과 사고를 통해, 만성병 관리, 만성병 관리, 치매간호 분야 등에서 사용되고 있는 관련 테크놀로지를 고찰하며, (2) 테크놀로지를 활용한 노인간호서비스 개발에 대한 한 상태, 효과성, 적절성, 유용성, 윤리적 문제점을 분석 논의한다.

The graduate course is to provide an overview of technologies that have potential to be applied in caring for the aged. First, the course introduces students to the universe of issues associated with aging and ethical use of technology to meet their health needs. Topics include demographics of the aging population, health needs in later life, existing and emerging technologies in aging services, privacy and security.

M0000.013300 만성 환자의 수면장애와 피로 3-3-0

Sleep disturbances and fatigue in patients with chronic disease

노인 간호 영역에서 테크놀로지를 활용한 간호서비스가 확대되고 있는 가운데, 본 과목은 (1) 노인간호의 발전에 대한 수면장애와 관련된 이론과 사고를 통해, 만성병 관리, 만성병 관리, 치매간호 분야 등에서 사용되고 있는 관련 테크놀로지를 고찰하며, (2) 테크놀로지를 활용한 노인간호서비스 개발에 대한 한 상태, 효과성, 적절성, 유용성, 윤리적 문제점을 분석 논의한다.

The graduate course is to provide an overview of technologies that have potential to be applied in caring for the aged. First, the course introduces students to the universe of issues associated with aging and ethical use of technology to meet their health needs. Topics include demographics of the aging population, health needs in later life, existing and emerging technologies in aging services, privacy and security.
issues, benefits and barriers to technology adoption, and discussion on nurses' roles in gerontechnology. Then, the course focuses on selecting and evaluating technologies that are currently or possibly used in supporting the health and independence of older adults. Students will critique selected technologies in terms of effectiveness, appropriateness, and usability in improving the health of elders.

M0000.019500 고급 중환자간호학 세미나 3-3-0

Advanced Critical Care Nursing Seminar

The course provides roles as researcher, educators, and clinicians, and practice in fundamentals of nursing. This course reviews evidence-based practice models and provide application strategies.

M0000.019600 최신 기본간호학 세미나 3-3-0

Topical seminar on fundamentals of nursing

This course aims to make students understand the principles of infection control, analyze the necessary evidence for infection control have been further emphasized. This course intends to give an overview of the various aspects of physiology with relation to nursing practice and research. The course will deal with evidence-based guide-line update as well as recent theory and cutting-edge knowledge.

M1991.000200 심신통합치유과학 3-3-0

Mind-body integrative healing science

This course focuses on selecting and evaluating technologies that are currently or possibly used in supporting the health and independence of older adults. Students will critique selected technologies in terms of effectiveness, appropriateness, and usability in improving the health of elders.

M1991.000300 간호임상생리학 3-3-0

Clinical nursing physiology

This course deals with basic understanding of clinical physiology and current intervention methods to optimize patient outcomes. The course will deal with evidence-based guide-line update as well as recent theory and cutting-edge knowledge.

M2186.000200 병원역학과 감염관리간호 3-3-0

Hospital Epidemiology and Infection Control Nursing

This course focuses on selecting and evaluating technologies that are currently or possibly used in supporting the health and independence of older adults. Students will critique selected technologies in terms of effectiveness, appropriateness, and usability in improving the health of elders.
811.523 간호관리이론 3-3-0
Management Theory in Nursing
간호관리에 대한 제 이론을 학습함으로써, 간호관리에 관한 이론과 실제 간호관리의 균형을 수행하는 데 필요한 지도성과 행정을 효과적으로 활용하기 위한 것이다.
This course studies various theories of nursing management, enabling future nursing managers to effectively use leadership strategies and administrative techniques in their field.

811.613 건강증진과 간호 3-3-0
Health Promotion in Nursing
건강증진과 건강증진에 대한 이론을 학습함으로써, 지속적인 행진에 대한 지도성과 행정법을 효과적으로 활용하기 위함이다.
This course focuses on understanding major concepts and theories of health promotion, of which more individuals get interested in due to the change of disease patterns. Based on the health promotion theories, students will practice planning, implementing, and evaluating health promotion programs in a variety of community settings.

811.642A 간호개념측정 및 도구개발 3-3-0
Measurement of Nursing Concept
본 교과목은 간호개념의 측정 도구 개발과정에서 필요한 측정 이론, 문항 개발 및 분석, 그리고 개발된 도구의 적용과정에 필요한 내용을 강의와 발표를 통해 학습하고, 실제 도구개발을 실습하여 자신이 관심을 가진 개념에 대한 도구를 개발하는 데 있다.
In this course students will learn concept analysis, test theory, measurement such as reliability and validity, item development and analysis, application of measurement scales. Students will pick a concept in the areas of his/her interests, develop a measurement scale for the concept and test the measurement scale in the field.

811.646 지역사회간호연구 3-3-0
Community Health Nursing Research
간호연구방법론과 간호이론을 기반으로 하는 지역사회간호학의 대상, 설계, 분석, 그리고 지역사회 간호사의 간호사 상호작용 등 4영역에서의 간호관계를 찾아 이론적 개념들을 탐색하여 이에 적합한 간호연구방법을 설계하는 교과목으로 세미나 형식으로 운영한다.
This course will provide advanced knowledge about bio-statistics and deal with its clinical application. After this course, students will be able to plan and perform survey studies, experimental studies, evaluative studies, secondary data analysis studies, and so on in a community setting.

811.647 간호업무평가론 3-3-0
Performance Evaluation in Nursing
보건의료업무의 분야에 있어서 간호사가 수행하는 다양한 역할과 업무성과를 평가하는 데 필요한 이론과 체계, 평가 방법 등을 고찰하고, 이를 자신의 임상실무에 적용할 수 있는 간호업무평가시스템을 개발한다.
This course examines theories, principles and various methods for conducting a nursing performance evaluation fairly and effectively at healthcare organizations. Students are
expected to develop a performance evaluation system applicable to their clinical practice.

811.670 간호정보시스템분석 및 설계 3-3-0
Nursing Information System Analysis and Design

간호정보시스템을 체계적으로 개발하고 관리하기 위한 기본 지식의 배양과 정보시스템을 분석하고 설계하는데 필요한 기초 개념과 방법론을 배우는 기본 과목으로서 본 교육과정에서는 정보시스템 개발 방법론, 구조의 분석과 설계, 데이터베이스 분석과 설계, 개체지향 분석과 설계에 대해 학습한다.

이 과정에서, 학생들은 이론적 기초를 익히고 실습을 통해 학습한다.

811.672 간호정보시스템 데이터베이스 설계 및 개발 3-3-0
Nursing Information System Database Design and Development

본 교육과정에서는 간호정보시스템에 대한 데이터베이스 개발의 기반을 제공하고 이에 따른 설계 과정에 대한 실습을 제공한다. 학생들은 데이터베이스 설계 과정에서 필요한 기술을 익히게 되며, 이 과정을 통해 소프트웨어의 활용법을 익히게 된다.

811.673 간호정보시스템구현 및 평가 3-3-0
Nursing Information System Implementation and Evaluation

학생들은 실제 임상에서 간호정보시스템을 성공적으로 구현하고 평가하는 과정을 익히게 된다. 실제 임상에서 운영되고 있는 시스템을 활용하여 학습한다.

In this course, students learn how to implement and evaluate nursing information systems. Students can learn directly by implementing a system in a real clinical setting or indirectly by interacting with the nurse informaticists from the industry. Students with an ongoing project from the systems analysis and database design courses may opt to implement the system as part of this course.

811.674 의사결정지원시스템 3-3-0
Decision Making Support System in Public Health

본 교육과정에서는 의료정보분야에서 의사결정을 내리는 과정과 관련된 전반을 학습하게 한다. 이 과목에서는 생물체적, 환경, 산업, 집단에서의 의사결정 과정과 관련된 기초적 기초를 다루고 학생들은 고급 인문학 정보를 구현하는 다양한 소프트웨어의 활용법을 익힌다.

Clinical Decision Support allows students to explore issues related to clinical decision making. Students explore the theoretical foundations of multiple techniques for knowledge representation such as production rules, fuzzy logic, Bayes Theorem, neural nets, and clinical cases (case based reasoning). During lab sessions, students apply multiple software techniques to implement the theoretical models discussed throughout the course.

811.681 소비자건강정보학 3-3-0
Consumer Health Informatics

인터넷의 확산으로 대변되는 정보의 시대에서 전문가가 아닌 일반인들도 건강 및 의료정보에 접근할 수 있게 되었다. 또한 소비자주의(consumerism)의 개념이 인식되면서, 의료기술과의 인터넷 건강정보에 대변되는 정보를 활용하는 주제로서 인식하고 관심을 끌어모아가 되었다. 본 교육과정에서는 의료정보의 수혜자인 소비자로서 의료정보를 활용하려는 방안을 모색한다. 이 과정을 통해 의료정보학과 관련된 새로운 방식과 개념의 "소비자 의료정보학"을 이해하도록 하는 과정이다.

The advancement of new consumerism made patients active consumers of medical and nursing services and related information. This course has the objectives of providing quality health and medical information to health consumers, and empowering the health consumers by educating them and monitoring, evaluating the internet health resources.
technology and computer technology. Nursing as a profession should be familiar with these e-health concept and knowledge management to empower itself and be recognized as unique profession. This course enables students to learn and utilize e-health and IT skills.

811.693
Long Term Care Policy and Nursing

This subject is focus to set up of long term care policy and nursing service providing pattern in our country, through comparing and analyzing relationship of long term care and nursing in a developed country. This course will allow students and nurse managers to improve practice, education and management.

811.694
Economics and Nursing

This is a course on the economics of nursing care and nursing policy. The course explores the basic microeconomics, welfare economics, and the economic rationale for government’s intervention in health care services as well as health policy. Second, it looks at economic analysis of health policy for nurses and nursing services, and suggests alternative health policies to improve the performance of health care system. This course is designed to help students to develop two skills. First, students will learn to identify which health policy problems regarding nursing care require government action and to construct sound economic arguments for the government action. Second, students will gain experience in applying microeconomics to predict the impact of government policies on the behavior of nurses and other providers.

811.695
Financial Management for Nursing Services

This course offers financial insight into understanding the Korean hospitals and assists students in learning financial management and analytical skills necessary for developing practical strategies to improve financial outcomes of nursing department in health care institutions as well as to analyse the cost of nursing services in the context of national health insurance.
sary to realize the overarching goal in global nursing.

Patient Safety and Quality Management in Health Care System

This course provides an understanding of the science of safety and how it relates to patient safety in health care. The course will help students to identify and analyze patient safety issues, and to develop strategies for enhancing patient safety and quality of care in health care.

Studies in Nursing Workforce Policy

The nursing workforce is the major workforce in the health care sector and has contributed to improving the health of the nation. To provide high quality nursing care, nursing workforce policies, including nursing workforce supply and demand, skill-mix (advanced practice registered nurses, registered nurses, and assistive nursing personnel), geographic distribution, and quality (e.g., education and licensure) need to be considered. This course will provide an overview of nursing workforce policy and research findings required to develop evidence-based policy at both organizational and national levels.

Big Data Analytics for Healthcare

Current issues in HIT (Healthcare Information Technology) requiring visionary perspective for redefining nursing informatics education and practice. Future trends in Nursing Informatics in clinical, academic, and administrative settings must be taught for making nurses proficient in information driven digital environment in healthcare.

Learning Objectives
1. Discuss revisions in the Scope and Standards of Practice for Nursing Informatics
2. Identify reasons why now is a critical period for updating scope and standards
3. Analyze current issues in healthcare IT requiring visionary perspective for redefining nursing informatics education and practice
4. Identify future trends in Nursing Informatics in clinical, academic, and administrative settings
경 영 대 학
College of Business Administration
공통과목(Core Courses)

250,514A 상법연구 1 3-3-0

Legal Aspects of Business 1

본 과목은 <상법연구 2>는 경영자가 경영 현실에서 필요한 법적 측면을 사례를 통해 학습한다. 학생들은 관련 법적 체계를 이해하고, 현장에서 발생할 법적 문제를 분석하고, 효율적인 해결책을 제시할 수 있도록 수업이 진행된다. 이를 위해 전통적 강의를 통합하고, 학생들의 긴급간담회를 제공함으로써 국적연구, 국외법력, 전자상거래에 관한 분야도 포함한다. 구체적 법의 원칙, 법령, 판례들은 전반적인 관례와 사례연구를 통하여 현실감있는 학습을 돕도록 한다. 본 과목의 주요 토지는 법과 윤리, 분규해결의 소송외적 다양한 방법들, 대리계약, 상거래와 전자상거래, 불법행위, 제조자책산권 및 사이버법 등이다.

The courses <Legal Aspects of Business 1 and 2> cover the legal aspects of business that will help students have a balanced judgment in decision making, situation analysis and decision enforcements. In Legal Aspects of Business 1 we will go over not only the traditional areas of laws regarding commercial transactions and business organizations but also torts, criminal law, labor law, administrative law, environmental law and consumer protection law. Laws regarding international trade and transaction, and e-commerce will be examined as well. Students will have an in-depth understanding of the important issues and applicable laws by examining the up-to-date case laws and case studies. Major topics of this course include: Ethics & the Law, ADR, Agency, Contracts, Sales and E-Commerce, Torts, Product Liability, Intellectual Property and Cyber Law.

250,629 경영전략연구 3-3-0

Studies in Corporate Strategy

본 과목은 전략적 경영의 관점에서 기업의 다국적 경영에 대한 리서치를 수행하고자 하는 학생들에게 기본적인 개념과 틀을 제공하고자 한다. 본 과목은 주로 석사과정 학생들이 외적개념에 대해 학습하였기 때문에 강의내용을 단순한 이해가 아니라 비판적 기르는 데 보다 중점을 두고 진행된 것이다.

This course provides fundamental concepts and frameworks of strategic management to the students who will carry out research on multinational business management. It will focus on improving the critical thinking of graduate-level students. The students are expected to comprehend the assigned readings and raise important issues in class discussions.

250,632 경영혁신론 3-3-0

Innovations and Management

본 과목은 무한경쟁 시대에서 생존하기 위한 기업의 전략적 행동, 경영혁신에 대해 다룬다. 경영혁신에 의한 새로운 비즈니스의 개발과 생산의 개선과 같은 주제를 다룬다. 모든 기업의 경영혁신 활동에 대해 실적적인 사례연구로 실제적인 혁신기법의 적용에 대한 경험을 할 수 있도록 수업이 진행된다.

This course will cover the subject of management innovations, the strategic actions of firms to survive in the limitless competition. It will examine the theoretical background and techniques of management innovations. Students will be expected to apply innovative techniques to actual cases after analyzing in-depth case studies of domestic and international firms.

학점구조는 "학점수-주당 강의시간-주당 실습시간"을 표시한다. 한 학기는 15주로 구성됨. (The first number means "credits"; the second number means "lecture hours per week"; and the final number means "laboratory hours per week. 15 weeks make one semester.)

250,634 전략계획 및 실행론 3-3-0

Strategy Formulation and Implementation

본 과목은 기업이 지속적인 경쟁우위를 창출하기 위한 전략의 수립 및 실행에 관한 기초적인 자리를 전달하는 것을 목적으로 한다. 본 과목은 대학원과정에서 처음으로 전략계획을 배우고자 하는 학생 및 전략경영에 관한 지식을 전반적이고 포괄적인 시각으로 제공하고자 하는 학생들에게 적합하다.

This course will provide fundamental knowledge of strategy formulation and implementation to create sustainable competitive advantages. It is designed for graduate-level students who want to learn the basics of strategic management, or who plan to comprehensively review the relevant knowledge.

250,636 전자상거래연구 3-3-0

Studies in Electronic Commerce

본 과목은 전자상거래의 개요와 기초적인 웹 프로그래밍 기법에 대해 학습한다. 학생들은 이론과 관련된 첫 주제를 선정해서 발표해야 하며, 기말 팀 프로젝트에도 참여해야 한다.

This course will provide students with an overview of Electronic Commerce, e-Business, and basic Web application programming techniques. Each student is expected to select and present one topic related to current issues, and participate in a term project.

251,803 대학원논문연구 3-3-0

Reading and Research

이 과목에서는 비정규적인 강의와 함께 연구를 수행하는 데 있어 필요한 기법을 익히기 위한 몇 개의 토론 분과가 마련되어 있다. 강의는 이론과 실험연구에 있어 대표적인 논문들뿐만 아니라, 연구방법론에 관한 논문들도 포함한다. 학생들은 강독 논문들을 평가하는 방식과 함께 자신의 관심분야 연구를 위한 기말논문을 제출하여야 한다.

This course adopts both lectures and discussions in order to acquire research skills. It covers readings of various theories, practices, and research methodologies. Students are required to evaluate reading articles and to submit final term papers.

회계학전공(Accounting Major)

251,501 관리회계연구 3-3-0

Studies in Managerial Accounting

본 과목은 현행 관리회계론에 대한 이론적 기초와 실증연구에 대해 설명하고자 한다. 기본적인 대리인론과 상황 이론뿐만 아니라 전략에 미치는 영향을 소개한다. 실제연구는 실험, 현장연구 그리고 일부를 이용한 통계적 연구들을 포함한다. 시간제약으로서 ABC/ABM, BSC, Target Costing, Theory of Constraints, 그리고 ERP 등의 관련학문 주제로 이론들과 그 결과가 조직, 경영권, 전략에 미치는 영향을 소개한다.

This course is a seminar on theoretical foundations and empirical analyses of current management accounting questions and problems. Theoretical foundations such as agency theory (at a basic level), and contingency theory will be discussed. Empirical analyses include experiments, field stud-
ies, and statistical tests of archival data. Because of time limitations, students will not cover simulations, experimental market studies, or mailed surveys. Topics include innovations in management accounting such as ABC/ABM, BSC, Target Costing, Theory of Constraints, and ERP, and their impact on organizations, managers, and strategies.

251.510 Strategic Cost Management

This course takes a strategic approach to the planning and control of costs and revenues, and to the design of management accounting control systems. The focus is on the strategic use of cost information, with an emphasis on the role of cost accounting in strategic decision making. Students will learn how to apply cost concepts and techniques to support strategic decision making, and to evaluate the effectiveness of management accounting systems.

251.511 Studies in Auditing

This course provides an overview of the audit process and the role of the auditor in the financial reporting system. Topics include the concept of audit risk, audit evidence, and audit reporting. The course also covers professional ethics and the role of the auditor in the capital markets.

251.512 Tax Accounting

This course provides an overview of the principles and practices of tax accounting. Students will learn about the tax reporting requirements of businesses, the tax implications of business decisions, and the role of the accountant in tax planning.

251.513A Advanced Accounting

This course is designed to read papers and discuss the implications of recent research in accounting. Topics may include financial reporting, auditing, tax accounting, and management accounting.

251.515 Corporate Accounting and Financial Reporting

This course provides an overview of the principles and practices of corporate accounting and financial reporting. Students will learn about the preparation of financial statements, the role of financial reporting in corporate governance, and the impact of financial reporting on capital market decisions.

251.613A Advanced Financial Statement Analysis and Firm Valuation

This course provides advanced training in the analysis of financial statements and the valuation of firms. Students will learn how to use financial statement analysis to make investment decisions, and to use valuation models to estimate the intrinsic value of firms.

251.618 Methodology of Accounting Research

This course provides an overview of the methods and techniques used in accounting research. Students will learn about the design of accounting research, the methods of data collection, and the analysis of accounting data.
search methodology and statistical methods for accounting research. This course will help students to understand research trends in various accounting areas, to read accounting research papers critically, to conduct research, and to write masters’ theses systematically and effectively in graduate school.

251,619 Accounting Modeling and Analysis

This course will make an in-depth study of research papers using quantitative methods among various research areas in accounting.

251,621 Capital Market Studies in Accounting

The purpose of this course is to expose students to: capital market based contemporary research issues on external financial reporting and research methodology employed to address those issues. The course places its primary emphasis on controversial issues relating to the production, dissemination, and use of financial accounting information for economic decisions by external users, rather than the technical rules and procedures used to generate accounting numbers. The materials to be covered are largely “empirical,” selected from leading journals and related literatures.

251,624 International Accounting

The purpose of this course is to study accounting procedures of various economic phenomena occurring in international corporate transactions. This course will cover foreign currency transactions, forward exchange transactions, accounting for mergers, accounting for consolidation, and basic contents of international taxation, and will analyze the differences of accounting procedures in each topic in various countries. Students must understand the basic concepts of accounting to attend this course.

251,625 Studies in Financial Accounting Theory

This course not only enumerates accounting methods of specific transactions and events, but explains the fundamental reasons about the above accounting procedures, allowing the students to understand them systemically. This course introduces not only accounting theory but also Korean corporate accounting Standards and make students compare one with the other.

251,704 Contemporary Issues in Accounting

This course deals with various research methodologies including empirical, analytical and behavioral ones. Specific topics will include market study, empirical/analytical issues of financial/managerial accounting, tax and auditing issues.

생산관리전공(Operations Management Major)

251,541 Analysis of Production Strategies

This course focuses on strategic operations decisions that have long-term and irreversible impact of a firm’s ability to compete and survive. The course provides exposure to the major concepts of operations strategy. Topics covered include capacity and facility planning, total quality management, design for manufacturing, vertical integration and new product development.

251,543 Production-Inventory Systems

This core course focuses on understanding levers for structuring, managing, and improving a firm’s recurring business processes to achieve a competitive advantage in customer re-
sponsiveness, price, quality, and a variety of products and services. The fundamental principles underlying state-of-the-art practices, such as Quick Response, Just-in-Time and Time-Based Competition, are explored so that students learn to critically evaluate these and other operational improvement programs.

251.545  
**Total Quality Management**

This course provides students with opportunities to read recent articles and cases of production management, and to discuss various production topics. The main contents include: Material Requirement planning, Supply Chain Management, Total Quality Management, E-Business, and ERP.

251.652  
**Management Science**

This course incorporates probability material, decision models and analysis. Based on decision-making modes and probability theories, the course analyzes such issues as facility location and transportation.

251.680  
**Service Operations Management**

This course focuses on the management and improvement of supply chain processes. Students will begin with the following supply chain basics: what are the important supply chain metrics; what are the primary cost tradeoffs; and what are the key features of the transportation industry? Students will next consider supply chain incentive conflicts and possible solutions to those conflicts. Several recent and influential innovations will then be discussed: Accurate Response, Continuous Product Replenishment, cross docking, Efficient Consumer Response, Postponement, Quick Response, Rapid Delivery, and Vendor Managed Inventories. Students will investigate supplier management and the outsouring decision, and also touch upon International supply chains. The course will conclude with a broad discussion of the impact of electronic commerce on supply chains.
Management of Management

This course discusses strategic management of technology in start-up and established firms. It focuses on the changes and the interactions of business environment, internal business capabilities, technologies, and markets.

251.555B Studies in Information Systems Integration Management

This course focuses on the integration of information systems infrastructures and deals with various integration and infrastructures management issues. In addition, this course covers the latest trends and issues of information systems development, such as enterprise information systems architecture design, project and change management. Also, this course is about the studying of various technology-oriented research of information systems. Through this, students are expected to understand how to formulate research problems, develop theories, and design an information systems research study. Students are required to participate actively in the class. So, this course will require the discussion about the research performance in the end of semester, after choosing the topics which are related to information systems theories. Students are also needed to understand broadly about their chosen topics, selected among the latest technologies.

Information Systems Seminar 1

This course is about the studying of various behavior-oriented research of information systems. Through this, students are expected to achieve the latest trends of research and theories in this field. Also, this course provides a broad introduction to network technologies, architectures, services and management necessary to meet business needs. Students are expected to understand how to formulate research problems, develop theories, and design an information systems research study. Students are required to participate actively in the class. So, this course will require the discussion about the research performance in the end of semester, after choosing the topics which are related to information systems technologies. Students are also needed to understand broadly about their chosen topics, selected among the latest technologies.
students are also needed to understand broadly about their chosen topics, selected among the latest technologies.

251.739 Information System Research Methodology

This course comprehensively reviews the methodological issues of information systems (IS) research. Specific topics will include the philosophical basis for the IS research, relevant case studies, and univariate/multivariate data analysis.

251.745 Organization and Information Systems Seminar

This course explores the socio-cultural issues of the development and the use of information systems by organizations. Specific topics will include information systems modeling, information technology in an organizational structure and its changes, as well as information privacy.

251.746 Information Systems Development Seminar

This course examines the concepts and the practices of information system (IS) development. It covers research issues around the development life cycle, as well as the methods for system development with emphasis on modelling and simulation.

251.562A Studies in Price Management

The purpose of this course is to present a framework for making scientific pricing decisions, the critical managerial decision to maximize a firm’s profit. The course is structured around marketing’s three C’s: Costs, Customers, and Competitors. Based on these three fundamental concepts, students will study various pricing strategies such as nonlinear pricing, odd pricing, and so on.

251.574A Seminar in Promotion Management

This course examines theories, concepts, and applications related to marketing communication activities. It covers various functions such as advertising, sales promotion, publicity, personal selling, and direct marketing.

251.575A Seminar in New Product Development and Product Management

This is a seminar course on the development and management of new products and designed to review various theories and statistical quantitative models relevant to product development and management. These topics include demand forecasting, conjoint, 4P, and brand management.

251.576A Studies in Consumer Behavior

The purpose of this course is to provide a deep understanding of consumer behavior. In this course, students are required to discuss major issues about consumer behavior and to perform some projects based on case studies and in-depth interviews, thereby learning the strategic application of this knowledge.

251.556A Marketing Research

This course introduces statistical theories and methods critical to conduct academic researches involving research procedure, research design, analysis, and inference. Examples of topics are inference on relationship, causal relationship, experimental design, hypothesis development, hypothesis test, and multivariate data analysis.
251.579 Service Marketing 3-3-0

This course will teach students how to lead and manage successful service organizations by delivering quality services. The course will cover the concepts and applications of service marketing strategies. It introduces an integrated service management framework that involves the strategic elements of a service marketing mix.

251.583 High-Tech Marketing 3-3-0

The focus of this course is to discuss the marketing problems primarily relevant to technology-based companies. Topics include product, price, and time-based strategies. Concepts such as increasing returns, the chasm model, disruptive innovation, product platform strategy, standard wars, and innovation diffusion will be covered.

251.673A Studies in Quantitative Marketing Decision-Making 3-3-0

This course introduces fundamental concepts of statistical models developed in order to support marketing decision-making problems, including product, price, and time-based strategies. Concepts such as increasing returns, the chasm model, disruptive innovation, product platform strategy, standard wars, and innovation diffusion will be covered.

251.675 Seminar in Marketing 3-3-0

This course provides seminars for critical review of theoretical research in consumer behavior. It helps students better understand the topic through reading related articles, making presentations, and preparing research papers.
251.776 Seminar in Consumer Psychology: Information Processing, Motivation and Persuasion

This course is designed to familiarize students with key research in social psychology and social cognition in the context of consumer psychology and develop a research project by applying those theories and methods to marketing-based questions.

252.501 Studies in Investment

This course introduces the theories and the practices of investment decision-making. It focuses on the selection and the evaluation of investment portfolios regarding stocks and bonds. The course provides a conceptual framework to understand the investment process, rather than institutional details. Basic knowledge about statistics and mathematics, including linear algebra, is required.

252.502 Capital Market Theory

This course introduces modern theories on capital market. Specific topics will include the choice of consumption-investment, CAPM, APT, option pricing theories, and term structure models. It also covers microstructure theories related to the role of information asymmetry and transaction costs in price dynamics. Mathematical knowledge is required.

252.505 Studies in Financial Institutions

This course introduces modern theories on capital market. Specific topics will include the choice of consumption-investment, CAPM, APT, option pricing theories, and term structure models. It also covers microstructure theories related to the role of information asymmetry and transaction costs in price dynamics. Mathematical knowledge is required.
This course familiarizes students with necessary skills to utilize and evaluate financial derivative assets such as futures, options, and swaps. It provides in depth study of related major theories and investment strategies. Some of the topics require considerable level of mathematical knowledge.

252.616 포트폴리오관리연구 3-3-0

Studies in Portfolio Management

This course introduces basic concepts of portfolio management. It covers contemporary issues such as the Fama-French 3-factor model, along with its practical applications, trading costs, and other newly emerging issues of portfolio management. Investment Theory and Elementary Statistics courses are prerequisites.

252.621 보험과 위험관리연구 3-3-0

Studies in Insurance and Risk Management

This course familiarizes students with necessary skills to manage, utilize and evaluate financial derivative assets such as futures, options, and swaps. It provides in depth study of related major theories and investment strategies. Some of the topics require considerable level of mathematical knowledge.

252.623 기업지배구조심층연구 3-3-0

Empirical Studies in Corporate Governance

This course is intended to develop students ability in writing quality academic papers in the area of empirical corporate governance that would be a plausible submission to an SSCI journal. Students will be exposed to previous literature as well as the current research trend in this area. Covered topics include ownership and control, managerial incentives, board of directors, institutional activism, market for corporate control, and legal protection of investor rights.
252.624

Studies in Capital Market Theory

This course consists of a series of lectures on some advanced subjects that are not covered in ‘Studies in Investments’ or ‘Studies in Derivative Markets’. Topics to be covered include investors’ attitudes towards risk, stochastic dominance, asset pricing models in both partial and general equilibrium, bond valuation, and valuation and application of derivative securities. The course will focus on the analytical aspects of these topics at a technical level.

252.713A

Empirical Research in Investments

This course is designed for Ph.D./Master students in Finance to achieve advanced knowledge on empirical methods for financial research. The class format is discussion-taught with topics described below and focuses on empirical techniques frequently used in financial research. Students will learn how to apply econometric methods to the test of asset pricing models and other financial research issues. Topics to cover in class include (a) properties and predictability of asset returns; (b) tests of asset pricing models (CAPM, APT, Consumption-based models, Intertemporal CAPM); (c) market efficiency and anomalies; (d) information, trading ability of asset returns; (b) tests of asset pricing models and other financial research issues.

252.715A

Asset Pricing Theory

This course will introduce to the first year doctoral students fundamental asset pricing theories to apply these theories in their original dissertations. The course will include utility theories, arbitrage pricing theory, options pricing models, capital asset pricing model, consumption asset pricing model, present value relations, information and asset pricing model, especially with static models. If time permits, we will cover dynamic theories, too.

252.719A

Empirical Research in Corporate Finance

This course is designed to help graduate students develop a deeper understanding of the issues and the basic tools needed for corporate finance. It is designed for graduate students who have taken introductory corporate finance course and/or an investments course in a graduate level. Extending advanced corporate finance theories, this course prepares students to apply the concepts and theories to empirically analyze real world issues including firms’ capital structure decisions, corporate valuations, mergers and acquisitions, payout policies, real options and corporate governance.

252.721A

Corporate Finance Theory

This course has three main objectives. First, it will introduce you to the basics of information economics as an essential part of your intellectual tool kit for corporate finance issues. Second, it will also introduce you to theoretical issues in corporate finance beyond what is taught at the MBA level. Third, having been equipped with techniques from information economics and with understanding of the main issues of corporate finance, you are expected to have no trouble reading journal articles and write your own papers.

252.722

Advanced Theory of Financial Markets

This course will provide doctoral students with a theoretical framework for the analysis of financial markets. It helps students not only understand contemporary research trends but also develop their own research topics in this area.

252.728

Economics of Risk and Insurance

This course provides doctoral students with a theoretical framework for the analysis of financial markets. It helps students not only understand contemporary research trends but also develop their own research topics in this area.
본 강좌는 석사과정 학생들에게 조직 및 인사관리 분야의 주요 연구 및 흐름 연구들을 습득할 수 있도록 한다. 조직 및 인사관리 분야의 주요 이슈와 최신 연구주제를 제시하여 학생들이 연구주제를 선정하고 실증연구를 수행하여 기말논문을 작성, 발표하도록 한다.

이론과 실천의 3-3-0

Methodology of Financial Research

본 과목의 목표는 대학원에서 재무금융을 전공하고자 하는 학생들이 재무실증연구를 수행하는데 필요한 연구방법론에 관한 기초적인 간략성과, 통계적 지식을 습득하는데 있다. 특히 대용량 데이터 분석의 기초적인 통계 및 SAS 및 STATA의 활용 능력을 배양하고, 재무금융분야의 다양한 연구주제를 이해하여 실증적인 연구를 수행할 수 있도록 한다. 이러한 지식을 바탕으로 학생들은 재무실증연구를 체계적으로, 효율적으로 작성할 수 있도록 하는 것이 본 과목의 궁극적 목표이다.

The main objective of this course is to provide students who intend to major in Finance with the basic statistical and econometric knowledge required for conducting research in empirical issues of Finance. Specifically, the course is intended to improve individual, group, and organizational performances.

Studies in Industrial Relations

<전략적 노사관계론>을 중심으로 현대 노사관계의 문제점을 그 전개방향을 학습하고자 한다.

본 강좌는 노사관계론의 성공적인 사례를 보고 사회학적 체계적 이해와 참가시스템의 도입조건에 따른 적합한 제도와 기술적 접근을 제시하고, 학생들이 노사관계론의 전략적 선택과 과제를 심도 있게 다루고자 한다.

이론과 실천의 3-3-0

Organizational Development

본 교과목은 조직과 조직 내 구성원의 특성과 그들의 행동에 영향을 미치는 제반 요소를 이해하도록 하여, 구성원이 조직의 목표를 효과적으로 달성할 수 있게 한다. 구성원의 만족을 증진시키면서 전략적 노사관계를 기업과 사회가 부합시켜야 하는데, 구성원의 만족과 임무성과 조직의 목표가 일치하는 노사관계를 구축하고자 한다.

이론과 실천의 3-3-0

Studies in Human Resource Management

본 과목은 조직과 조직 내 구성원의 특성과 그들의 행동에 영향을 미치는 제반 요소를 이해하도록 하여, 구성원이 조직의 목표를 효과적으로 달성할 수 있게 한다. 구성원의 만족을 증진시키면서 전략적 노사관계를 기업과 사회가 부합시켜야 하는데, 구성원의 만족과 임무성과 조직의 목표가 일치하는 노사관계를 구축하고자 한다.

이론과 실천의 3-3-0

Studies in Organizational Behavior

본 과목은 조직과 조직 내 구성원의 특성과 그들의 행동에 영향을 미치는 제반 요소를 이해하도록 하여, 구성원이 조직의 목표를 효과적으로 달성할 수 있게 한다. 구성원의 만족을 증진시키면서 전략적 노사관계를 기업과 사회가 부합시켜야 하는데, 구성원의 만족과 임무성과 조직의 목표가 일치하는 노사관계를 구축하고자 한다.
through readings of relevant literature.

252,548 Studies in Organization Theory

본 과목은 조직을 분석단위로 하여 기존의 이론들을 학습하는 것을 목표로 한다. 이 시간에 다루어진 이론들은 빠르게 변화하는 사회적, 경제적, 정책적 요소에 대한 이론을 제공한다. 이론들은 편리하고 심화된 기법으로 해석되어 있으며, 이론적 관점에서 논의된다. 수업은 세미나 형식으로 진행할 것이다. 수강자는 개인별로 연구과제를 선정하여 기말에 이를 과제물로 제출해야 한다. 이 과목은 인사조직 전공자는 물론 전략이나 마케팅 전공자 중 조직의 행동을 학습하고자 하는 학생들에게 기초이론을 학습할 수 있는 기회를 제공할 것이다. This course focuses on theories in which analyses are conducted in the organizational level. Specific topics will include Max Weber's theory of bureaucracy, theories of situation and institutionalization, as well as the recent network theory.

252,553A Group Management

집단에 대한 기본적 특성의 이해와 집단의 발달과정에서 나타나는 재생성을 정하되 집단수준에서 발생하는 고유한 문제와 그 해결책을 연구하는 대 초소가 있는 과목이다. 팀의 확산과 더불어 요구되는 팀 활성화와 팀 성과증진의 채택을 추가로 다룬다. This course provides indepth study of the characteristics and problems/solutions specific to a group. It also covers methods to improve team performances.

252,554A Studies in Motivation

경영의 가장 중요한 분야는 효과적인 인사관리라고 전통적으로 말해져 왔음에도 불구하고 인사관리는 여전히 과거의 패러다임과 전통에 따라서 수행되고 있다. 그러나 최근에는 기업의 경쟁우위가 효과적인 인사관리를 통해 창출되고 유지될 수 있다는 연구가 진행되면서 인사관리에 대한 새로운 연구감각이 주목을 받고 있다. 본 과목에서는 이러한 관점에서 인사관리의 기초이론, 최근의 연구동향과 인사관리 실무를 다루고자 한다. This course reviews the theories and the practices of human resource management (HRM) in various types of organizations. It helps students integrate their knowledge of HRM with business strategy, accounting/finance, marketing, and public relations.

252,650 Seminar in Organization Behavior and Human Resources

본 과목은 인사관리를 전공하는 대학원 학생들의 석사전공논문 작성과정에 도움을 주기 위하여 마련된 과목이다. 학생들의 논문주제가 정해지면, 그 주제와 관련된 기존 이론과 연구동향을 검토하고 연구방법론을 공부할 것이다. 이를 바탕으로 하여 학생 각각의 연구모형과 가설설정, 자료수집방법의 타당성에 대하여 검토하고 토론할 것이다. This course helps students prepare their theses on person nel and organization management. It deals with existing theories, research trends and methodologies related to thesis topics. The course provides discussions about each student’s research models and hypotheses.

252,651 Strategic Human Resource Management

본 과목에서는 인사관리와 경영전략의 관계에 관한 이론, 최근의 연구현황과 실험을 다룬다. 특히 전략적 인사관리의 이론과 연구결과를 중심적으로 다룬다. 학기말에 학생들은 기존의 연구문헌에서 다루어지지 않은 새로운 연구문헌에 논문 제안서(proposal)를 작성하여 기말과제로 제출해야 하며 이 제안서는 정기학술지에 게재될 만한 수준이 되어야 한다. This course studies the relations between human resource management (HRM) and business strategies, focusing on the theories of strategic HRM. Students are required to submit thesis proposals by the end of the semester.

252,652 Organization and Strategy

경영의 성장과 발전을 위해서는 기업이 산업환경과 그 기업의 역량에 적합한 전략을 수립하고 이를 실행해야 한다. 기업의 전략을 실행하는 과정에서 가장 중요한 것은 그 전략에 적합한 조직의 구조와 방정, 인센티브와 통제구조를 설계하는 것이다. 이러한 인식에 기반하여 본 과목에서는 기업이 채택하는 전략에 적합한 조직의 구조와 방정을 어떻게 설계할 것인가에 대해 논의한다. 이를 위해 경영전략의 수립과 실행에 관한 기초지식과 고급문헌을 토론한다. 수업은 세미나형식으로 진행할 것이다. 수강자는 개인별로 연구과제를 선정하여 수행하고, 그 결과를 과제물로 제출해야 한다. 이 과목은 기업의 전략수립과 실행의 과정과 방안에 관심을 갖는 학생들에게 기초이론을 학습할 수 있는 기회를 제공할 것이다. This course discusses the design of organizational structure and processes appropriate for business strategies. It also deals with basic concepts and relevant literature about establishing and conducting business strategies. Students are required to choose research topics and submit reports.

252,731 Seminar in Motivation

활동기여는 조직의 성과를 결정하는 가장 중요한 요소 중 하나이다. 본 강좌는 동기부여의 개념, 이론, 실례를 연구한다. 동기부여에 의한 성과를 측정하고 이를 활용할 수 있는 연구가 진행되어있으나, 본 과목에서는 이러한 연구의 이론적, 경제학적 접근법에 대해 심도 있게 다룬다. 본 강좌는 동기부여와의 관련주제와 다른 조직행위 개념들 간의 관련성을 이해하기 위해 다룬다. This course focuses on the concepts, theories, and practices of motivation. It covers the relations between motivation and other concepts of organizational behavior.

252,735 Seminar in Compensation

본 세션이는 임금관리연구에 기여하는 조직행위론적, 경영전략적, 경제학적 접근법에 대한 수업이 다룬 후, 임금관리의 개념, 인사정책, 조직의 임금제도, 임금의riegional, organization, and human resources. It helps students prepare their theses on person.
최근의 연구성과를 공부한다. 아울러 임금의 공정성관리, 안정성관리, 효율성관리에 대해 연구한다. 이를 통해 이 분야에 독창적인 기여를 할 수 있는 연구능력을 함양하며 다음과 같은 경제 증점을 둔다. (1) 임금관리 분야의 연구문헌에 대한 철저한 이해를 갖는다. (2) 임금관리의 기존 연구에 대한 비판적으로 평가하고 이를 바탕으로 이 분야에 학술적 기여를 할 수 있는 능력을 배양한다. (3) 본 세미나의 수강생은 임금관리에 관한 연구논문(도입부, 이론, 가설, 방법론까지)을 작성해야 하며 이 논문은 공인된 학술지에 게재될 만한 수준이어야 한다.

This course provides theories and practices of compensation management. Specific topics will include the relations among compensation, business strategy, and HR strategy.

252.739 리더십세미나 3-3-0
Seminar in Leadership

리더십은 시공을 초월하여 조직에서 매우 중요한 개념이다. 본 과정은 리더십에 관한 이론을 체계적으로 습득케 하고, 나아가 리더십 증진의 실제적 방법을 심층적으로 논의함으로써 리더십을 연구하는 학자로서의 기초지식과 조직관리의 장으로서 기본역량을 함양케 한다.

This course systematically reviews various leadership theories. It provides relevant seminars in which students will discuss practical methods for leadership enhancement.

252.740 인사·조직연구방법론 3-3-0
Methodology in Personnel and Organization

연구수행을 위한 기초능력을 제공하는 과목이다. 연구, 조사가 무엇이고, 그 방법은 어떻게 해야 하며, 논문의 제목, 단계 및 항목은 어떻게 해야 하는가, 학술자료는 어디에서 어떻게 찾는가 등의 기초를 먼저 숙지하게 한다. 그 후 연구설계, 신뢰도/타당도, 표본추출, 자료 수집, 측정, 기초 및 고급통계방법의 활용 등을 알게 함으로써 기존 연구를 쉽게 이해케 하고, 비판능력을 기르며, 나아가 연구하고자 하는 의욕을 키우는 데 목적이 있다.

This course provides basic research skills. It familiarizes students with research design, data collection, measurement, statistical analysis, and interpretation. The course also focuses on the importance and the procedures of publishing academic research papers.

252.742 조직문화론 3-3-0
Organizational Culture

조직문화의 의미, 유형, 측정, 변화 관리를 다룬다. 조직문화의 변화관리의 제요인에 대해 그 측정 및 관리방법을 다루는데, 이론적 연구와 실무적 방안을 심층적으로 다루면서 학생들이 조직문화를 바탕으로 정책결정 및 의사결정을 할 수 있도록 하는 목적이 있다.

This course deals with the concepts, measurement, and change management of organizational culture.

252.743 인사관리세미나 3-3-0
Seminar in Human Resource Management

본 세미나에서는 인사관리 직능이 경영성과에 미치는 영향에 대한 최근의 연구문헌을 중심적으로 다루며 아울러 인사관리 직능 간의 적합성과 인사전략과 경영전략의 적합성에 관한 연구문헌도 같이 다루고자 한다. 학생들은 매주 강의시간에 소개된 논문을 읽고 토론에 참여하며 각주로 논문을 요약하며, 논문에 대한 cr-
252.747 조직이론 seminar 3-3-0
Seminar in Organizational Theory
본 과목은 조직을 분석단위로 하는 고급이론을 학습하고 새로운 이론을 개발하는 것을 목표로 한다. 이 시간에 다룰 이론들은 비베리의 관료제론부터 상황이론, 조직이론 등은 물론 최근에 제시된 네트워크 이론까지 포함한다. 특정, 이 수업에서는 각 수강생 이상의 주요 조직이론 중 하나의 관심영역을 정하고, 그 이론과 관련한 기존의 연구를 심도 있게 학습하고 이에 기반하여 연구계획서를 작성해야 한다. 수업은 세미나 형식으로 진행할 것이다. 수강자는 개인별로 연구과제를 선정하여 기말에 이를 과제물로 제출해야 한다. 과제물에서는 자신의 연구주제와 관련이 있는 기존의 연구결과를 정리하면서 자신의 연구가설을 제시하고, 실증연구모형과 분석방법을 제시해야 한다. 본 과목은 조직 이론을 활용하여 논문을 쓰고자 하는 학생들에게 많은 도움을 줄 것이다.

This course provides seminars about sociological approaches to analyzing relations of organizations and environment. It focuses on theoretical formulations, research designs, and results of empirical studies. This course acquaints students with theory building through the development of existing arguments and problem-solving measures.

전략/국제경영전공
(Strategy and International Business Management Major)
252.563 다국적기업경영론 3-3-0
Multinational Business Management
본 과목은 다국적 기업에 있어서의 경영우위의 창출과 관련하여 다국적 기업의 경영활동에 대하여 집중적으로 다룬다. 국제기업환경에 대한 기본적인 배경지식의 함양과, 다국적기업의 경영활동을 이해하기 위해 새로이 부각되는 복잡한 경영환경 속에서 효과적인 글로벌전략의 수립과 이를 수행하려는 다양한 대응형태들을 분석함으로써 한국기업의 국제 경영전략에 이르는 중요성을 만들어보는 것이다.

This course addresses the creation of competitive advantages by multinational firms. It focuses on effective responses to strategic and organizational challenges which multinational corporations are facing.

252.662A 국제재무관리연구 3-3-0
Studies in International Financial Management
국제거래에 수반되는 재무적 결정들을 연구하는 과목으로 외환시장, 국제금융시장에 대한 기본적인 소개와 환율정책, 이자율정책의 측정 및 관리를 연구하는 것을 목적으로 한다.

This course studies financial decisions about international transactions. It introduces foreign exchange market and international financial market. The course also examines issues on currency risks as well as measurement and management of interest rate risks.

252.566 국제조세론 3-3-0
International Taxation
물리적인 국경이라는 개념이 점차 사라지는 현실에서 국경을 초월하여 다양한 경영활동을 전개하는 다국적기업은 각국마다 상이한 세제제도를 인해 여러 가지 문제에 직면하게 된다. 특히 본 과목은 다국적기업이 겪는 대세 계약의 혼란과 정책의 변화에 대응하기 위한 복잡한 환경에서 효과적인 글로벌전략의 수립에 이르기 위한 전략을 모색해 보는 것이다.

This course addresses the creation of competitive advantages by multinational firms. It focuses on effective responses to strategic and organizational challenges which multinational corporations are facing.

252.570 국제경영이론연구 3-3-0
Studies in International Business Theory
본 과목은 여러 국가와 경제 간의 영업활동을 영위하는 다국적기업의 전략 수립 및 실행을 하는 데 있어서 맞이하는 제한과복잡함을 탐구하는 과목이다. 이론적 분석은 중심으로 하여 이론의 현실적 적용을 위해 사례분석을 병용한다.

This course studies overall management issues in establishing and conducting strategies of multinational businesses. It provides theoretical analysis as well as relevant case studies.
The prerequisite for this course is International Corporate Strategy, CEO Succession, and Corporate Transformation. These on the institutional theory.

Through the course, study for the management fashion based governance structure, succession, corporate transformation. The concrete files we will discuss is about; the view will be analyzed based on the core function and the theory and the techniques we pursue without criticism. This requirement measures regarding international business competitiveness.

Saxon management theories and practices which have been adopted into Korean firms with without critical assessments. This required to submit final term papers.

For the understanding of the core of company and the stockholders.

The objective of this course is to review the management fashion and practice.

The purpose of this course is to reinvestigate the Anglo-American management and practices which have been adopted into Korean firms without critical assessments. This requirement measures regarding international business competitiveness.

The objective of this course is to review the management fashion and practice.

This course will provide fundamental concepts and frameworks for the students who plan to conduct research in strategic management. In addition, this course will also provide the necessary tools that enable students to apply the concepts and frameworks to formulate and implement strategy as general managers. Various business cases as well as papers, articles, and book chapters will be used for these purposes. Topics will typically include the analysis of industry and competitive strategies, top management teams, strategic innovation, and corporate transformation.

This seminar explores computational research methods. One objective of this seminar is to exposure students to selected computational tools that are not only popular in the strategy field but also in other disciplines. Students will come to grips with computational research methods. The ultimate purpose of this seminar is to upgrade the level of research quality in the strategy field. There has been a paucity of courses for computational research methods at business schools. Researchers who saw new opportunities with the advent of computational research
have learned tools on ad hoc basis, resulting in the accumulation of poor quality work. I hope that this course offers systematic ways to carry out computational research, widening the horizon of thinking in strategy research.

252.770A 해외직접투자연구  3-3-0
Studies in Foreign Direct Investment

본 과목은 해외직접투자의 다양한 접근방식에 대해 연구한다. 또한 국제기업활동의 가치와 관련된 실질결정요인, 국내 제휴 등의 관련된 이슈도 다루게 된다. 해외직접투자에 대한 다양한 논의를 살펴보면서, 이론적 이해의 틀을 마련하고, 이를 바탕으로 학생 각자의 연구주제와 아이디어를 개발하는 데 도움을 주는 것을 목적으로 한다. 학생들은 담당교수의 지도하에 자신의 연구주제를 개별적으로 선정하여 진행한다.

The course examines various approaches to foreign direct investment (FDI). It also considers issues regarding location decisions, and international alliances—issues related to designing and coordinating the global value chain for maximum advantage. By investigating the diversity of theoretical arguments, this course is designed to help students develop their own research topics and ideas. And the topics can be individually selected by the student with the advice and consent of any instructor.

252.771A 고급전략경영이론세미나  3-3-0
Advanced Seminar in Theories of Strategic Management

이 과목은 전략경영 분야의 주요한 이론에 대해서 고찰을 하고 이러한 이론을 기반으로 작성된 실증 연구들을 비판적으로 검토하는 박사과정 세미나이다. 이 과목에서는 경영전략의 기초과목들을 수정한 학습자들에 대상으로 하여 고급 수준에서 최신 전략경영 이론들 토론함으로써 경영전략 분야의 박사 논문작성에 도움을 주고자 한다.

This course is a Ph.D. seminar that is intended to study major theories of strategic management and major empirical papers based on these theories. Because this course is an advanced seminar in strategic management, students should take introductory or intermediate-level strategy courses as prerequisites. By addressing state-of-the-art theories in strategic management at the advanced level, this course intends to help Ph.D. students in strategy write high-quality doctoral theses.

252.772A 경영전략이론연구  3-3-0
Theories of Strategy in the Global Knowledge based Economy

이 과목은 경영전략 분야의 대표적인 문헌들을 읽고 비판적으로 평가하며, 토론하는 세미나 과목으로서, 주로 21세기 글로벌 지식기반경제에서의 전략 이슈에 대해서 초점을 맞춘다. 본 과목은 경영전략 및 관련 분야에서 학문적 연구를 진행하려고 하는 경영전략 분야의 박사과정 학생 및 학문적인 논문을 제대로 작성하고자 하는 석사과정 학생들을 주 대상으로 하여 고급 수준에서 최신 경영전략 이론들을 토론함으로써 경영전략 분야의 박사 논문작성에 도움을 주고자 한다.

This course focuses on strategy selection, strategy implementation, and entry completion of domestic companies advancing into area markets.

252.774A 지역연구와 국제경영세미나  3-3-0
Seminan in Area Studies and International Business Seminar

본 과목을 통해 수강생들에게 전략분야에서 끝나는 데다 다른 분야에서도 널리 활용되는 다양한 지역연구 방법론을 소개하고, 수강생들이 직접 실습을 통해 사용방법을 습득할 수 있도록 설계하였다. 본 과목은 경영전략 분야에서 여러 연구의 결과를 높이는 것이며, 이러한 관점에서 경영전략은 해외직접투자에 대한 고려가 거의 없었다. 본 과목을 통해 수강생들이 다양한 연구방법론을 수학하는 체계적인 틀을 마련하여 전략파야 연구에 있어서 사고의 폭을 넓히는 데 기여할 수 있을 것으로 기대한다.

This course explores computational research methods. One objective of this seminar is to expose students to selected computational tools that are not only popular in the strategy field but also in other disciplines. Students will come to grips with this computational approach through hands-on exercises. The ultimate purpose of this seminar is to upgrade the level of research quality in the strategy field. There has been a paucity of courses for computational research methods at business schools. Researchers who saw new opportunities with the advent of computational research have learned tools on ad hoc basis, resulting in the accumulation of poor quality work. I hope that this course offers systematic ways to carry out computational research, widening the horizon of thinking in strategy research.

M0000.007300 경영전략이론연구 II  3-3-0
Social and Psychological process in Strategic Management

본 과목은 전략의 논리적 이론과 전략적 의사 결정 과정을 수학하는 사회학, 혹은 심리학 프로세스에 대한 기존 이론과 연구를 개관하는 것을 목표로 한다. 사회학, 조직학, 사회 심리학 등 각 분야에서 전략의 의사결정의 배경과 기여성과에 이르는 영향에

This course is intended to constitute a broad overview and critical review of seminal literature in the field of strategy, particularly in the context of the global knowledge-based economy. The course is intended primarily for Ph.D. students who expect to conduct academic research in strategic management or related areas. The scope of the course is comprehensive, intending to provide an overview of the field and a basis for future theoretical and empirical work. The main themes that this course focuses on include the resource (or capability)-based view of the firm, evolutionary economics, and organizational learning & innovation.

This course is intended to provide an overview of the field and a critical review of seminal literature in the field of strategy, particularly in the context of the global knowledge-based economy. The course is intended primarily for Ph.D. students who expect to conduct academic research in strategic management or related areas. The scope of the course is comprehensive, intending to provide an overview of the field and a basis for future theoretical and empirical work. The main themes that this course focuses on include the resource (or capability)-based view of the firm, evolutionary economics, and organizational learning & innovation.
관련된 이론과 연구들을 주로 살펴볼 것이다. 수강생들은 경영전략의 기본적인 이론배경(예, 산업조직론, 거래비용이론, 자원의존이론)에 대한 이해를 미리 갖추기를 권한다.

This seminar surveys theory and research on social and psychological processes in strategic management. The course mainly draws upon theoretical perspectives from sociology, organization theory, and social psychology to supplement more traditional, economic perspectives on the causes and consequences of strategic action. This course presumes an understanding of major economic theories of strategy such as industrial organizational economics, transaction cost economics, and the resource-based view of the firm.

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<th>경영전략 연구방법론 3-3-0</th>
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<td>Research Methods in Strategic Management</td>
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본 세미나는 경영전략 연구에 관심 있는 대학원생들을 대상으로 연구방법론의 이론과 실제를 학습하는 것을 목표로 한다. 세미나에서는 research design, construct measurement, causality establishment 등 연구방법론의 주요 주제를 수강생 자신의 프로젝트 바탕으로 1) archival research, 2) survey research, 3) field research 등의 다양한 방법론을 통해 익히도록 한다. Quasi-experiment, panel construction, content analysis 등의 새로운 주제 역시 다루어질 것이다.

This graduate seminar is intended as an introduction to the methods of the social sciences and to the particular issues raised by strategic management research. The seminar will discuss main topics of research methods including research design, construct measurement, and causality through each student’s own research project utilizing archival, survey, and field research. The class will also discuss important research method topics of quasi-experiment, panel construction and content analysis.

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<td>Emotion and Consumer Judgement Seminar</td>
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본 세미나에서는 감정이 소비자 의사결정에 미치는 영향에 대한 새로운 이론에 대해 논의할 것이다. 먼저 감정에 대한 주요 이론을 정리한 후, 매주 특정한 감정 종류에 집중하여 각 감정이 소비자 행동에 미치는 영향을 알아보는 것이다. 또한, 실험 방법론을 기반으로 감정연구의 최근 제안 방법론 (eye-tracking, functional brain imaging)에 대해 고찰하고자 한다.

This seminar focuses on the theories relevant to understanding how emotions influence consumer judgments and behaviors in a variety of settings. Each week this course will focus on a different type of emotion and discuss how the specific emotion uniquely operates consumer judgment and behavior. This seminar is rooted to contemporary theories and methods of consumer behavior research using behavioral experiments. In addition, recent methodological advances such as eye-tracking and functional brain imaging will be discussed.
공 과 대 학
College of Engineering
The present new course is developed for graduate students to improve writing skills as well as reading articles in English in the field of science and engineering. With representative articles selected in science and engineering, their structure, objective, and theoretical background of articles will be extensively explored in grasping the full understanding of articles. For improving writing skill of articles, each part of theory, experimental methods, results and discussion, and conclusion of selected articles will be critically analyzed. All students attending this course are required to practice writing samples articles as assignment in the field of research which each student belongs to.
Engineering Research Ethics and Writing Skills

This course deals with the ethics of conducting research and how to formulate a research paper and write a research article. The course will teach the theory and perform practical exercises. The topics will include research ethics, establishing a research topic, and writing successful research article.

Entrepreneurship for Researchers 1

The goals of this course are to familiarize the students of science and engineering with the procedures, strategies and skills for founding startups based on technologies. This course first introduces the scientific research methodologies and the management of intellectual property rights. To analyze the business value of startup ideas, this course deals with business models, market analyses, and customer analyses. Topics like team building, design thinking, and business plan writing are taught. The students learn how to plan products and how to analyze target customers. This course deals with data driven management, presentation skills, and negotiation strategies. This course introduces the investment practices in startup ecosystems, and financial strategies for scaling startups. The students visit an accelerator company and discuss the startup-related topics with the entrepreneurs in the field. The students form teams to commercialize their R&D prototypes, during which entrepreneurship will be promoted. Mentors who have expertise in scaling startups deliver the in-depth knowledge to the students.

Entrepreneurship for Researchers 2

This summer course is recommended for students who already took the course of "entrepreneurship for researchers 1" or who almost finished the implementation of R&D prototypes. This course is recommended for those who already took the course of "entrepreneurship for researchers 1" or who almost finished the implementation of R&D prototypes. The students learn how to plan products and how to analyze target customers. This course deals with data driven management, presentation skills, and negotiation strategies. This course introduces the investment practices in startup ecosystems, and financial strategies for scaling startups. The students visit an accelerator company and discuss the startup-related topics with the entrepreneurs in the field. The students form teams to commercialize their R&D prototypes, during which entrepreneurship will be promoted. Mentors who have expertise in scaling startups deliver the in-depth knowledge to the students.
Data mining attracted much interests as an essential tool for big data analysis. Especially, designing and implementing advanced data mining algorithms and analysis platforms play crucial roles in extracting executable knowledges from big data. This course covers advanced data mining techniques, algorithms, and core platforms for big data analysis. This course also covers the techniques to effectively analyze very large data and high-speed data.

Deep Learning

Deep learning models learn multiple levels of representation of information while increasing complexity abstraction. They have been successfully applied to various inference tasks including computer vision, speech recognition, and natural language processing, and shown state-of-the-art performance over other machine learning approaches. This course first discusses some basics of machine learning and optimization techniques for deep learning. Then it covers convolutional neural networks (CNNs) and Recurrent neural networks (RNNs) as fundamental deep learning models. It also presents not only unsupervised generative models including autoencoders and restrict Boltzmann machines, but also deep reinforcement learning techniques for planning. This course is designed for graduate students and advanced undergraduate students.
401.605  Topics in Architectural Planning 1

Investigation of architectural problems emphasizing environmental factors, natural and man-made, as design determinants. Study of elementary building forms, building groups and neighborhoods, housing problems and community planning.

401.606A  Studies in Environmental Modeling & Simulation

The course provides synthesis and analysis technology for environmental control systems and their design/maintenance strategies including thermal, energy, light, air and other substances. This course is composed of 4 substantial subjects: computer aided building environmental design, building thermal & energy analysis, building fluid system analysis, facility management planning.

401.607  Studies in Architectural Design Process

A theoretical study of a field study in architectural design and planning. Critics, analysis and method of theory development on the existing theory of architectural design will be studied. Students, by one individual person will choose a subject for reconsideration of ability development and will make out a programme and debate on a selected building.

401.616  Theory of Architectural Design

Theory of Architectural Design

401.617  Topics in Interior Design

The study provides synthesis and analysis technology for environmental control systems and their design/maintenance strategies including thermal, energy, light, air and other substances. This course is composed of 4 substantial subjects: computer aided building environmental design, building thermal & energy analysis, building fluid system analysis, facility management planning.

401.620  Seminar in Building Code

This course is composed of 4 substantial subjects: computer aided building environmental design, building thermal & energy analysis, building fluid system analysis, facility management planning.

401.621  Advanced Building Environmental Technology

A study of thermal and visual environmental factors with emphasis on design decisions leading to minimum building energy consumption, focusing on discussions dealing with building forms, envelopes, systems and operation.

401.628  Design of Building Structures 1

Design of Building Structures 1

- 280 -
대학원(Graduate School)

401.629 건축구조설계론 2 3-3-0
Design of Building Structures 2

고층구조물의 설계에 주안점을 두어 약산식에 의한 설계 및 시스템 설계, 종합형 및 진저하중의 영향, 가재설계 등에 주안점을 둔다.

In this lecture, the design of reinforced concrete structure by the strength design method and, especially, structure design method by the ACI are lectured.

401.630 건축콘크리트공학론 3-3-0
Architectural Concrete Technology

여러 가지 가정을 통하여 실험적으로 얻어진 결과를 공식화하는 과정을 연구하며, 콘크리트의 creep와 shrinkage에 대해 심도있게 연구한다.

As an advanced course, plastic strength theory, deformation theory of reinforced concrete creep effect of concrete and ultimate strength design is instructed.

401.646 건축공사관리론 3-3-0
Project Planning and Control in Construction

건축공사에서 공사관리의 필요성을 인식시키고, 공사계획, 공정관리, 자재 및 노무관리, 원가관리, 홀들 및 안전관리 등에 관한 이론과 기법을 정의하고 사례연구를 통하여 실무적용방법을 고찰한다.

The course is to get the necessity of construction management in building construction recognized, to give lectures on the theories and methods of construction planning, process control, material and labor management, cost control, quality control and safety control, and to investigate the way of practical application through case studies.

401.648 건축재료공법론 3-3-0
Advanced Concepts and Applications of Building Materials in Construction

건축재료의 선택과 사용에 있어서 그 재료의 성질과 특성을 파악하여 재료설계론의 측면에서 전재적소에 건축재료를 사용할 수 있는 능력을 기르고 건축의 3대 요소인 구조, 기능, 미를 갖춘 건축물을 생산할 수 있는 소양을 기른다.

A study of the creative idea and methods related to building materials in construction which can meet the required performance and quality of buildings, and can contribute to the safety, durability, comfortableness and economy of buildings in view of principles, components, and organization structures.

401.649 건축코스트계획론 3-3-0
Cost Planning of Building Design and Construction

건축물에 대한 building economics과 life cycle cost 개념에 입각하여 quality, schedule 등과 연계, 적절한 cost planning을 통한 building cost control 방법을 연구하는 과목으로, 건축물의 시공·설계·시공·유지관리 등 전 과정에 걸쳐 합리적인 cost 계획방법을 알아보고, 실제 사례연구를 통해 구체적인 학습을 한다.

A study of the balanced cost distribution method for the building elements and the whole building from the planning to the design, focused on the design methods within a proposed budget without influencing the building performance by defining the relationships between the total cost, and the scale and the quality of the space.

401.650 건축설계연구 1 3-0-6
Architectural Design Studio 1

도시의 역사성과 장소성 및 공간조직에 대한 이해를 바탕으로 우리 건축의 현대적 해석과 그 적용 가능성에 대해 연구하는 것을 주제로 한다. 이를 위해 전통 도시주거지에 대한 현지답사와 통해 공간구성의 특성과 맥락을 분석하고, 여기서 추출된 우리건축의 다양한 설계 방법과 건축이화 및 공간과의 현대적 해석을 도시주거, 공공시설, 문화시설 등의 설계에 반영하는 과제를 수행한다.

Design studio course designation for students having completed the semester of studio course in the Master program. Consult the Department Office for specific setting offerings. Stressing experimental studies in the development of significant architectural form focused on building method and space design.

401.651 건축설계연구 2 3-0-6
Architectural Design Studio 2

계획과 설계과정에 있어서 보다 전문적이고 세부적인 지식과 연구를 요구하는 건축물들을 다룬다. 본 과목의 운영은 설계주제의 특수성에 따라 담당교수와 상의하여 개별적으로 선택, 과제를 수행해 나간다.

A design project will be undertaken for a large scale building. The program, site, and bid documents for a recently completed local project will provide the basis for three phase of work; research (2 weeks), design (4 weeks), and development (6 weeks). Each phase will be concerned with technological, programmatic, and compositional considerations.
401.656 건축설비계획특론 3-3-0
Advanced Building Systems Design

① 기계설비계획 : 건축물에서의 난방설비, 공기조화설비, 급배수설비, 열원기기 제어시스템의 고려사항을 주로 건물의 기계설비 설계를 통하여 공부하고, 건물 자동화 시스템의 적용에 따른 타당성을 공부한다.

② 전기설비계획 : 건축물에서의 조명설비, 방전설비, 수변전설비, 그리고 전기설비 계획서의 고려사항을 중심으로 건물의 전기설비 설계를 통하여 공부하고, 오피스, 자동화, 통신, 보안 등 시스템의 적용에 따른 타당성을 공부한다.

③ 복합설비계획 : 건축물에서의 통신설비, 전자설비, 전자통신설비, 그리고 전기설비 계획서의 고려사항을 중심으로 건물의 전기설비 설계를 통하여 공부하고, 통신, 자동화, 보안 등 시스템의 적용에 따른 타당성을 공부한다.

401.660 한국건축사연구방법론 3-3-0
Methodology in History of Korean Architecture

한국건축사 연구에 필수적인 문헌조사법과 현장조사법에 대하여 강의 및 실습을 벌행한다. 문헌조사법으로서 건축관련 현장자료의 조사수집과 감독을 실시하고, 현장조사법으로서는 실측과 도면학, 현장학 및 사례 수집의 수법과 활용에 대하여 실습한다.

In this course, lectures and practices on bibliographical methodology and site survey methodology required in the study of the history of Korean architecture are conducted side by side. As bibliographical methodology, inquiry and collection of documents related to architecture and elaborate reading are performed, and as site survey methodology, survey and measuring, interviews, collections and application of humanistic references are practiced.

401.661 건축기술특론 3-3-0
Advanced Building Construction Technology

건축공사의 신기술, 공법 및 자재의 개발과 초고층 건축시공의 현장사례를 소개하고 건축공사의 과학화와 자동화를 위한 가치공학, 시뮬레이션, 건설전문가시스템, 건설로보틱스, 건설경영정보시스템, 건설통합시스템 등에 대해 강의한다.

The class introduces new technology, way of construction, material development, and on-the-spot cases of high-rise construction, gives lectures on value engineering, simulations, construction expert systems, construction robotics, construction management and information systems, and construction integration systems for scientization and automation of building construction.

401.663 건축생산공학론 3-3-0
Construction Performance and Productivity Improvement

건축공사의 성과측정법과 생산성 향상 방안을 고찰하고, 불확실한 상황에서 요구되는 건설업무결정을 합리적으로 수행할 수 있도록 프로젝트 관리, 리스크 분석 및 관리에 대한 이론과 기법을 강의한다.

In the course the ways to evaluate the results of construction and productivity improvement are considered, and lectures are given on alternative evaluation of projects, theories and methods about risk analysis and management in order to rationally perform the proceedings of construction required in uncertain circumstances.

401.664 건축구조진동론 3-3-0
Structural Dynamics of Building Structures

동적하중에 의한 단자유도계 및 다자유도계 시스템으로 이상화
Advanced Theory of Concrete Plasticity

Concrete is the material that is used most widely in civil engineering. It is used in structures of various types, such as roads, bridges, and buildings. The behavior of concrete under different loading conditions is complex and requires advanced theories and models to accurately predict its performance. This course will introduce the basic concepts and theories of concrete plasticity, including the behavior of concrete under repeated loads and earthquake-resistant design.

Finite Element Implementation

In this course, you will learn about the implementation of the finite element method (FEM) for solving structural problems. You will learn how to model structures using FEM and how to analyze the results. The course will cover both the theoretical foundations and practical applications of FEM.

Stability of Steel Structures

This course will cover the stability of steel structures, including the buckling of structural members and the overall stability of the structure. You will learn about the factors that affect the stability of steel structures and how to design structures that are stable under various loading conditions.

Architectural Space Analysis

This course will cover the analysis of architectural spaces, including the methods used to analyze the spatial relationships between architectural elements. You will learn about the use of computational models to analyze architectural spaces and how to use these models to design spaces that are effective and efficient.

Structural Analysis Theory and Applications

This course will cover the theory and application of structural analysis. You will learn about the methods used to analyze the behavior of structures under different loading conditions, including the use of computer-aided analysis tools.

Behavior and Plastic Design of Steel Structures

This course will cover the behavior and design of steel structures. You will learn about the principles of steel behavior and how to design steel structures that are safe and economical.

Construction Management & Project Engineering

This course will cover the principles and practices of construction management and project engineering. You will learn about the management of construction projects, including planning, scheduling, and control.
Earthquake Engineering for Building Structures

In this course we will study the basic concepts of earthquake engineering for building structures: the characteristics of earthquakes, seismic waves and magnitude, elastic and inelastic responses of structures, concepts of seismic design, seismic load and related codes, analysis of buildings, design of reinforced concrete structures and members, design of steel structures and members, and inelastic analysis and design.

Studies in Building Technology

The study provides building design technology and substantial design method for environmental project, which plays a critical role in strategy formulation. This course is composed of 4 substantial subjects; studies in building environmental system evaluation, studies in environmental project development & financing, studies in building environmental criteria and studies in sustainable building design.
This course introduces current research topics in product engineering. It covers various topics such as (1) the decision making issues in product development, (2) the design of products optimized in terms of function, architecture, and cost, and (3) the development of efficient information systems to support activities involved in the design and development of products. An emphasis will be given to the next-generation products which are environmentally conscious, information-intensive, and mass customizable.

406.548 - 3-3-0
Design and Evaluation of Human-Machine Interface

406.550 - 3-3-0
Advanced Topics in Statistical Learning

406.551 - 3-3-0
Special Topics in Optimization
This course is divided into two parts. First, students will learn manufacturing planning and control techniques. Second, they will learn future directions of ERP/SCM in relation to operations research models and database technologies.

406.556 공업경제분석 3-3-0

Engineering Economic Analysis

This course deals with issues on how one can design, build, and manage an information management system for manufacturing companies of the future. In particular, students will study ERP (Enterprise Resource Planning) and SCM (Supply Chain Management) systems which have emerged as important management issues in manufacturing enterprises.

406.557 사용자중심 제품설계개발론 3-3-0

User-Centered Product Design & Development

This course is divided into two parts. First, students will learn manufacturing planning and control techniques. Second, they will learn future directions of ERP/SCM in relation to operations research models and database technologies.

406.559 산업공학특론 3-3-0

Topics in Industrial Engineering

This course is divided into two parts. First, students will learn manufacturing planning and control techniques. Second, they will learn future directions of ERP/SCM in relation to operations research models and database technologies.

406.561 데이터기반학습 3-3-0

Learning from Data

This course is divided into two parts. First, students will learn manufacturing planning and control techniques. Second, they will learn future directions of ERP/SCM in relation to operations research models and database technologies.

406.562 생산계획 및 통제 3-3-0

Production Planning and Control

This course is divided into two parts. First, students will learn manufacturing planning and control techniques. Second, they will learn future directions of ERP/SCM in relation to operations research models and database technologies.

406.564 인간성능 3-3-0

Human Performance

This course is divided into two parts. First, students will learn manufacturing planning and control techniques. Second, they will learn future directions of ERP/SCM in relation to operations research models and database technologies.

406.565 기업정보시스템공학

Enterprise Information Systems Engineering

This course is divided into two parts. First, students will learn manufacturing planning and control techniques. Second, they will learn future directions of ERP/SCM in relation to operations research models and database technologies.
various industry domains, still there is a big gap between
theory and practice due to the difficulties in dealing with the
incompleteness, heterogeneity, high dimensionality, and mas-
sive volume of data as well as the complexity and scal-
ability of computation. This course will first cover methods
that are essential for successful application of machine learning
to real-world problems, including data pre-processing,
feature extraction, dimensionality reduction, class imbalance,
and model ensembles, and then introduce principles and
methods for learning models and dependencies from data. In
particular, the course will primarily focus on the learning
frameworks that utilize methods from probability, statistics,
and optimization. Main topics covered in this course include
neural networks, support vector machines, hidden Markov
models, and reinforcement learning. Case studies in addition
to programming projects that require training of prediction
classification models for several different types of time
series datasets are also included in the course.

406.563
최적화원론 3-3-0
Convex Optimization

이 과목의 목표는 최적화의 가장 중요한 기초인 볼록 최적화의
성질을 이해하여 이를 응용하는 학생들의 능력을 배양하는데 있
다. 볼록함수는 볼록함수, 블록함수, 블록함수, 그리고 다양한 볼
록 최적화 모형 등이 있다. 특히, 90년대 이후 볼록 최적화 모형
으로 연구되고 있는 원추계획법을 포함한다.

A general goal of this course is to develop the students’
skills and background needed to recognize, formulate, and
solve convex optimization problems, a most fundamental ba-
sis of optimization. Typical topics are convex sets and func-
tions, duality, and various convex optimization models. The
optimization models will include the conic programs, a tract-
able and useful generalization of LP, with their the success-
ful applications and theoretical results triggered in 1990’s by
some seminal works.

406.564
사용자 경험 설계 3-3-0
User Experience Design

이 강의는 공과대학의 대학원 및 학부 고학년 학생들을 대상으
로 사용자 경험 설계의 기본 개념을 전달하고 효율적인 사용자 경험
을 제공하는 제품, 서비스 및 시스템을 설계하기 위한 기법들을
가르쳐 습득시키는 것을 목적으로 한다. 강의의 주요 주제들은 사
용자 경험 프로세스, 맥락 조사, 맥락 분석, 설계 요구조건 추출, 설계 정보 모형, 아이디어 생성, 프로토타이핑, 사용자 경험
평가 등을 포함한다.

This introductory course aims to provide graduate and under-
graduate students in engineering with an understanding of the
user experience (UX) concept and the core skills nec-
essary for designing systems that provide high-quality user ex-
perience. Topics include UX process life cycle, contextual
inquiry, contextual analysis, design requirements extraction,
design-informing models, ideation, prototyping and UX eval-
uation.

406.565
작업생체역학 3-3-0
Occupational Biomechanics

이 강의는 공과대학의 대학원 및 학부 고학년 학생들을 대상으
로 작업생체역학의 기본 개념을 전달하고 작업자의 건강과 작업
생산성을 향상하기 위한 설계 기법들을 가르쳐 습득시키는 것을
목적으로 한다. 강의의 주요 주제들은 근골격계의 구조, 인체측정
학, 생명체측학, 작업생체역학 모형, 자세 스트레스, 인력 운반 작
업을 포함한다.

This course aims to provide graduate and undergraduate
students in engineering with an understanding of the basic
concepts in occupational biomechanics and design methods
for enhancing workers’ occupational health and work
productivity. Topics include the human musculoskeletal sys-
tem, anthropometry, bioinstrumentation, occupational bio-
mechanical models, postural stress and manual materials
handling.
406.653 Theory of Scheduling

Scheduling theory is a decision process on the timing and allocation of resources to activities while satisfying various constraints on diverse objective functions. In this course, students will learn to solve optimization problems on single machine sequencing, flow shop scheduling, group scheduling, job shop scheduling and project scheduling. Students will also learn about the latest in scheduling problems. Heuristic solutions based on genetic algorithms, simulated annealing, tabu search, as well as conventional dispatching heuristic methods will be covered.

406.655 Dynamic Systems

Dynamic Systems

This course studies traditional and recent forecasting techniques and their applications. This course also includes case studies of applying them to the design and analysis of empirical research and interpreting the results.

406.660 Strategic Planning and Control

Strategic Planning and Control

This course focuses on strategic planning and control for the operation of management systems. It covers relevant techniques and application cases.

406.662 Theory of Investment Risk Management

Theory of Investment Risk Management

This course studies the asset price behavior based on the understanding of stochastic process. It also covers basic mathematical modeling for pricing theories of derivatives and simulation techniques.

M1505.001300 Industrial Application of Machine Learning

Industrial Application of Machine Learning

This course focuses on strategic planning and control for the operation of management systems. It covers relevant techniques and application cases.

406.665 Applied Multivariate Statistical Analysis

Applied Multivariate Statistical Analysis

Applied Multivariate Statistical Analysis

The primary objective of the course is to provide students with fundamental understanding and embodied knowledge on multivariate data analysis in the field of industrial engineering and other engineering. To this end, this course introduces multivariate statistical models such as linear regression, factor analysis, clustering, classification, structure equation models, and makes students intelligent users of these techniques by applying them to the design and analysis of empirical research and interpreting the results.
training of deep learning models for classifying, recognizing, inferring from, and generating multimedia data.

406.752 Vehicle Ergonomics

본 과목의 목적은 공과대 대학원 과정 학생들에게 자동차 인간공학 관련 최신 동향을 제공하고, 인간공학의 차량 설계 관련 기술을 제시, 수행하는 능력을 배양토록 하는데 있다. 인간공학, 사용자 수용 개념, 자동차 내부 공간 설계, SAE 표준, 운전 불편도/편의도 평가, 시트, 다이어그램, 디자인, 편안성 투표, 가상 Fitting Trials, 감성공학, Display와 Control의 설계, 승차자 설계, 보편적 설계 및 주제의 주제를 다루게 된다. 수강생들은 다수의 디자인 문제들을 해결하고, 기술적 요구를 충족하는 카운터 프로토타입을 제안, 수행하는 능력을 배양하게 된다.

This course aims to provide students with advanced knowledge on ergonomic design of vehicle systems. The topics include: anthropometry, user accommodation, occupant packaging, SAE standards, driving comfort/discomfort, seat design, digital human models, virtual fitting trials, ingress and egress, display and control design. Students are expected to complete multiple design homework problems and also conduct a group term project. After successful completion of the course, students shall have an ability to independently develop, propose and conduct vehicle ergonomics research studies.

406.667 Integer Optimization

정수계획법은 변수의 값이 정수로 제한되는 문제로, 현실에서 가장 많이 응용되는 최적화모형이다. 이 수업에서는 최적화의 이론과 기법을, 특히 고차원 NP-hard 정수계획문제를 해결하는 다양한 방법을 살펴본다. 분류한 계열, 단순화, 바꾸고, 증강, 이성형식, 그리고 선형화 기법을 포함한다. 특히 학생들은 자신들의 문제를 모형화하고 해법을 개발, 구현하는 프로세스를 수행하게 된다.

Integer programs are a most useful model in practice. This course tries, with minimal background in LP or mathematical maturity, to cover various solution methods such as branch-and-bound, cutting plane method, Lagrangian duality, column generation method and heuristic methods. Also students are encouraged to model their own problems and develop algorithms implemented by commercial codes.

406.711 Dissertation Research

본 과목의 목적은 공과대 대학원 과정 학생들에게 자동차 인간공학 관련 최신 동향을 제공하고, 인간공학의 차량 설계 관련 기술을 제시, 수행하는 능력을 배양토록 하는데 있다. 인간공학, 사용자 수용 개념, 자동차 내부 공간 설계, SAE 표준, 운전 불편도/편의도 평가, 시트, 다이어그램, 디자인, 편안성 투표, 가상 Fitting Trials, 감성공학, Display와 Control의 설계, 승차자 설계, 보편적 설계 및 주제의 주제를 다루게 된다. 수강생들은 다수의 디자인 문제들을 해결하고, 기술적 요구를 충족하는 카운터 프로토타입을 제안, 수행하는 능력을 배양하게 된다.

This course aims to provide students with advanced knowledge on ergonomic design of vehicle systems. The topics include: anthropometry, user accommodation, occupant packaging, SAE standards, driving comfort/discomfort, seat design, digital human models, virtual fitting trials, ingress and egress, display and control design. Students are expected to complete multiple design homework problems and also conduct a group term project. After successful completion of the course, students shall have an ability to independently develop, propose and conduct vehicle ergonomics research studies.

M1505.000100 재고관리 3-3-0

Inventory Management

재고관리는 Harris(1913)의 경제적 생산량 모형이 후 100년 동안 산업공학에서 연구되어온 주요한 학문 분야이며 최근 모든 산업 관리학에서 활발히 적용되고 있는 공급망관리의 이론적 근간이 되고 있다. 본 과목에서는 재고관리의 다양한 적용 및 확장 모형들에 대해 공부한다. 또한 재고관리에 대한 주요 논문들을 분석하여 관련 분야 석박사 학생들의 논문 작성 능력을 향상시키는 훈련을 시키고자 한다.

Inventory management has been studied over 100 years in industrial engineering since Harris(1913) developed an economic production quantity model. It becomes the theoretical basis for the supply chain management which has been actively applied to most industries. This course intends to give an overview of the various inventory models including both deterministic and stochastic models. In addition, 15-20 key papers on inventory management will be studied to enhance the research ability for graduate students.
This course aims to help IE graduate student researchers 1) understand the current research trends in design, ergonomics and human factors engineering and 2) strengthen their research abilities. Much emphasis will be placed upon reading and criticizing up-to-date research articles and creating new research ideas. Also, students will gain experience in conducting a research study and generating a scholarly article.

**Industrial Application of System Modeling**

This course introduces Discrete Event Simulation, System Dynamics, and Agent Based Model with a focus on applying these concepts to real world problems. Students will learn basic concepts and system modeling methods for discrete event simulation, system dynamics, and agent based model, which are widely used in industrial engineering discipline, and study the related software tools. Students will also learn how to define an overall model concept, decompose conceptual model into appropriate sub-models, create detailed model, integrate the total system model and to verify the final model. The student will implement learned material through semester-long projects such as manufacturing system, supply chain, or healthcare system modeling.

**Competitive Systems Analysis**

The goal of this course is to study the fundamental concepts and analytic methodologies which are necessary for the systematic formulation and analysis of the decision making problems in a competitive systems in which the elements of system and environment are subject to mutual interactions. Topics such as strategic form and extensive form of game model, pure strategy and mixed strategy, Nash equilibrium, Bayesian game with incomplete information, and evolutionary game theory will be discussed with the emphasis on applications.
and theoretical estimation of hydrodynamic derivatives.

414.556  선박설계자동화특강 3-3-0
Topics in Ship Design Automation

Computers to control various stages of design and analysis. Project/simulation model, simulation models, fluid mechanics, computer techniques, and programming techniques are covered. The use of computer-aided design (CAD) and computer-aided manufacturing (CAM) is emphasized. Concept and method of Computer Aided Geometric Design are introduced. Basic concepts and methodologies of ship hull form modeling, compartment arrangement modeling, and structure modeling are discussed in detail. Implementation of the related 3D modeling is carried out as a term project.

414.557  선박유체역학특강 3-3-0
Topics in Ship Hydrodynamics

Challenging problems in ship hydrodynamics are treated, particularly in areas where wave phenomena are predominant. This course provides an introduction to the fundamentals of hydrodynamics and navigable flow. The topics include: hydrodynamics, including hull resistance, motion response, and motions in irregular waves. The course provides a comprehensive overview of the subject, with a focus on practical applications.

414.559  수치선박유체역학 3-3-0
Computational Marine Hydrodynamics

The course introduces the fundamental concepts of computational marine hydrodynamics, with a focus on numerical methods and computer-aided design (CAD) tools. Topics include: computational fluid dynamics (CFD), numerical methods, and computer-aided design (CAD) tools. The course is designed to provide a comprehensive overview of the subject, with a focus on practical applications.

414.558  선박운항학특강 3-3-0
Topics in Ship Operation Engineering

The course provides an introduction to the principles of ship operation engineering, with a focus on practical applications. Topics include: ship operation engineering, including ship operation, ship operation planning, and ship operation economics. The course is designed to provide a comprehensive overview of the subject, with a focus on practical applications.

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as one of the numerical methods for the partial differential equations. As a mathematical preliminaries, the following subjects will be discussed: Function spaces(linear space, metric space, Normed space, Banach space, Hilbert space, Sobolev space, etc). Norms in each space. Differential operators, Adjoint operators. Projection method, Fixed point theorem. Integration by parts. One dimensional 2nd order ordinary differential equation. Eigenvalue problem, Variational method.

Upper & lower bounding principles. Upwinding scheme in FEM. Adaptive FEM, Two–dimensional applications in water waves. & internal waves.

The boundary integral surface panel methods based on Green theorem are introduced to solve potential flow problems. Extension of vorticity–based methods to viscous flow analysis is also given, with focusing on coupling among vorticity, pressure and velocity variables.

### 414.560 전체구조특강 3-3-0

**Topics in Ship Structures**

조선공학에서 필요한 선체구조에 대한 식비성공학, 보 및 과의 좌굴을 다루는 구조성공학론, 선박의 진동도, 바람형 문제 등 유한요소법의 고급 이론을 다루는 선천역학과, 선박정체학 등의 다양한 주제들에 대해 개설 학과마다 중요한 주제들이 선정되며 심도 있는 강의가 제공된다.

This course offers important topics in naval architectures. It covers ship structural reliability, structural stability analysis for beam and plate buckling problems, vibration analysis of ship structures, computational mechanics using advanced finite element theories, and ship economics. In each course offered, one of the important topics in naval architecture will be selected and discussed in detail.

### 414.561 선체구조설계특강 3-3-0

**Topics in Ship Structural Design**

선체구조의 안전성을 평가하는 데 필요한 재반 설계조건이 무엇인가. 그러한 설계조건을 충족하기 위해 사용되는 설계구조 해석 내용이 체계 구조 설계 이론을 바탕으로 설계사고의 관리가 되는 관리자에게 대한 개설학과의 과목 모드의 특성에 설계조건이 어떠한 관계가 있는지를 구체적으로 살펴봄으로써, 최적의 안전한 설계조건 설계는 설계하는 전반적인 과정을 이해하도록 한다.

This course offers important topics in ship structural design and analysis process for structural safety. It covers ship structural design principle based on the various structural performance analysis as well as the consideration of various failure modes of ship structural components. Thus it provides an integrated ship structural design concepts for effective and safe ship structures.

### 414.562 해양공학설계특강 3-3-0

**Topics in Ocean Engineering Design**

이 과목에서는 해양공학분야에서 새로운 대두되는 중요한 기술과 문제 중 한 가지를 택하여 해양 기술의 역학적 배경, 기술개발과 정, 현재의 상황, 세계수준에 대한 우리나라의 기술수준, 해양해양학 및 해양기술 내용 등을 관리자들이 전문가의 초청강연을 통해 분석하고 단순화된 모델을 구축하여 이론적 및 수치적 또는 실험적으로 해석하여 해결책을 모색한다.

In this course, an specific topic from the field of ocean engineering is selected and a systematic analysis is made from the viewpoints of historical background, chronological development of core technology, our technological level and, most of all, core technical problems based on references and talks of invited speakers. In order to find the technical solution of the problem, the problem is described as a simple model and its solution is sought theoretically, numerically or experimentally.

### 414.563 고급형상모델링 3-3-0

**Advanced Shape Modeling**

본 과목의 목표는 3차원 형상의 모델을 정의하기 위한 기하학적 및 위상적 기법을 학습하고, 컴퓨터그래픽을 통하여 3차원 형상모델을 구현하는 데 있다. 학습내용은 CSG, B-rep, 특정 형상기반 모델링, 형상전산, 비다양체 자료구조, 옵트리, 볼륨, 블록구조화, 음함수 곡면의 정, 음함수곡면의 근사 및 보간, 음함수곡면의 가시화, 유한 볼륨소리 생성 등을 포함한다. 관련된 예제로는 그래픽스모델링, 컴퓨터그래픽, 자료구조, 산형데모 등이다.

Topics in 3D Shape Modeling is the study of mathematical theory of three dimensional shape modeling and implementation by computer programming. Topics include Constructive Solid Geometry, Boundary–Representation, feature–based modeling, topology operation, non–manifold data structure, octree, voxel, volume visualization, definition of implicit surface, approximation and interpolation of implicit surface, implicit surface visualization, finite volume element generation, etc. Graphics modeling, computer programming, data structure, and linear algebra are the related basic courses.

### 414.564 선박유도제어론 3-3-0

**Ship Guidance and Control**

선박, 수중운동체의 유도체계 시스템 설계를 위한 제어이론을 학습한다. 선호시스템에 대한 소개와 고급제어, 가속측정, 고유치 작정학법을 이용한 제어기 설계과정을 학습한다. 최적제어설계기법, 모델추적제어기법 등 다양한 제어기법을 소개하고 선박 또는 수중운동체 시스템 설계에 적용한다.

This course introduces control theory for designing a guidance control system of ships or underwater vehicles. Students will study controller design methods utilizing controllability, observability, and assignment of eigenvalues. Optimal control and model predictive control will be applied to ships and underwater vehicles.

### 414.650 선박난류유도력적분 3-3-0

**Computational Fluid Dynamics for Turbulent Ship Flows**

자연계의 실제 유동 중 대부분을 차지하는 난류유동을 컴퓨터를 이용하여 해석하는 전산유체역학의 원리를 이해하고, 그에 필요한 수학적 모형 정립 및 수치적 해법 등을 습득한다. 또한 설계에 기여하는 적용문제들을 문제의 정의부터 시작하여 해석 및 결과보고서 작성까지 실습으로 현장 적용력을 배양한다.

Understand the principles of computational fluid dynamics (CFD) for the analysis of turbulent flow, which covers most of the real-world flow in nature. Learn the mathematical modeling and numerical methods for CFD. Apply the knowledge to realistic problems in naval architecture, starting the problem setup to results analysis and report writing.
414.652  조선유동해석 3-3-0

Analysis of Viscous Fluid Flows

The course deals with recent research topics in ship hydrodynamics and investigation of the theoretical background related to some special areas. A promise candidate of the course subtitle would be ‘perturbation method in fluid mechanics’. There is a growing trend to develop direct numerical methods to solve more realistic engineering problems. This direct numerical method, no matter how accurate numerical solutions to the complicated problem can be obtained, does not give any dependency on the important design parameters. On the other hand, the slender body theory based on the well-established perturbation method often provides a semi-analytic dependency on the design parameters. This additional information can be an extremely important information in a design problem. In this course, the slender body theory will be discussed in depth. The method of matched asymptotic expansions will be also discussed, i.e., boundary perturbation, regular perturbation, and singular perturbations. Specifically, the slender-body approximation used for an airship, the thin ship theory, the flat ship theory, and the slender ship theory employed in the field of ship hydrodynamics will be studied. In the method of perturbation expansions, the appropriate choice of the perturbation parameters, the representation of the governing equation and the boundary conditions in the powers of the perturbation parameters, appropriate matching conditions, the inner and outer expansions will be treated. The application of the slender body theory to a slender ship or submarine will be given. As another topic, this course may cover the flow characteristics involved in the lifting surfaces such as hydrofoils, airplanes, rudders, and propellers. Based on understanding of their physical phenomena and mathematical background, theoretical models are explained.

414.653 고급전산역학론 3-3-0

Advanced Theories of Computational Mechanics

This course studies acoustics in fluid media regarding the radiation noise control problems. Specific topics will include radiation noise source, monopole/dipole/quadrupole, sound fields in spherical and cylindrical coordinates. The concept of PLM (Product Lifecycle Management) is introduced and its application to shipbuilding is taught. Simulation methodologies are described, followed by modeling and validation of the product, process, and resource of shipbuilding. Real and specific cases in simulation models are discussed in detail. Each student is required to carry out independent term project for the simulation of specific manu
Facturing process.

Advanced Topics in Naval Architecture

조선 공학과 관련된 최근의 연구동향을 조사하고 주요 핵심 사항을 학습한다.

This course probes into research trends in the field of naval architecture and other key issues.

Advanced Topics in Ocean Engineering

이 과목에서는 해양공학분야에 새로운 제기되는 중요 기술 문제 중 하나를 제외하도 연구 및 역학적 전개시, 해양공학 분야의 유효 및 핵심 내용 에 대한 연구논문들을 세야하며 형식으로 분석하고 토의한다.

This course deals with advanced topics on ocean engineering. It covers core technological content, literature, and seminars.

Ship Noise and Vibration Measurements and Analysis

소음진동 데이터의 측정과 분석기법을 이해하기 위하여, 주로 연구데이터 분류, 캐로데미 하부, 스펙트럼 밀도함수, 통계적 요차, 시스템 응답타당, 디지털 데이터 획득기법, FFT 구현 및 소음 진동문제의 음향예들을 다룬다.

This course addresses noise and vibration data measurement and analysis techniques. It covers random data classification, correlation function and spectral density function. The course also studies statistical errors, system response function, and digital data acquisition.

Ship Structural Vibroacoustics

음향과 구조물진동의 상호작용을 이해하기 위하여, 주로 유체매질과 고체 구조물 내에서의 음향, 진동구조물의 음향방정식, 유체 내에서의 구조물의 진동, 구조정적 음향량과, 음향에 기인한 구조물 진동현상들을 다룬다.

This course examines sound and structure interaction phenomena. It covers waves in fluids and solid structures, sound radiation by vibrating structures, and fluid loading of vibrating structures. The course also deals with transmission of sound through partitions and acoustically induced vibration of structures.

Design Sensitivity Analysis

설계민감도는 시스템 응답의 설계변수에 대한 구배로 정의되며 이는 최적설계에서 필수적이며 설계변수에 따른 시스템의 응답을 제한 없이 예측가능하게 한다. 또한 각 가지 응답에 대해서 설계변수 간의 영향을 일정히 얻고자 할 때 유용하게 사용된다. 기존의 상업 코드(ANSYS, MSC/NASTRAN 등)와 연계하여 사용될 수도 있으며 빠르고 정확한 결과를 얻을 수 있으므로 산업체나 대학원에서 최적설계를 수행할 때 매우 유용하다.

This course focuses on design sensitivity, which is the gradient of responses with respect to design variation.

Fundamentals of Underwater Acoustics

해양환경의 측정과 관찰, 수중통신 등에 사용되는 수중에서의 음과의 물리적 상호작용을 알고 보고, 그의 응용으로서 소나를 설계하는 데 필요한 설계 인지에는 이러한 것들이 있는지 공부한다. 과목내용은 파동방정식, 물리량(음준위, 음속, 방향성, 효율 등), 경계면 반사, 회절, 해양에서의 음진동 현상, 음과의 응용을 포함하고 있다.

This course addresses the physical characteristics of underwater wave used for environmental monitoring of the ocean. It covers wave equation, along with physical measures such as sound levels, reflection from boundaries, and refraction.

Theory of Sound Wave Propagation in the Ocean

해양에서의 음진동 특성은 수중(acoustic medium)과 해저면(elastic/porous medium)을 통한 파형전달 현상이다. 따라서 수중음 음을 이용한 해양에서의 정보 추출 등을 위하여 음파 및 탄성파의 음전달에 대한 연구가 필요하다. 따라서 1,2,3차원적인 파 전달 현상을 음파계열과 탄성계열에 대하여 물리적으로 그리고 수학적으로 규명한다.

This course focuses on the theory of sound wave propagation in the ocean. It deals with 1/2/3 dimensional wave propagation phenomena in acoustic and elastic media through wave physics and analytic mathematics.

Continuum Mechanics and Elasticity

학부과정에서 교육된 정역학 또는 재료역학을 기초로 텐서 연산, 변형, 음향, 변형응력, 구조방정식, 탄성론 등 탄성론에 기초한 연속체 역학에 대한 일반적인 지식을 습득한다. 이는 구조분야 뿐만 아니라 유체 분야 등 탄 분야의 역학에서도 활용될 수 있으며 고급 메시지 이론을 통한 비선형 유한요소법, 설계민감도 해석법의 기초로서 매우 유용하다.

General theories for the continuum mechanics such as tensor calculus, deformation, stress, strain, constitutive laws, and elasticity are introduced. It is helpful in the research fields of structural systems as well as others. It also provides a good foundation for the nonlinear finite element methods using advanced energy principles and design sensitivity analysis in graduate level studies.

Dissertation Research

특성연구 분야를 중심으로 문헌을 조사하고 연구 과제를 형성한다.

This course provides bibliographical surveys and research projects on special topics in naval architecture.
include stationary and ergodic processes, spectral analysis, and the properties of common random processes.

430.525A Data Network

This course is designed for students interested in the design and implementation of computer networks. The course covers the fundamentals of network design and the principles of network operation. Students will learn about network protocols, network topology, and network management. The course also covers the design and implementation of network security systems.

430.531 Introduction to Solid State Electronics

This course is designed for students interested in the fundamentals of solid-state electronics. The course covers the properties of solid-state materials, including metals, semiconductors, and insulators. Students will learn about the electrical and optical properties of these materials, as well as the principles of device design and fabrication.

430.534A Advanced Digital Integrated Circuits

This course is designed for students interested in the design and implementation of digital integrated circuits. The course covers the principles of digital circuit design, including logic design, circuit optimization, and layout. Students will learn about the design and implementation of digital circuits using state-of-the-art tools and techniques.
430.535B Analog Integrated Circuits

This course deals with the analysis and design of analog CMOS integrated circuits, emphasizing fundamentals as well as new paradigms that students and practicing engineers need to master in today’s industry.

430.604A Power System Application of Optimization Methods

This course introduces computer-aided design of VLSI circuits. Topics include graph theory, combinatorial optimization, layout compaction, and cell generation.

430.606 Electricity Machine Control Theory

This course addresses theories and practices of controlling motors for industrial applications. It covers the characteristics of DC motors, as well as the design of current, speed, and disturbance torque controllers. The course also deals with AC machines such as induction and synchronous motors.

430.607 Optimal Design of Electric Machines

This course introduces resonant, quasi-resonant, multi-resonant, and PWM converters. It also covers soft switching techniques and modeling of converters.

430.609 Finite Element Method in Electrical Engineering

This course addresses the optimal design of electric machines based on numerical analysis and optimization theories. It covers various deterministic search algorithms and magnetic circuit theories.
This course examines the finite element method (FEM) in relation to electrical engineering.

430.610A 고전력현상토론 3-3-0

Advanced electricity market theory

This course introduces the latest research trends related to power system engineering. It provides relevant discussions and research projects on selected topics.

430.614 전력시스템운영론 3-3-0

Power System Operation

이 과목은 전력시스템의 제도 운영의 전반에 대해 다룬다. 전력 시스템 운영의 목적은 경제성과 신뢰성을 확보하는 것으로서, 이 목표를 최대한 충족시키는 최적화 방법(optimization technique)을 배운다. 전력시스템의 안전성(security)에 대해 배우고, Cost model, 경제 급전(Economic dispatch), 최적 조류 계산(Optimal power flow) 등을 배운다.

This course deals with comprehensive power system operation. It covers mathematical optimization methods, power system security, cost models, economic dispatch, and optimal power flow.

430.616 전자에너지변환론 3-3-0

Electromagnetic Conversion Theory

전기에너지와 기계에너지의 변환을 다루고, 전기기계 중심에서 적류기, 토크기, 유도기기 등을 다룬다. 특히 각 기기의 해석 및 특성을 같이 다루며, 기기의 설계 및 제어에 도움이 되도록 한다.

This course deals with conversion theories of electrical and mechanical energy. Specific topics will include the principles of DC, synchronous and induction machines.

430.617A 유기반도체 3-3-0

Organic Semiconductor

유기발광다이오드(OLED) 디스플레이, 유기태양전지, 유기전도 소재인 유기반도체의 기본 개념 및 이론에 대해 소개한다. 유기반도체의 전자 에너지 밴드 구조, 광학 특성, 전기 이동도 및 계정함 등의 전기적 특성, 광 흡수 및 방출 등의 광학적 특성, 전자전하 이동도 등에 대해 강의한다. 그리고 유기전도자의 주요 원리에 대해 설명한다.

The course introduces basic concepts and theories of organic semiconductors which become a new class of semiconductors having a broad range of applications such as organic light-emitting diode (OLED) displays, organic solar cells, and organic thin-film transistors (OTFTs), etc. It covers the electronic energy band structure, interface properties, electrical properties such as carrier mobility and recombination, optical properties such as optical absorption and emission, and excitation dynamics of organic semiconductors. It also discusses the principle behind organic electronic devices.

430.628 전력시스템특강 3-3-0

Topics in Power Systems

전력계통에 관한 최근의 국내외 연구동향을 소개한다. 강의와 Seminar을 통하여 관련분야에서 독자적인 연구를 할 수 있는 기초를 습득하게 하고 Short Paper 작성과 Term Project 수행을 통하여 전력시스템 분야의 연구경과를 체험하라.

This course introduces the latest research trends related to power system engineering. It provides relevant discussions and research projects on selected topics.
This course introduces parallel programming languages. It covers parallel programming examples and analysis, along with code optimization techniques related to parallel computer architectures.

This course addresses the manipulation of CPU oriented instruction set architecture and design methods. It covers I/O systems, system cache, and virtual memory.

This course covers recent issues on system programming. It covers database, programming language, graphics, and operating systems.
Nonlinear System Theory

This course covers the Lyapunov approach and Operator-theoretic approach to the stability analysis of nonlinear control systems. Classical methods such as the phase plane method, describing function method, Lyapunov direct & indirect methods, and Popov/circle criteria, and modern methods such as the singular perturbation technique, feedback linearization technique, robust H control, robust Lyapunov redesign, and sliding mode control will be covered.

Advanced Topics in Nonlinear Control

This course covers the Lyapunov approach and Operator-theoretic approach to the stability analysis of nonlinear control systems. Classical methods such as the phase plane method, describing function method, Lyapunov direct & indirect methods, and Popov/circle criteria, and modern methods such as the singular perturbation technique, feedback linearization technique, robust H control, robust Lyapunov redesign, and sliding mode control will be covered.

Pattern Recognition

Pattern recognition deals with the problem of finding the characteristics of a given data set by using a prior knowledge or statistical information of the data, and to classify the data into several categories on the basis of the characteristics. The dimension of the data is usually very high to visualize. When there is a priori information about the data, some typical methods in pattern recognition are the Bayes classifier, maximum likelihood method, discriminant analysis and artificial neural networks. When there is no prior information, data can be classified by clustering methods. Pattern recognition is used in bio recognition, such as face and fingerprint, and also in search for new knowledge in vastly accumulated data. This course introduces several typical methods used in pattern recognition and deals with its application.
This course introduces the fundamentals of computer vision and machine vision, and their applications. Through this course, students will learn about the basic theories, methodologies as well as practical skills for designing and solving computer vision problems ranging from the low-level vision (early vision) and mid-level vision (feature extraction, reconstruction), and high-level vision (recognition, analysis) to high-level vision (early vision (recognition, analysis), mid-level vision (feature extraction, reconstruction), and high-level vision (recognition, analysis)). Recent emerging research topics and trends in computer vision will also be covered.

### 430.711A Introduction to Computer Vision

This course provides a brief review of convolutional coding; and QAM, CPM, and spread-spectrum systems. The topics include the following: coding theory and probability function theory is required to complete this course.

### 430.713 Estimation Theory

For this course, we consider the following: formulation of optimal control problems; dynamic programming; Hamilton-Jacobi theory; applications to time and fuel optimal systems and the linear quadratic problems; examples taken from a variety of fields; and introduction to computational considerations.

### 430.714 Advanced Digital Communications

This course, from the system engineering perspective, mostly treats the signal design and detection efficient to digital communications. The topics include the following: coding and decoding theory; modulation and demodulation techniques; transmitter and receiver design; coherent, noncoherent, and differentially coherent detection techniques; block and convolutional coding; and QAM, CPM, and spread-spectrum systems. The understanding of fundamental communication theory and probability function theory is required to complete this course.

### 430.728 Advanced Error Correcting Codes

There are various kinds of error correcting codes that are used in the field of wireless communication. Sophisticated theory over those codes are introduced in this course. Cyclic codes, finite fields, Galois ring, Alternant code, Goppa code, Reed-Muller code, Kerdock code, Preparata code are introduced. The course provides a brief review of convolutional codes and the Viterbi decoder that are widely used in mobile communications in the present, and then introduces Turbo codes, LDPC codes, and Space-Time codes that can be applicable to next generation systems.
430.734 Advanced Electromagnetics 1

This course will cover electromagnetics, including electrostatics and electrodynamics. Students will analyze the electrostatic problem focusing on Green's theorem and its application. The generation, propagation, reflection, and refraction of electromagnetic waves using wave equations and antenna theory will be discussed in electrodynamics.

430.735 Advanced Electromagnetics 2

Maxwell's equations are introduced. The book of Green and Mode are discussed, and the following topics are covered:
- Electromagnetic fields and waves
- Time-harmonic electromagnetic fields
- Electromagnetic waves and antennas
- Electromagnetic radiation and scattering
- Electromagnetic interactions
- Electromagnetic compatibility
- Electromagnetic interference

This course will cover methods to solve Maxwell's equations according to their appropriate source and boundary conditions. Many important electromagnetic theories including Green functions will be discussed in order to give students a basis for their subsequent antenna and microwave studies.

430.737B Computer and Network Security

This course provides a foundation of network related computer and network security issues. Basically, it builds upon concepts of security such as confidentiality, integrity, authentication and cryptographic algorithm and protocol. It covers common attacks originating from the network which includes dial-up security (PAP, CHAP, RADIUS, Diameter), WLAN security, IPsec & SSL based VPNs, e-mail security (PGP, S/MIME); Kerberos; X.509 certificates; AAA and Mobile IP; SNMP security; etc. Also, it covers prevention and detection of attacks, and response to those attacks.

Prerequisites: Introduction to data communication networks (optional), C/C++ Programming

430.740 Source Coding Theory

The purpose of this course is to briefly review the speech processing techniques in analysis, coding, recognition and synthesis. First, students will be presented with acoustical modeling and background for speech production, which serves as a fundamental ingredient of almost all the important technical problems of speech. In speech analysis, which has historically been a major phase of speech research, students will mainly address estimates of pitch and formant frequencies. Speech coding will include the principles and development of each coder from the early VOCODER to the state-of-the-art CELP. The speech recognition part, which is based on feature extraction and classification, will take up the description of the fundamental pattern matching method. Finally, students will review the conventional speech synthesis method and discuss the practical problems encountered in its implementation.

430.742 Speech Signal Processing

This course will include the following topics: theory of compression and coding of image and speech signals based on Shannon’s information theory; introduction to information theory (entropy, etc.); characteristics of sources such as voice and image; sampling theorem; methods and properties of lossless and lossy coding; vector quantization; transform coding; and subband coding.

430.744 Wireless and Satellite Communications

This course will cover methods to solve Maxwell's equations according to their appropriate source and boundary conditions. Many important electromagnetic theories including Green functions will be discussed in order to give students a basis for their subsequent antenna and microwave studies.

Prerequisites: Introduction to data communication networks (optional), C/C++ Programming

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Prerequisites: Introduction to data communication networks (optional), C/C++ Programming

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Prerequisites: Introduction to data communication networks (optional), C/C++ Programming

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nologies that are not covered in the Mobile communications part. Basic concepts of communication theory and probability function theory are prerequisites to this course.

430.745 정보이론 3-3-0

Information Theory

본 강좌에서는 정보이론과 통계학을 다룬다. 통신이론에서 멘트로포화, 채널 용량, 신호/잡음, 채널 용량에 대한 동식 등이 포함된 통신이론, Kolmogorov 복잡도, Shannon 엔트로피, rate distortion, Huffman 코딩, 불규칙 코딩 등을 다룬다.

The topics covered in this course are as follows: extreme points of communication theory; data compression to the entropy limit; communication at the channel capacity limit; Kolmogorov complexity; Shannon entropy; rate distortion theory; Huffman coding and random coding; and unified treatment based on the asymptotic equipartition theorem.

430.746 채널부호화이론 3-3-0

Channel Coding Theory

The course will cover analytical design methods of passive devices used in the microwave band. Topics include the following: filter, matched circuit and bandwidth broadening, mechanism and analytical circuit design method of an active circuit (amplifier, mixer and oscillator), and MMIC design, mechanism and analytical circuit design method of an active circuit (amplifier, mixer and oscillator), and MMIC.

430.748 초고주파회로 3-3-0

Microwave Circuits

The topics covered in this course are as follows: extreme points of communication theory; data compression to the entropy limit; communication at the channel capacity limit; Kolmogorov complexity; Shannon entropy; rate distortion theory; Huffman coding and random coding; and unified treatment based on the asymptotic equipartition theorem.

430.749 영상 및 비디오 신호처리 3-3-0

Image and Video Signal Processing

The course will cover analytical design methods of passive devices used in the microwave band. Topics include the following: filter, matched circuit and bandwidth broadening, mechanism and analytical circuit design method of an active circuit (amplifier, mixer and oscillator), and MMIC.
430.758 
**Topics in Signal Processing**

This course discusses current issues and research directions in signal processing based on recently published research results. Topics and emphasis may differ depending on the lecturer.

430.759 
**Topics in Communications**

This course will cover the theory and practice of contemporary cryptography for advanced seniors and graduate students. The course consists of two parts: the first part presents the important modern block cipher algorithms such as DES, IDEA, RC5 and RC6 encryption algorithms, along with key generation and encryption/decryption techniques; the second part covers the various authentication techniques based on digital signatures. Several hash functions such as DMDC, MD5, SHA-1, and HMAC are introduced to compute message digests for providing a systematic presentation of authentication.

430.803A 
**Semiconductor Process**

This course will deal with various semiconductor processes such as oxidation, diffusion, chemical vapor deposition (CVD), photo lithography, etching, ion implantation, metallization, and testing in the lecture and the students will have hands-on experience of semiconductor processes with silicon wafers. The theory and experiments will enhance the understanding of semiconductor processes and the ability to perform actual fabrication processes. Integrating these unit processes appropriately, an n-channel MOSFET will be fabricated and measured.

430.805 
**Microelectronics Fabrication**

This course covers the practical fabrication process of semiconductor devices at ISRC, and is only offered to the process equipment student-researchers at ISRC.

430.806A 
**Semiconductor Device Engineering**

This course is to provide the semiconductor physics needed to understand the advanced semiconductor device operations. Included are the basic energy band theory and the carrier statistics including the heavy doping effects and the band line up theory. With these, the advanced modeling and characterization techniques for advanced MOSFET and BJT devices will be covered. The non-ideal characteristics of semiconductor devices and their scaling properties will be also covered. In the non ideal characteristics, the quantum size effect and its effects on the device characteristics such as the capacitance-voltage and transconductance characteristics will be covered.

430.807B 
**Noise of Semiconductor Devices**

This course covers the various semiconductor processes such as operation, diffusion, chemical vapor deposition (CVD), photo lithography, etching, ion implantation, metallization, and testing in the lecture and the students will have hands-on experience of semiconductor processes with silicon wafers. The theory and experiments will enhance the understanding of semiconductor processes and the ability to perform actual fabrication processes. Integrating these unit processes appropriately, an n-channel MOSFET will be fabricated and measured.

430.808 
**Semiconductor Sensors and Actuators**

This course treats the principles, fabrications and applications of sensors and actuators as the elements of a closed-loop system. The topics include sensing mechanisms of sensors and actuators, micromachining technology, signal processing, integrated sensor systems, MEMS (Micro Electro Mechanical System), packaging technology.

430.809 
**Neural Prosthesis**

This course covers the practical fabrication process of semiconductor devices at ISRC, and is only offered to the
This course is an advanced graduate seminar devoted to current research topics in the area of semiconductor devices. Topics may vary each time the course is offered. This course may be taken more than once.
depth knowledge and design methods for the general nanophotonics. Prerequisites are Quantum Mechanics and Electrodynamics.

**430.833A** Display Engineering

This course introduces the principles, device characteristics, and applications of flat panel displays such as the liquid crystal display (LCD), plasma panel display (PDP), organic light-emitting diode display (OLED), and field emission display (FED). Main lecture topics are electro-optical properties of liquid crystals, thin-film transistor technologies (a-Si, poly-silicon, oxide TFTs), and driving methods and fabrication technologies of PDP and AMOLED. It also covers future display technologies such as 3D displays and flexible displays.

**430.835** Thin Film Devices

This course covers the principles and design methods of thin film materials and devices used for optical instruments, such as the piezoelectric device, optical filter, and optical memory. Topics include the following: measurement and evaluation of the fabrication process; electrical, optical, and mechanical characteristics; characteristics of passive and active devices; magnetic thin film devices; and thermal devices.

**430.836** Nonlinear Optical Engineering

This course includes the following: nonlinear optical susceptibilities, electro-optical and magneto-optical effects, optical rectification, sum-frequency generation, harmonic generation, difference-frequency generation, parametric amplification, stimulated Raman scattering, two-photon absorption, four-wave mixing, self-focusing, and strong interaction of light with atoms.

**430.837A** Principles of Molecular Nanotechnology

This course provides basic principles of the fascinating subject of bottom-up nanotechnology with emphasis on the molecular-based study of condensed matter in small systems. It covers 'advances in atomic and molecular nanotechnology', 'nanosystems intermolecular forces and potentials', 'thermodynamics and statistical mechanics of small systems', 'phase transitions in nanosystems', 'molecular self-assembly', 'molecular building blocks', etc. In addition to the fundamental knowledge, students learn how to apply the nanotechnology to electronic devices and bio-mimic systems. Prerequisites are Quantum Mechanics and Electrodynamics.

**430.843** Advanced Programming Methodology

This course is intended to be a deep introduction to how to design and program algorithms with serious practices. The audiences should expect to learn a lot of knowledge about managing big programming projects by doing diverse and various problems related to programming.

**Course Objectives**

1. Principles of Molecular Nanotechnology
2. Advanced Programming Methodology
3. Display Engineering
4. Thin Film Devices
5. Nonlinear Optical Engineering

**Course Information**

- **Course Code**: 430.833A, 430.835, 430.836, 430.837A, 430.843
- **Level**: Graduate School
- **Department**: Dept. of Electrical & Computer Engineering
- **Credits**: 3-3-0
- **Prerequisites**: Quantum Mechanics and Electromagnetics.
미세전기계계시스템(MEMS: Micro ElectroMechanical Systems) 기술은 전기기계, 제어계측 및 반도체 기술이 복합된 기술로 마이크로나노 시스템을 설계하고 제작하며, 이를 센서, 쿼드 및 구조와 통신, 바이오, 나노 등 여러 분야에 적용하는 기술이다. 이 강좌에서는 첫째로 전반적인 MEMS 기술에 대한 소개와 마이크로나노 시스템 설계와 공정에 관한 이해 및 실습을 할 것이며, 둘째로 시스템 이슈 및 계측하여 기술을 배울 것이다. 이 과목은 전기·정보공학부 전기공학전공 석사과정 신입생을 대상으로 하였으며, MEMS 설계, 공정 및 제어에 대해 심도 있게 다룰 것이며, 공정 실험과 프로젝트가 있을 것이다.

Micro-Electro Mechanical Systems Design & Fabrication

미세전기기계시스템(MEMS: Micro ElectroMechanical Systems) 기술은 전기기계, 제어계측 및 반도체 기술이 복합된 기술로 마이크로나노 시스템을 설계하고 제작하며, 이를 센서, 쿼드 및 구조와 통신, 바이오, 나노 등 여러 분야에 적용하는 기술이다. 이 강좌에서는 첫째로 전반적인 MEMS 기술에 대한 소개와 마이크로나노 시스템 설계와 공정에 관한 이해 및 실습을 할 것이며, 둘째로 시스템 이슈 및 계측하여 기술을 배울 것이다. 이 과목은 전기·정보공학부 전기공학전공 석사과정 신입생을 대상으로 하였으며, MEMS 설계, 공정 및 제어에 대해 심도 있게 다룰 것이며, 공정 실험과 프로젝트가 있을 것이다.

Introduction to the principles of electrical and optical properties of dielectric materials, magnetic materials and insulator.

Lecture of energy band, defect, localized state, generation and recombination phenomena. The influence of material properties on the current-voltage characteristics, breakdown, conduction mechanism, partial discharge.

 Topics in Electro-physics

본 강의에서는 기본적인 플라즈마의 성질, 하전입자의 운동, 전자와 외부 전장의 상호 작용, 하전입자의 생성과 소멸, Kinetic equation for electron, 인가 주파수에 따른 gas발전의 형성, equilibrium and stability 이론을 소개하고자 한다. 또한 용량성 결합된 고주파 플라즈마에 대해서도 다루어진다.

This course covers basic plasma characteristics, charged particle motions, interactions of electrons with an external electric field, generation and decay characteristics of charged particles, kinetic equation for electrons, breakdown of gases in fields of various frequency ranges, and stability of glow discharge. It also deals with capacitively coupled radio-frequency discharges.

Reading and Research

Advanced Bioelectrical and Computer Engineering

본 강좌는 생체전기정보공학 분야의 기초 및 최신 연구동향을 폭넓게 다루며, 수강 후 보다 심화한 생체전기정보공학 과목 수강 및 연구의 창출을 마련하는 데 그 목적이 있다. 기본적인 주제인 Anatomy, Physiology, Bioinstrumentation 등의 기초 지식을 다른 후 Bioimaging, Biotechnology (Gene Engineering), Bioinformatics, Neural Engineering, Biophotonics, Biomaterials, Artificial Organs, Biosensors and BioMEMs 등 생체전기정보공학분야의 전반적인 내용을 학습하여 관련 분야의 심도있는 연구로 나아가기 위한 지식을 함양한다.

Introduction to Bioelectrical Engineering. This class covers fundamentals and recent advances in bioelectrical engineering.

After taking this class, students will be ready for taking more advanced classes in bioelectrical engineering. Topics: Bioimaging, Biotechnology (Gene Engineering), Bioinformatics, Neural Engineering, Biophotonics, Biomaterials, Artificial Organs, Biosensors and BioMEMs.

Nanobiotechnology

나노바이오기술의 최신 트렌드와 이를 이해하기 위한 기초지식을 강의한다. 하향식 나노공정기술과 상향식 자기조립기술 등을 이용하여 나노스케일의 장치들을 만드는 방법과, 이러한 장치들을 이용하여 생화학적/의학적 문제들에 적용하는 방식과 예를 강의한다. 나노바이오기술의 세계적인 연구동향, 주요연구그룹, 주요회사들에 대하여 강의하고 토론한다.

Description:
Covers basic theory/knowledge/tools to understand key topics in Nanobiotechnology (NBT) with extensive topical surveys
Objectives:
- Builds foundation for understanding current issues in NBT
- Build wide entry points for engineers to start research in NBT
- Helps for students be an independent interdisciplinary researcher in NBT
- Practice identifying problems, propose a research proposal, plan experiments and write academic papers Survey of key research groups and companies
- Improve academic communication skills

Biomcomputation

본 교과목은 생체정보공학 분야 소개 및 주요 방법론, 기본 Bioinformatics 알고리즘에 대한 이해 및 응용에 대해 학습하며, 관련 최근 연구 동향을 수독할 수 있도록 한다.

Introduction to bioinformatics and computation. This class covers fundamentals of bioinformatics algorithms and various applications in addition to recent trends in related research areas.

Bioimaging

본 교과목에서는 생체 이미징에 사용되는 다양한 영상방식(탐침, Quantum Dot Imaging, Optical Imaging, Near Infrared Spectroscopy, 소음과, Computerized Tomography, 양전자 단층 활성, 자기공명영상 및 자기공명영상의 올리브, 전기공학적 원리로 소개하고 생체공학적 방식을 학습하게 한다.

In this course, physical and electrical principles of various bio-imaging methods will be discussed and their image reconstruction approaches will be introduced. The imaging modalities will include electrode probes, quantum dot imaging, optical imaging, near infrared spectroscopy, ultrasound, computerized tomography, positron emission tomography, magnetic resonance imaging and functional magnetic resonance imaging.
4190.561 고급계산이론 3-3-0
Advanced Theory in Computation

이 과목에서는 먼저 알고리즘의 성능을 분석하는 기법에 대해 배운다. 여러 가지 string processing 알고리즘, bioinformatics에의 항목들에 대해 설명한다. 또한, online 알고리즘, randomized 알고리즘, approximation 알고리즘에 대해 배운다.

This course addresses techniques for analyzing the performances of algorithms. It covers various string processing algorithms and their applications. Also, the course examines online, randomized and approximation algorithms.

4190.562 고급그래픽스 3-3-0
Advanced Graphics

3차원 모델링 및 상호작용에 관한 최근의 연구동향에 관하여 공부한다.

This course addresses recent trends of three-dimensional shape modeling and graphical interactions.

4190.568 고급운영체제 3-3-0
Advanced Operating Systems

이 과목에서는 유닉스 운영체제를 중심으로 운영체제의 내부 구조와 운영체제 분야의 최근 이론을 배운다. 수강생들은 또한 운영체제 관련 다양한 논문을 읽고 발표하며, 운영체제와 관련된 프로젝트를 수행하게 된다. 강의 내용을 요약하면, 유닉스의 구조와 발견, 운영체제 관련 논문 연구, 프로젝트 수행 등이다.

This course studies the internal structure of operating systems, focusing on the UNIX system. It provides relevant research projects, discussions, and presentations.

4190.569 고급인공지능 3-3-0
Advanced Artificial Intelligence

인공지능 분야에서 선택된 최신 연구주제에 관한 논문들을 세미나 형식으로 진행한다.

This course provides seminars on artificial intelligence.

4190.570 고급컴파일러구성 3-3-0
Advanced Compiler Construction

컴파일러 설계에 필요한 이론, 구문분석, 적절의 의미 검사, 기역장치의 구성 등에 대한 지식과 중간 코드를 생성할 수 있는 능력을 갖춘 학생들에게 실제 설계된 코드의 최적화에 대한 여러 이론과 컴파일러 구현시 실제로 발생할 수 있는 여러 문제점들에 대해 다루며, 현존하는 컴파일러들에 대해 사례별로 분석한다.

This course addresses code optimization and compiler implementation. It also provides case studies about existing compilers.

4190.571 고급컴퓨터구조 3-3-0
Advanced Computer Architecture

컴퓨터를 설계하는 데 필요한 과학적 방법론, 설계기법, 도면협찬 검증방법, 기술특성, 성능평가 방법을 익힌다. 구체적으로 다루어지는 내용은 피아트프린 트레의 병가 실험 방법, 막그러운 수준의 방편성, 메모리 계층구조, 입출력 시스템, 다중처리기 등이다.

This course focuses on engineering methodologies, design techniques, correctness criteria, and technology trends about computer systems. It discusses pipelining, instruction level parallelism, memory hierarchies, input/output, and multiprocessors.

4190.572 고급컴퓨터네트워크 3-3-0
Advanced Computer Networks

ATM에 관한 Physical layer, ATM Layer, ATM Adaptation Layer 각 layer에 관한 강의이며 특히 connectionless service, traffic management, switch에 관한 심도 있는 강의를 한다.

이 과목에서는 프로그래밍 언어의 스펙(Notation and concepts), 디자인(Case studies of languages and features), 그리고 프로그램을 분석하는 방법에 대해서 공부한다.

This course covers ATM technology. It covers physical, ATM, and ATM adaptation layers. The course also deals with connectionless service and traffic management.

4190.574 고급프로그램양언어 3-3-0
Advanced Programming Languages

이 수업에서는 프로그래밍 언어의 스펙(Notation and concepts), 디자인(Case studies of languages and features), 그리고 프로그램을 분석하는 방법에 대해서 공부한다.

This course addresses the notation and concepts of programming languages, cases of study of languages and features, as well as program analysis.

4190.661 객체지향시스템 3-3-0
Object-Oriented Systems

본 과목에서는 유비쿼터스 컴퓨팅 네트워크 환경에서 정보의 이용을 통해 가치창출이라는 사용자의 요구에 부합하기 위해서 정보를 신속하게 전달처리하고 보호하는 분산정보처리 소프트웨어와 시스템에 대하여 학습한다. 효과적이고 효율적인 정보 보호, 이용 및 전달, 그리고 성능별에 관한 분산정보처리 이슈들을 심도 있게 이해하고 관련 기술들을 습득함으로써 이러한 환경에서 요구되는 기술들을 연구/개발할 수 있는 능력을 배양한다.

본 과목에서 다루는 토픽들의 예는 보안/디지털 권리 관리(Mobile Digital Rights Management) 및 동적 적용(Dynamic Adaptation)이다.

The goal of this course is to study distributed information processing software and systems that transmit, process, and protect information efficiently in order to meet the user requirements of value creation via using information in ubiquitous computing/network environments. Students learn how to perform research to develop technologies needed in such environments, by deeply understanding distributed information processing issues regarding effective, efficient information protection, utilization, & transmission and performance engineering, and by obtaining relevant skills. Examples of topics covered by the course include Mobile Digital Rights Management and Dynamic Adaptation.
Advanced Program Analysis

This course focuses on the practical aspects of static program analysis. Static program analysis is a technique for generating software models and properties, which are used to verify the correctness of software. The course covers various aspects of static program analysis, including program liveness, safety, and security, and introduces various verification techniques.

Course Topics:
- Program liveness
- Safety and security
- Verification techniques
- Model checking
- Abstract interpretation
- Type systems
- Program analysis
- Static program analysis
- Logic design
- Computer-Aided Design
- Machine Learning
- Real-Time Systems

Advanced Embedded Systems

This course introduces the design and implementation of embedded systems, which are systems that are designed to perform a specific function, such as those found in automotive, consumer, and industrial applications. The course covers various aspects of embedded system design, including hardware-software co-design, real-time operating systems, and application-specific integrated circuits.

Course Topics:
- Hardware-software co-design
- Real-time operating systems
- Application-specific integrated circuits
- Digital systems design methodology
- Advanced program analysis
- Machine learning
- Real-time systems

Digital Systems Design Methodology

This course provides an in-depth understanding of digital systems design methodology, including the design process, design tools, and design methodologies. The course covers various aspects of digital systems design, including digital logic design, computer-aided design, and hardware-software co-design.

Course Topics:
- Digital logic design
- Computer-aided design
- Hardware-software co-design
- Digital systems design methodology
- Advanced program analysis
- Machine learning
- Real-time systems

Geometric Modeling

This course focuses on geometric modeling, which is the process of creating and manipulating 3D models for various applications, such as computer-aided design, computer graphics, and virtual reality. The course covers various aspects of geometric modeling, including curve and surface modeling, feature-based modeling, and solid modeling.

Course Topics:
- Curve and surface modeling
- Feature-based modeling
- Solid modeling
- Advanced program analysis
- Machine learning
- Real-time systems

Machine Learning

This course introduces the fundamental concepts and techniques of machine learning, which is a subfield of artificial intelligence that deals with the design and development of algorithms that enable machines to learn from data. The course covers various aspects of machine learning, including supervised learning, unsupervised learning, and reinforcement learning.

Course Topics:
- Supervised learning
- Unsupervised learning
- Reinforcement learning
- Advanced program analysis
- Machine learning
- Real-time systems

Real-Time Systems

This course focuses on the design and implementation of real-time systems, which are systems that must respond to events in a timely manner. The course covers various aspects of real-time systems, including real-time operating systems, real-time scheduling, and real-time communication.
프로그래밍언어, 통신, 데이터베이스, 결함허용 등의 기법에 대하여 학습한다. 또 기반과제를 통하여 각자의 연구분야의 실시간 특성에 대하여 연구할 기회를 갖는다.

This course covers various areas of real-time computation including task scheduling, real-time programming languages, and real-time communication. It also deals with real-time databases and fault tolerant computing.

4190.673 암호학 3-3-0

Cryptography

해외 암호학의 주요내용을 배운다. 구체적으로 고전 암호학, 사 논의 두드러진 보안성, 대칭키 암호시스템, 공개키 암호시스템, 실사 사양, 해독함수, 비밀공유기법, 난수발생기법, 영지식 증명 등을 배 운다.

This course addresses issues regarding modern cryptography. Specific topics will include classical cryptography, Shannon’s unconditional security, symmetric-key and public-key cryptosystems.

4190.676 인공신경망 3-3-0

Artificial Neural Networks

인공신경망 시스템은 인간 뇌의 구조를 모방한 생물학적 정 보처리시스템으로서 비교적 단순한 기능을 가진 다수의 인산소자 들으로 구성되어 있다. 이 과목에서는 신경망의 수학적 이론과 실제 응용에 대해 학습한다. 최신 신경망 모델의 다양한 구조를 살펴보 며 감독학습, 무감독 학습, 강화학습 수행하기 위한 연결방식 또는 확률적 학습 알고리즘에 대하여 공부한다.

This course studies mathematical theories and practical applications of neural networks. It covers the architecture of various modern neural network models. The course also reviews connectionist and probabilistic algorithms for supervised, unsupervised, and reinforcement learning.

4190.678 자연언어처리 3-3-0

Natural Language Processing

자연언어처리는 인간의 언어를 컴퓨터가 자동으로 분석하고 생 성하기 위한 소프트웨어를 연구하는 분야이다. 본 과목에서는 자연언어를 이해하고 기계어학을 자동으로 수행하기 위한 기본적인 개념과 구체적인 어휘 처리 기법을 공부한다. 특히, 형태소 분석, 구문분석, 의사분석, 해독학, 어떤정성에 대해 공부한다.

This course addresses basic concepts and linguistic processing methods regarding natural language comprehension and machine translation. Specific topics will include morphological analysis, syntactic parsing, semantic analysis, pragmatics, and language generation.

4190.680 지식표현 및 추론 3-3-0

Knowledge Representation and Reasoning

지식 표현 및 추론은 인간 수준의 인공지능을 실현하기 위한 가장 중요한 주제중 하나이다. 본 과목에서는 지식표현과 관련 된 최신 주제에 대한 논문에 대하여 토론한다.

Knowledge representation and reasoning is one of the key issues in achieving human-level artificial intelligence in machines. Selected papers on current topics in knowledge representation are discussed.

4190.681A 유전알고리즘 3-3-0

Genetic Algorithm

유전 알고리즘으로 대표되는 진화 알고리즘과 문제 공간 탐색 에 대해 학습한다. 진화 알고리즘은 크게 문제 해결을 위한 경우와 심화학습을 위한 경우가 있는데 본 강좌는 문제 해결 측면에 초점을 맞춘다.

Evolutionary algorithms, with genetic algorithms as the representative, are investigated. The approaches utilize the natural evolution for solving problems. Evolutionary approaches may be used for problem solving or simulation. This class focuses on the problem-solving side.

4190.683A 고급인간컴퓨터상호작용 3-3-0

Advanced Human-Computer Interaction

본 과목은 학우 인간컴퓨터상호작용(Introduction to Human-Computer Interaction) 과목의 상위 학위 과목으로서, HCI 분야 연구 수행에 있어서 필수적인 HCI 모델, 이론, 프레임워크에 대해서 보다 깊이 있게 소개하고, HCI의 다양한 응용분야(Information Visualization, Mobile Interaction, Visual Analytics, Social Computing 등)에서 실제 문제 해결에 적용하는 방법론 및 기술을 숙지할 수 있는 기회를 제공한다.

This course is a graduate level introductory course to the filed of Human-Computer Interaction. It covers HCI models, theories, and frameworks that are key to conducting HCI research. In addition, this course offers opportunities to get familiar with the methodologies and techniques to apply those key components to real world problems found in various HCI application areas such as information visualization, mobile interaction, visual analytics, and social computing.

4190.684 분산시스템 3-3-0

Distributed Systems

컴퓨터 시스템이 발달함에 따라 여러 대의 컴퓨터를 네트워크를 통하여 묶어 사용하는 일들이 많아지게 된다. 여러 대의 컴퓨터를 사용하게 되면 여러 대의 통신이 이루어져 해결하거나, 그 중에서 몇 대의 대가 고장이 나면 어떻게 대응하느냐, 또는 같은 정보 가 여러 곳에 있을 때 어떻게 해결할지 등의 문제가 등장한다. 본 과목에서는 분산시스템을 핵심의 커다란 컴퓨터 인 것처럼 사용할 수 있는 방법을 배우게 된다.

As the advance of the computer technology, computer network enables a lot of computers to be integrated together for a common purpose. When there are multiple computers in the system, there are certain issues which must be dealt with, such as the communication protocol, fault tolerance and consistency of distributed information. These issues are studied in this class so that multiple computers can be used as if it is a single large computer.

4190.685 데이터통신이해 3-3-0

Understanding Data Communication

데이터 네트워크로 필요한 프로토콜과 알고리즘의 최신 경향에 대해 연구한다. 주로 무선망, 멀티미디어 데이터, 광인터넷 등에서 동작하는 여러 새로운 개념의 프로토콜을 알게 된다. 데이터 네트 워크에 관한 많은 배경지식을 필요로 하며 주어진 분야에 대한 발표 수업을 해야 한다. 이 수업은 조별 팀 프로젝트를 수행한다.

This graduate level course on advanced computer networks
aims to provide an overview of new technologies about network protocols and algorithms. The main themes will include many kinds of protocol about wireless networks, multimedia data, optical networks, and so on. Students are expected to have strong prior knowledge on computer network fundamentals. In this course, each student will give a presentation on an assigned topic. The course includes a term project, usually carried out in small groups.

4190.761  계산이론특강  3-3-0
Topics in Theory of Computation
이 과목에서는 컴퓨터 이론 분야의 여러 주제를 다룬다. 주제는 그래프 이론, 생물정보학 알고리즘, 병렬 알고리즘 등을 포함합니다.

This course provides various topics in computer theory. Topics include graph theory, bioinformatics algorithms, and parallel algorithms.

4190.762  그래픽스특강  3-3-0
Topics in Computer Graphics

This class discusses the fundamental concepts of computer graphics. Topics include the following: fundamental rendering pipeline; various object modeling methods; light models; ray tracing; volume rendering; shadows; and material property.

4190.763  내장형시스템특강  3-3-0
Topics in Embedded Systems
본 강좌는 이미 embedded system에 익숙한 대학원생들을 대상으로 하며 embedded system을 설계하는 데 중요한 여러 주제들에 관한 최근의 연구논문들을 중심으로 연구결과들을 학습하여 embedded system문제의 본격적인 연구를 준비시키는 데 목적이 있다.

This course covers various up-to-date research topics on embedded systems. It is intended primarily for advanced graduate students in the field of embedded systems. Recent conference papers as well as journal papers are used in the course.

4190.764  대규모집적회로특강  3-3-0
Topics in VLSI

This course will give students the opportunity to learn the principles, underlining issues, and useful skills which utilize parallelism and are able to improve program execution speed. This course is related to all subjects about computer H/W, parallism and are able to improve program execution speed. Students will discuss recent research trends related to parallel processing, such as the shared memory model, clustering, distributed caching and prefetching, the memory consistency model, multi-threading, etc.

4190.765  데이터베이스특강  3-3-0
Topics in Database

This course will give students the opportunity to learn the principles, underlining issues, and useful skills which utilize parallelism and are able to improve program execution speed. This course is related to all subjects about computer H/W, parallism and are able to improve program execution speed. Students will discuss recent research trends related to parallel processing, such as the shared memory model, clustering, distributed caching and prefetching, the memory consistency model, multi-threading, etc.

4190.770  실시간시스템특강  3-3-0
Topics in Real-Time Systems

This course aims to provide graduate-level students with hands-on experience in real-time systems construction based on state-of-the-art technology. In doing so, students are expected to study and practice real-time system design techniques through the analysis of real-time requirements and the implementation of a real-time operating system. The course will address various topics in real-time systems: real-time software/hardware development methodology; features required for real-time operating systems; and resource allocation and scheduling.
4190.771 알고리즘 특강 3-3-0

Topics in Algorithms

Shortest path, Network flow 등의 그래프 문제를 해결하는 최근에 개발된 알고리즘과 알고리즘 분야에서의 최근 연구결과를 학습한다. 분산 시스템의 여러 모델과 분산 시스템에서 발생하는 중요한 문제들을 해결하는 분산 알고리즘에 관하여 연구한다.

This course will cover algorithms for the shortest path, network flow, and recent research results. It will also provide students with diverse models for distributed systems and issues raised from distributed systems.

4190.773 인공지능 특강 3-3-0

Topics in Artificial Intelligence

주어진 지식과 경험을 바탕으로 앞으로 주어질 작업을 효율적이고 체계적으로 수행할 수 있는 컴퓨터 프로그램 개발에 많은 연 구가 계속되어 오고 있다. 이러한 연구의 핵심 분야인 기계 학습(Machine Learning)에 관한 강의로 현재까지 발표된 대표적인 연구 논문들을 중심으로 이론 및 알고리즘, 응용 분야 등을 설명한다.

This course will discuss the field of machine learning concerned with the question of how to construct computer programs that automatically improve with experience. Based on many research papers published in the field of machine learning, several well-known machine learning approaches are discussed with their key algorithms, theories, and application areas.

4190.774 인터넷 특강 3-3-0

Topics in Internet

인터넷의 구성기술에 대한 최신 동향을 다룬다. 인터넷에서 사용하는 네트워크 프로토콜, 라우팅 알고리즘, 맵 관리 기법과 함께 인터넷 주요 구성요소인 라우터, 스위치, 네트워크 서버, 단말장치를 다룬다. 또한 주요 인터넷 응용기술을 살펴본다. 강의, 세미나, 프로젝트, 가상화 등 다양한 방식의 교육을 지향한다.

This graduate-level one-semester course gives in-depth treatment of basic and applied topics in Internet technology. Students with strong computer engineering background will be admitted and requested to actively participate by seminar presentations and term projects.

4190.775 컴파일러구성 특강 3-3-0

Topics in Compiler Construction

컴파일러 구성의 현안 문제들을 연구하는 데 언어의 형식, 즉 새로운 프로그래밍 언어가 이루어질 때, 어더를 조정으로 프로그래밍 언어를 구성할 것인지, 또한 방향은 어떠한 것인지 연구하게 된다.

In this course, students will learn the language specification needed to research several issues about compiler architecture. Topics include the focus of program language design, and what methods can be applied.

4190.776 컴퓨터공학 특강 3-3-0

Topics in Computer Engineering

내용에 구애됨이 없이 최신의 컴퓨터 이론 및 동향을 소개한다. Various up-to-date computer theories, practices and trends are covered in this course. Topics vary each semester.
Advanced Network Security

The frequency and cost of threats in Internet keep on increasing. To deal with Internet security, this course first teaches the basics of cryptography, Internet protocols, and architecture. Then we investigate the vulnerabilities and countermeasures in every aspect of Internet operations from DNS to Web. Also, we survey the state-of-the-art technologies in Internet security.

Information Visualization and Visual Analytics

Information Visualization is a field of study on the use of information visualization techniques in statistics, machine learning, and data mining. Information Visualization techniques with related data science problem-solving skills of human experts through the use of technology of Visual Analytics that is a new scientific at-evaluation methods. This course also covers the science and types, interaction methods, design study methodologies, and visualization, which include the theoretical background of human computer supported, interactive, visual representations of large abstract data to amplify human cognition. This course teaches the basics of cryptography, Internet protocols, and increasing. To deal with Internet security, this course first teaches the basics of cryptography, Internet protocols, and architecture. Then we investigate the vulnerabilities and countermeasures in every aspect of Internet operations from DNS to Web. Also, we survey the state-of-the-art technologies in Internet security.

Probabilistic graphical models are a formal statistical framework that expresses the conditional dependence structure between random variables via graphs. Graphical models compactly represent large collections of variables with complex interactions, and have been successfully applied to many real world problems in AI, including computer vision, natural language processing, robotics, computer systems, and computational biology. This course will provide a comprehensive survey of necessary theory, principles and algorithms for graphical models, including representation of directed and undirected graphical models (e.g. Markov Random Fields and Bayesian networks), exact learning and inference algorithms (e.g. Sum-Product Algorithm and Belief Propagation), and approximate methods (e.g. Variational Methods and Sampling), advanced machine learning topics (e.g. Max Margin Learning and Deep neural networks), and their practical applications in computer vision and data mining. This course is designed for graduate students and advanced undergraduate students.

Topics in Big Data Analytics

how can we find useful patterns and anomalies in big data spanning several Petabytes? How can we design dis-
distributed systems, platforms, and algorithms to analyze big data? Big data are everywhere: examples include social network, the World Wide Web, communication network, biological network, and many more. Analyzing and extracting useful information from big data is a crucial task with various applications. This course covers advanced research topics, including designing distributed systems, underlying technologies, and essential algorithms for analyzing big data. This course also covers the analysis of real world big data using systems and algorithms designed.

M1522.001900 고급데이터베이스 1 3-3-0
Advanced Databases 1

이 과목에서는 고급 데이터베이스 시스템의 기반을 되는 주제로서 결과 데이터베이스, 데이터베이스 회복, 병렬제어, 데이터베이스 보안 및 무결성, 그리고 분산 데이터베이스를 다룬다. 또한 현재 제기되고 있는 문제로서 의사결정지원 시스템, 웹 데이터베이스, 멀티미디어 데이터베이스, 그리고 이동 데이터베이스도 다뤄질 것이다. 교과목을 통해 관련 연구문헌들이 논의될 것이다.

This course probes into advanced topics on database systems. It covers query processing, database recovery, concurrency control, database security and integrity. Other specific topics will include distributed database, decision support systems, and web database.

M1522.002000 고급데이터베이스 2 3-3-0
Advanced Databases 2

본 과목은 대학원 과정 과목인 고급데이터베이스 1의 후속 과정으로서 관계형 및 비관계형 데이터 모델에 기반한 데이터베이스 용용을 위한 핵심적 알고리즘과 규모확장적인 방법론을 다루며, 이들 기법을 시공간 데이터, 텍스트 데이터 그리고 NoSQL 등 다양하고 새로운 형태의 데이터에 대해 적용한다. 수강 학생들은 학사과정 데이터베이스와 고급데이터베이스 1의 수강 내용을 사진에 숙지하고 있어야 한다. 필수적 강의 주제로는 공간 및 다차원 데이터베이스, 텍스트 데이터베이스 그리고 NoSQL 데이터베이스, NoSQL 데이터 모델과 카-벨류 스토어, Map-Reduce와 규모확장적 데이터 처리 등이 있다. 또한 담당 교수의 재량으로 선택할 수 있는 주제로는 대규모 클러스터링, 시계열 및 스파리밍 데이터, 과학 데이터베이스, 유사도 검색, 그리고 병렬 및 분산 데이터베이스 등이 있다.

Term projects recommended: (1) DBMS function implementation, (2) Research oriented.
Prerequisites: (1) Data structures, (2) Introduction to Databases, (3) Advanced Databases 1

M1522.002200 고급데이터통신 3-3-0
Advanced Databases 2

이 과목은 컴퓨터 네트워크에 기본을 둔 신기술을 개괄적으로 살펴본다. 주로 트래픽 모델링, 네트워크 디자인 및 분석, 네트워크 시스템 성능 분석, 그래프 알고리즘, 네트워크 분할 알고리즘, 인터넷과 무선망을 위한 프로토콜에 대해 살펴본다. 컴퓨터 네트워크에 관한 많은 배경지식을 필요로 하며 주어진 분야에 대한 발표 수업을 해야한다. 이 수업은 조별 팀 프로젝트를 수행한다.

This course addresses new technologies based on computer networks. Specific topics will include traffic modeling, network flow design and analysis, network system performance analysis, and graph algorithms.
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445.604A 투과전자현미경특강 3-2-2

Topics in Transmission Electron Microscopy

상기과목은 투과 전자현미경을 이용하여 학생들을 위하여 전자 현미경의 실제조작, 사진촬영기법, 결과분석 등의 실 힘을 제공하는 과목이다. 본 과목의 수강은 학부 또는 대학원에서 제공되는 전자 현미경 이론과 투과전자현미경 course를 수강하여야 한다. 실험계획은 각자의 연구주제에 맞는 실습을 선택하여 한 학기동안 논문연구와 병행하여 본 강의를 수행할 것을 권장한다.

This course covers the TEM operation and analysis. It provides 3 weeks of lab projects in addition to computer simulation tasks.

445.607 고체이온공학 3-3-0

Solid State Ionics

고체 내의 확산에 대한 일양전위 이론과 속도론적 이론을 실제 시스템에 응용하고, 결함에 의한 전도 내의 현상에 대해 강의한다.

This course probes into the thermodynamic theories regarding solids, as well as their application to actual systems.

445.608 미세소자재료공학 3-3-0

Materials Science in Micro Devices

이번 강의에서는 이론과 미세소자재료공학의 문제에 대해 초기실적 반도체회로(ULSI)에 사용되고 있는 알루미늄(Al)과 구리(Cu) 배선(interconnect)을 중심으로 살펴보고자 한다.

This course focuses on the Al and Cu interconnection used in ULSI (ultra large Scale Integrated circuits).

445.609 응용전기화학특강 3-3-0

Topics in Applied Electrochemistry

학부에서 배웠던 물리화학과 열역학을 바탕으로 전기화학의 기초가 되는 속도론(Kinetics)과 여러 용액의 성질, 전기적 이중층(electrical double layer)의 구조 등을 살펴보고 전기화학의 응용 분야인 시멘테이션(contact reduction)과 교류 임피던스(AC impedance techniques), 전지 및 연료 전지에 대해서 다룬다.

This course studies the kinetics and the properties of various electrical double layer structures. It covers contact reduction and AC impedance techniques, as well as batteries and fuel cells for electrochemical application.

445.616 결정구조해석 3-3-0

Crystal Structure Analysis

결정구조 해석과 관련된 여러 가지 방법을 강의하는 것이 목적이다. 결정의 준비, X-선 단결정해석, 강도의 측정, 측정된 자료의 처리, Fourier Map의 작성, 위상문제의 해결, 결정구조의 정상, 완성된 구조의 재도법 등을 차례로 설명한다.

This course addresses various methods of analyzing the crystal structures. It also covers the preparation of crystals, x-ray single crystal analysis, and the measurement of intensity.

445.619 재료열역학 3-3-0

Thermodynamics of Materials

이 과목은 다양한 학사과정 배정을 가진 재료공학부 대학원 신입생들에게 평형열역학의 기본 개념을 정리 복습시키고 나아가 재료에서 일어나는 모든 비가역과정을 정량적으로 다룰 수 있는 비평형열역학의 기초를 제공하기 위한 것이다. 우선 근거 객의 방법에 의하여 열역학의 기본 개념과 열역학 함수를 이해한 후 연역 적인 방법에 의하여 열역학의 모든 관계식들의 논리적 구성과 과학적 합리성이 실험결과에서 다룬다.

This course offers the basics of nonequilibrium thermodynamics of materials. It focuses on the basic concepts of thermodynamics and its functions. In addition, the course examines the logical composition of the whole formula of thermodynamics.

445.620 고체반응속도론 3-3-0

Kinetic Processes in Materials

열역학의 자유에너지 개념정립을 통한 상전이의 구동력과 상평 형의 영향을 고찰하는 데 목적이 있다. 학생성과 성장에 대한 교 재 내의 확산이론을 취급하며 또한 재질의 재활용도를 포함하는 구조변화 등을 다룬다.

This course studies driving forces of transition and the effects of phase equilibrium.

445.623 박막공학 3-3-0

Thin Film Technology

재료를 박막화하는 데 필요한 공정에 대해 전체적으로 이해하는 데 목적이 있다. 박막 공정의 일정의 과정과 실험장치 및 측정장치에 대한 설명과 여러 박막 형성 방법에 대해 소개한다. 여러 박막에 대한 특성 및 박막 형성이론에 대해 설명하고, 박막 물성의 측정에 대해 소개한다.

This course reviews necessary processes for thin film production. Specific topics will include vacuum devices and analysis devices as well as the thin film formation theory and the analysis of thin film properties.

445.630 섬유복합재료특강 3-3-0

Topics in Fiber Reinforced Composite Materials

복합재료의 구조-성능의 관계를 이해하고 이를 바탕으로 한 최적설계를 학습한다. 복합재료의 Micromechanics와 Macroemecanics의 이해와 복합재료의 구조해석과 역학적 성질에 대한 평가 방법을 배운다.

This course probes into the optimal design of fiber reinforced composites, based on their structure-property relationship. It also covers the structural analysis and the evaluation of mechanical properties of composites.

445.631A 소성재료역학 3-3-0

Plasticity of Materials

재료의 역학적 성질은 크게 탄성, 점탄성, 소성으로 나누어서 고려되는 데 특히 소성은 최종 변형량이 최종 응력 상태뿐만 아니라 응력시계에 따라서 달라지는 성질을 다룬다. 이 과목은 연속체 역학으로서의 소성 역학의 기초이론과 함께 작은 변형과 큰 변형

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시 소성의 현상학적 구성방정식을 다룬다.

This course covers the basics of continuum plasticity including the phenomenological constitutive equations for infinitesimal and finite deformations.

445.636 초전도재료특강 3-3-0

Topics in Superconducting Materials

본 과목은 초전도재료를 연구하거나 관심이 있는 대학원생들을 대상으로 한다. 강의 전반부는 먼저 초전도 현상을 설명하고 초전도 이론에 대해 기초적 개념을 강의한 후, 지금까지 개발된 초전도 재료의 종류와 구조에 대해 알리본다. 후반부는 재료과학 및 공학적 관점에서 중요한 초전도재료의 자기적 성질, 자속파닝과 임계전류 특성을 집중적으로 이해하고 마지막으로 초전도재료의 제조 공정 및 용융에 대해 강의한다. 본 강의를 통해 주요 연구문제에 대해서는 논문 연구를 병행할 예정이다.

This course addresses the superconduction phenomena, the magnetic properties of superconducting materials, and the application and manufacturing processes of superconducting materials.

445.637 재료의 전자물성 3-3-0

Electronic Properties of Materials

본 강의는 재료 전기전자적인 물성을 이해하기 위한 강의와 재료의 신뢰성, 전기 전자 재료의 현황 등 실제 산업체에서의 활용을 알아본다.

This course studies the electronic properties and reliability of electronic materials in the industry.

445.638 생체세라믹스 3-3-0

Bioceramics

생체에 대한 무기재료의 이 용이 증가함에 따라 이들의 구조와 생체와의 반응특성, 그리고 그 제조 등을 취급하는 것이 목적이다. 재료의화학적조성과미세구조변화와다른생체조직내에서의적합성에관하여주로강의한다.

This course addresses the structure of bioceramics, reaction with human body, and manufacturing. It also cover the compatibility of bioceramics with human body.

445.639 자기재료특강 3-3-0

Topics in Magnetic Materials

무기재료 자성재의 특성, 자석에 대한 물리적 수학적 접근, 그리고 자성체의공업적응용등을비롯한데그목적을들다. 자기적성질과자석의유래,인자성재료의특성과구조,Ferrite자성재료의제법과미장착물의효과등을다룬다.

This course examines the properties of magnetic materials. It also covers the origin of magnetism, the structure of soft and ferrite magnetic materials, as well as the effects of dopant.

445.640 재료의 집합조직과 이방성 3-3-0

Texture and Anisotropy of Materials

다각성의 집합조직 또는 우선방위와 재료의 이방성에 대한 공부를 한다. 1학기에서 공부한 우선방위의 나타내는 각종 방법들 간단히 소개하고 변형집합조직, 결정성집합조직, 중량층의 집합조직, 도금층의 집합조직, 결정성정질집합조직 등의 형성이론과 집합조직에 따른 이방성에 대한 공부를 한다.

This course addresses basic numerical analysis procedures and computer applications in metallurgical processes.
445.665 Junction Effect Analysis  3-3-0

**Micromechanics of Crystalline Solid**

The development of nitride semiconductor technology enables us to use high-brightness blue, green and white light emitting diodes (LEDs) in many applications. Especially, it is expected that the solid-state white LEDs, often called solid-state lighting, will replace tube-type conventional light sources in the near future. In this course, we cover the basic principles of LEDs and ways to improve the interal as well as external quantum efficiencies, and recent progress in nitride semiconductor technology, to provide useful information to LED researchers and other application engineers.

445.667A Patent and Information Analysis  3-3-0

**Patents and Information Analysis**

This course provides the basic informations about the applications, the protection to intellectual property, the examination and registration of the patent, In details, the concepts and topics are the following; the definition of inventive and innovative activities, examination and registration of the patent, utility model, industrial design and trademark (including service-marks), policies on the protection of trade secrets, the protection to industrial designs, and the protection to trade secrets.

This lecture has contained the general informations of the inventions, the patents and their services for the researchers. This lecture will provide the basic informations about the application and registration for the patents, In details, the contents are the following; the definition of inventive and innovative activities, examination and registration of the patent, utility model, industrial design and trademark (including service-marks), policies on the protection of trade secrets, the protection to industrial designs, and the protection to trade secrets. Also, this course will provide the relations between the
This course is designed for MS and Ph.D. students to provide professional understanding in the synthesis of ceramic-metal hard materials composites. In this course solution thermodynamics, phase such as TiC, Ti(CN), and WC along with Ni, Fe, and Co binder metals. In this course we will discuss the kinetics of the solid state reactions of various carbides and nitrides, and the influence of the microstructure on the properties of the composite. The materials of interest will be transitional metal carbides and carbo-nitrides ceramic-metal hard materials composites. The materials of interest will be transitional metal carbides and carbo-nitrides ceramic-metal hard materials composites.

In this subject, we study the principle of colour in materials and the fundamentals of the colour chemistry. We will study the history of synthetic dyes and classify them according to their structural properties. We will also examine how the structure of a dye affects its optical, physical, and chemical properties of various groups of dyes.
polymerization. This course introduces rheological modeling and measurement of the flow phenomena such as molten materials, solutions, and slurry or suspension for composite materials. It also provides basics of tensor differential equations considering non-Newtonian and viscoelastic behavior of flow as a continuum. The theoretical basis for rheological analysis of material flow is given. Various topics related to rheology applications for materials processing are studied.

445.684A  生物体利用性材料 3-3-0
Biomedical Organic Materials

This course will introduce the recent progress in the study of polymer synthesis, with a special focus on controlled polymerization. The theoretical basis for rheological analysis of material flow is given. Various topics related to rheology applications for materials processing are studied.

445.686  환경기능소재연계 3-3-0
Environmetnally Functioning Materials

The primary objective of this course is to learn the basic principles and applications of various computational methods to study and predict material properties.

445.688  고분자유기화학특강 3-3-0
Topics in Organics Chemistry of Polymers

This course introduces rheological modeling and measurement of the flow phenomena such as molten materials, solutions, and slurry or suspension for composite materials. It also provides basics of tensor differential equations considering non-Newtonian and viscoelastic behavior of flow as a continuum. The theoretical basis for rheological analysis of material flow is given. Various topics related to rheology applications for materials processing are studied.

445.693  재료비탄성수지해석 3-3-0
Computational Inelasticity for Polymeric Materials

This course aims at providing advanced knowledge related to computational inelasticity for polymeric materials, through which students are equipped with some numerical tools and theoretical background which enable to design new material processing and also analyze the mechanical behavior of materials. Current course consists of four sessions. The continuum mechanics, in particular focusing on topics related to computational inelasticity, is outlined with actual examples. Finite element (FE) method is studied based on two-dimensional problems (e.g., nonlinear and large deformation beam element) and an actual FE code is developed using MatLab. Then, anisotropy of materials, nonlinear elasticity, visco-elasticity, and visco-plasticity is lectured in the aspect of numerical analysis. Finally the implementation of such material laws into commercial FE code is given centered on the application of such material law and computational mechanics to material processing and mechanical behavior of materials.

445.694  진공장비와 계측제어 3-3-0
Vacuum Systems and Signal Measurement

Vacuum systems are used in research fields and industry to process/fabricate materials and to acquire signals stimulated by the external energy source. Graduate will meet any form of vacuum system while handling materials even though it is very simple form of vacuum. Students will go through from vacuum system build-up to computer-aided data collection/feedback control of process. The course will be divided into 3 parts. In the first step, students will acquire theoretical background of vacuum system and related polymer systems.
parameters/materials, and then they will have a chance to assemble vacuum systems by themselves. In the second part of the course, they will learn basic conversion techniques of various signals generated inside vacuum, such as light, electrons, and x-rays. Basic circuit design will be explained and signal conversion will be demonstrated. In the last part of the course, data collection system will be introduced and tasks will be given to measure actual measurement/feedback of electron emission from the system built in the first part of the course.

445.696 재료산업과 기술혁신 3-3-0

Materials Industry and Technology Innovation

본 과목을 통하여 재료연구의 첨단에 있는 다양한 재료관련 문제를 해결하기 위한 소재 선정 및 신공정 설계를 수행할 수 있는 능력을 갖추도록 한다.

445.699 재료상형평 특론 3-3-0

Phase Equilibria in Materials

본 교과목에서는 재료의 상형평에 관한 기초적인 개념과 다양한 상형평 과정을 포함하는 2 원 상태도의 계계적인 이해를 기초로 하여, 궁극적으로 시스템의 상태도에 대한 내용을 쉽게 다루고자 한다. 이를 위하여 본 과목은 단순히 열역학적 균형과 비균형 상태에서의 상태도를 이해할 수 있도록 한다. 특히, 3 원계와 4 원계 할포 시스템에서 열역학적 인자의 변화에 따라 상태도 상형평 과정 및 상작능의 관계에 대한 계계적인 고찰을 통하여 다양한 상태도에 대한 이해를 유도하고자 한다. 본 과목을 통하여 재료연구의 첨단에 있는 다양한 재료관련 문제를 해결하기 위한 소재 선정 및 신공정 설계를 수행함으로써 다양한 상태도를 적극적으로 활용할 수 있는 능력을 배양할 수 있도록 시도한다.

This course provides the fundamental concepts and advanced understandings of phase equilibria in materials, including relationship of free energy to phase diagram. The course will address some kinetic and non-equilibrium concepts and some phenomenological discussions. In particular, phase and composition determinations in ternary and quaternary systems, relationship between phase diagrams and thermodynamic data, and cooling paths during cooling of the ternary melts will be covered. This course can provide a working knowledge of how to construct and read phase diagrams and use them to solve problems involving materials and process design.
445.703 Materials Science for Advanced Batteries

This course deals with electrochemistry based on materials science and further expands to the understanding of the operation mechanism of advanced batteries. While conventional electrochemistry focuses on the surface reactions, more discussions are placed on the reaction inside the material and the relation with material thermodynamics.

445.707 Current Status of Structural Materials

This course deals with the current status of structural materials through the small size of group discussion. The suggested specific topics are chosen from the various state-of-the-art research activities in the area of structural materials including metal, ceramics, and polymers.

445.704 Current Status of Bio and Integrated Materials

This course deals with the current status of bio and integrated materials through the small size of group discussion. The suggested specific topics are chosen from the various state-of-the-art research activities in the area of bio and integrated materials including biochemistry, implantation, and hybrid materials.

445.705 Current Status of Electronic Materials

This course deals with the current status of electronic materials through the small size of group discussion. The suggested specific topics are chosen from the various state-of-the-art research activities in the area of electronic materials including display, semi-conductors, and organic electronics.

445.706 Current Status of Energy/Environmental Materials

This course deals with the current status of energy and environmental materials through the small size of group discussion. The suggested specific topics are chosen from the various state-of-the-art research activities in the area of energy and environmental materials including batteries, fuel cells, photovoltaic, and thermoelectric devices.
electronic materials such as electronic structure of molecules that evolved from atoms, exciton, and resonant energy transfer will be covered. The charge injection, transport, and recombination mechanism in organic light-emitting diodes, organic photovoltaic cells, and organic thin-film transistor based on organic materials will be studied in this course. Finally the applications of the component devices to flexible displays will be covered.

M1569.000200 고급응고학 3-3-0

Advanced Solidification

This course provides a critical review of the state of knowledge and understanding of the process of solidification, defined for this purpose as the discontinuous change of state from liquid to crystalline solid. In particular, this course is intended to provide an understanding of the physical processes that relate to solidification and to show how these processes combine to produce the phenomena observed in practical situations. An essential aim of many solidification processes is to obtain optimum properties in the resultant material. This course can provide a working knowledge of how the solidification principles can be utilized to produce structures with improved mechanical or physical properties, which then can be used to solve problems involving materials and process design.
4451.601 Theories of Structure of Materials

This course teaches the crystal structure and crystallography and is divided into three sections. The first section is on the crystal structure and describes how the simple metallic and complicated structures like ionic and covalent bonded structures are formed. The details of atomic structure of defects such as dislocations, twins, grain boundaries, and surface will be examined. The second section is the crystallography. After the introduction of crystallography, 14 Bravais lattice, and 230 space groups will be derived. Final section is the analysis of diffraction pattern. In this section, the basics of diffraction phenomena will be explained and the analysis of crystal structure by using x-ray, electron beam, and neutron beam will be studied. The analysis of crystal structure of the surface by using LEED (low energy electron diffraction) will be introduce.

4451.607 Application of Interface Phenomena to Semiconductor Devices

This course provides knowledge about the basic principles of solid-state electronics and the understanding of the operation principle, device structure and integration scheme of the various semiconductor devices is the prerequisite to utilize the newly developed or found materials' functionality. Therefore, in this course, the advanced understandings on semiconductor memory and logic devices and materials are offered. It will review the device integration principles, scaling rules, and current status of the technologies and problems. Fundamentals of logic devices and operations principles will be elucidated. The problems related to the scaling of the devices will be studied. Operation principles and scaling problems of DRAM, SRAM, NAND and NOR type flash memory devices will be discussed. New memory devices, such as FeRAM, MRAM, PCRAM and other resistive switching memory devices will also be reviewed. The basic operation principles and ultimate limitations of these new devices will be discussed and finally nanoelectronics concepts that may ultimately replace current microelectronics will be introduced.

4451.610A Composite Materials for Biomedical Applications

This course introduces application of biomedical materials, mainly covering biomedical implants. Materials for biomedical implants should have good mechanical properties as well as excellent biocompatibility. A variety of nanotechnologies are being developed to enhance the mechanical properties of ceramics and metals. Biocompatibility of the implant materials are also improved by hybridizing materials using those nanotechnologies. Another plausible approach to generate excellent biomedical materials is to coat with other materials through hybridization of organic and inorganic materials, we can fabricate implants with healing and regenerating capability. Accordingly, this course provides the foundation of design and application of advanced biomedical materials.

4451.611 Hybrid Materials for Energy Conversion and Storage

This course provides knowledge about the basic principles of the electrochemical responses and changes in metal, semiconductors, inorganic materials, organic molecules, macromolecule materials and their hybrid materials, and the ex-
Experimental procedures using the principles. On the basis of these knowledges, the methodologies, present and future conditions of applying the solar batteries, fuel cells, electric photochemistry, sensors, and semiconductor electrochemistry will be discussed.

**4451.614 유기반도체의 전기광학적 성질 3-3-0**

*Electrical and Optical Properties of Organic Semiconductors*

본문의 전자 구조의 이해에서 출발하여 전기적, 광학적 성질에 대하여 심도 있게 다룬다. 여기에는 물질상태의 생성과 소멸, 금속/유기물 및 유기물/유기물 계면, 전하의 주입과 이동, 전자와 정공의 제결합 동화, 전기발광다이오드, 트랜지스터, 태양 전지 등의 구조물리와 최근의 연구 동향에 대하여 소개한다.

Starting from the understanding of the electronic structure of conjugated molecules and molecular solids, electrical and optical properties of conjugated molecular solids and polymers will be covered in depth. Exciton generation and decay, metal/organic and organic/organic junctions, charge injection, transport and recombination are included. Device physics and recent research trend of organic optoelectronic devices such as organic light emitting diodes, organic thin film transistors, and organic photovoltaic cells will be introduced.

**4451.619 하이브리드 재료 특강 1 3-3-0**

*Topics in Hybrid Materials 1*

산업체와 연구소 등의 취득 재료 관련 연구 성과물에 대한 대학원생들의 이해를 돕기 위해 물리, 화학, 하이브리드 재료 과학, 하이브리드 재료 과학 분야의 핵심 전문가를 초빙하여 주제에 대한 기본 개념과 연구 성과, 연구 개발의 방향에 대해 심도 있게 강의한다.

This course discusses basic concepts and research trends of recent developments in hybrid materials science and engineering.
The purpose of Student Research Colloquium in Mechanical Engineering is for graduate students to demonstrate their ability to communicate background knowledge and to show understanding of a process of research or development projects, and to learn to convince the audience that you are able to work towards a solution based on systematic analysis. The structure of a Student Research Colloquium in Mechanical Engineering consists of the following steps, with the presentation of guest speakers or students: 1) to define the problem, 2) retrieve information effectively and assess existing approaches, 3) list your options and compare them, and 3) plan your strategy with justifications on the decisions or selections that you are making.

Robust Optimal Design Methodology

It is evaluated to be an excellent quality product when the functional variation of the product is minimized even if customers have been using it with the extreme conditions under the severe environment. Therefore, engineering designers have to find each optimal value of design parameters which are able to maintain robustly the best functional state under the severe environment. Therefore, engineering designers have to find each optimal value of design parameters which are able to maintain robustly the best functional state under the severe environment.

Advanced Gas Turbines

Advanced Mechanical Engineering Analysis

Advanced Topics in Mechanical Engineering 1

Advanced Gas Turbines

Advanced Gas Turbines

Advanced Mechanical Engineering Analysis

Advanced Topics in Mechanical Engineering 1

Advanced Topics in Mechanical Engineering 2

Advanced Topics in Mechanical Engineering 3

Advanced Gas Turbines

Advanced Gas Turbines

Advanced Gas Turbines

Advanced Gas Turbines

Advanced Gas Turbines

Advanced Gas Turbines
Advanced Topics in Mechanical Engineering

This course will examine various optimal design methodologies and the related numerical analysis methods. Various problems related to structural analysis, heat transfer and composite materials will be discussed in class. The fundamentals of statistical thermodynamics will be taught. The objective of this course is to develop capabilities of applying the fundamental theories to practical noise and vibration problems.

Numerical Analysis in Mechanical Engineering

Students initiate creative ideas, develop them to innovation, and practice start-up process. The creative ideas for starting companies are collected from results of other classes and researches in Mechanical Engineering as well as from the ideation process of this class. Students will practice patient search, patent application, and business planning. Experts in legal issues in start-up, capital investment, and marketing will deliver lectures and seminars. This is a team based-class, so each team will initiate and develop innovation, and selected teams will be encouraged to participate start-up competition.

In this course we will examine various optimal design methodologies and the related numerical analysis methods. Various problems related to structural analysis, heat transfer and composite materials will be discussed in class.

Innovation and Start-Up in Mechanical Engineering

Advanced Internal Combustion Engine

Advanced Thermodynamics

This course will extend the knowledge on classical thermodynamics to the graduate level and also introduce the fundamentals of statistical thermodynamics. We will examine macroscopic thermodynamic phenomena, analyze them in terms of both macroscopic and microscopic quantities and understand the relationship between them. Other tasks include the following: the reformulation of the basic principles of thermodynamics; the review of classical kinetic theory; working out the solutions of the Schrodinger equation for the modes of translation, rotation, vibration and others; application of these results to various cases; developing calculation methods for thermodynamic properties of gases and solids. This course will also provide a brief introduction to the principles and examples of irreversible processes.

In this course we will examine various optimal design methodologies and the related numerical analysis methods. Various problems related to structural analysis, heat transfer and composite materials will be discussed in class. The fundamentals of statistical thermodynamics will be taught. The objective of this course is to develop capabilities of applying the fundamental theories to practical noise and vibration problems.

General Thermodynamics

This course will extend the knowledge on classical thermodynamics to the graduate level and also introduce the fundamentals of statistical thermodynamics. We will examine macroscopic thermodynamic phenomena, analyze them in terms of both macroscopic and microscopic quantities and understand the relationship between them. Other tasks include the following: the reformulation of the basic principles of thermodynamics; the review of classical kinetic theory; working out the solutions of the Schrodinger equation for the modes of translation, rotation, vibration and others; application of these results to various cases; developing calculation methods for thermodynamic properties of gases and solids. This course will also provide a brief introduction to the principles and examples of irreversible processes.

In this course we will examine various optimal design methodologies and the related numerical analysis methods. Various problems related to structural analysis, heat transfer and composite materials will be discussed in class. The fundamentals of statistical thermodynamics will be taught. The objective of this course is to develop capabilities of applying the fundamental theories to practical noise and vibration problems.

In this course we will examine various optimal design methodologies and the related numerical analysis methods. Various problems related to structural analysis, heat transfer and composite materials will be discussed in class. The fundamentals of statistical thermodynamics will be taught. The objective of this course is to develop capabilities of applying the fundamental theories to practical noise and vibration problems.
Convective Heat and Mass Transfer

The course deals with analytical and experimental approaches to solve heat and mass transfer problems accompanying with fluid flow. It covers the transport mechanism of heat and mass and application to practical engineering problems. Topics include external and internal flow heat transfer, and natural convection.

Advanced Topics in Dynamics, Control and Robotics

The goal of this course is to teach students of fundamental and state-of-the-art advanced theoretical developments and results in the area of dynamics, control, and robotics, and to introduce important applications thereof.

Micro Fluid Mechanics

This course introduces the behavior of liquids and gases at micro and nano scales that forms the basis of micro/nano-fluidic technology. For theoretical understanding of the subject, we study the validity of continuum hypothesis, intermolecular and surface forces, capillary flows, contact line motion, and electrokinetic flows using the principles of classical fluid mechanics as well as modern physics. Introduction to microfluidic device fabrication, microliquid actuation and biological flows is made as the examples of the field’s applications.

Bio-MEMS

Bio-MEMS offers a unified treatment of optimization on finite- and infinite-dimensional vector spaces. The focus is on both the underlying mathematical theory and practical algorithms; The objective is to provide the student with the necessary intuition in selecting an appropriate optimization algorithm, to make sense of the results, and when necessary to customize the algorithm to exploit any special features of the problem. The course should be useful to any graduate student whose research involves optimization in some form and wishes to take advantage of as much as possible of the many existing optimization software. At the same time, the course offers a solid grounding in the tools of linear algebra, variational calculus, and functional analysis techniques relevant to optimization—this will enable the student to find analytic solutions when they exist, be able to rigorously prove optimality results, and enhance the ability to recognize any special features in a given optimization problem.

Radiation Heat Transfer

Radiation Heat Transfer will cover the following topics: the basic laws of thermal radiation; radiation properties of solids; radiant interchange properties of solids; radiant interchange among surfaces separated by a transparent media; non-gray surfaces; specularly reflecting surfaces; radiation properties of gases; radiant interchange through absorbing, emitting and scattering media; radiative equilibrium; combined radiation and conduction; combined radiation and convection; approximate methods of solution.
Control of Nonlinear Dynamic Systems

Feedback linearization. Sliding control.


Inviscid Flow

Tentative title. Incompressible fluid flow with boundary conditions. Navier-Stokes equations are solved numerically. Boundary conditions and initial conditions are discussed. The Navier-Stokes equations are used to study fluid flow problems such as Stokes flow, Couette flow, and Taylor-Couette flow.

Biologically Inspired Robotics

Biologically inspired robotics is a field that aims to develop robots that can mimic the functions and behaviors of living organisms. This involves studying the principles of biological systems and applying them to the design of robotic systems.

Biological principles include the use of sensors, the ability to learn and adapt, and the ability to respond to environmental changes. These principles can be used to develop robots that can navigate environments, interact with other robots or humans, and perform tasks that require intelligent decision-making.

The research in this field is interdisciplinary and involves collaboration between engineers, biologists, and computer scientists. The goal is to develop robots that can perform tasks in complex environments and handle unexpected situations.

Other topics covered in this course include fluid mechanics, thermodynamics, and control theory. These topics provide the necessary background for understanding the principles of biological systems and applying them to the design of robots.

The course will cover the following topics:

- **Fundamental properties of nonlinear systems.**
- **Feedback linearization methods including limit cycle nonlinear systems.**
- **Controller Design via Lyapunov methods.**
- **Biologically Inspired Robotics.**
- **Fluid and Thermal Systems.**
- **Control Systems.**
- **Molecular Biology.**
- **Artificial Intelligence.**

This course is designed to provide students with a comprehensive understanding of the principles and techniques used in the design of biologically inspired robots.
on finite element analysis based on the continuum theory.

**Thermofluid Measurement**

Thermofluid measurement is a technique that can be used to measure and analyze the behavior of fluids and gases. This includes the measurement of temperatures, pressures, and flow rates, as well as the analysis of fluid flow patterns and heat transfer processes.

**Particle and Aerosol Technology**

Particle and aerosol technology is a field that focuses on the study of particles and aerosols, which are tiny solid or liquid particles that are suspended in the air. This field includes the study of particle size, shape, and distribution, as well as the behavior of aerosols in the atmosphere.

**Cryogenic Engineering**

Cryogenic engineering is a branch of engineering that deals with the design and operation of systems that work at extremely low temperatures. This includes the design of cryogenic storage and transportation systems, as well as the development of new materials and technologies for cryogenic applications.

**Computational Nanomechanics**

Computational nanomechanics is a field that uses computational methods to study the behavior of materials at the nanoscale. This includes the study of the mechanical properties of materials, as well as the development of new computational techniques for simulating nanoscale phenomena.

**Computational Fluid Mechanics**

Computational fluid mechanics is a field that uses computational methods to study the behavior of fluids. This includes the design and analysis of systems that work with fluids, as well as the development of new computational techniques for simulating fluid flows and heat transfer processes.
M2794.006800 Instrumentation for Measurement Analysis and Control

Instrumentation for Measurement Analysis and Control

With the increasing demand for more accurate and efficient measurement systems, various techniques have been developed to address the challenges in industrial, scientific, and engineering applications. This course will introduce the fundamental concepts and methods of instrumentation, focusing on the design, implementation, and analysis of measurement systems. Topics include:

- Basic principles of measurement
- Instrumentation systems
- Signal conditioning and amplification
- Data acquisition and processing
- Error analysis and compensation
- Advanced measurement techniques

M2794.005300 Control Systems 1

Control Systems 1

Control Systems 1 is a comprehensive course that covers the fundamentals of control systems, including linear systems theory, state-space analysis, and feedback control. The course will provide students with a solid understanding of the mathematical tools and techniques used in the design and analysis of control systems. Key topics include:

- Linear systems theory
- State-space representations
- Controllability and observability
- Stability analysis
- Feedback control systems
- Design of control systems

M2794.005900 Control Systems 2

Control Systems 2

Control Systems 2 builds upon the fundamentals introduced in Control Systems 1, delving deeper into advanced topics in control system design and analysis. Students will gain expertise in:

- Advanced control techniques
- Adaptive control
- Robust control
- Nonlinear control
- Fault detection and isolation
- Model predictive control

M2794.006900 Design for Manufacturing

Design for Manufacturing

Design for Manufacturing (DFM) focuses on integrating manufacturing considerations into the product development process. The course aims to equip students with the knowledge and skills to design products that are manufacturable, cost-effective, and efficient. Key topics include:

- Product development lifecycle
- Manufacturing process design
- Material selection
- Cost estimation
- Sustainability considerations

M2794.007700 Smart Materials and Design

Smart Materials and Design

Smart materials are materials that can change their properties in response to external stimuli. This course explores the design and application of smart materials in various fields, including aerospace, automotive, and construction. Key topics include:

- Smart material classification
- Piezoelectricity and ferroelectricity
- Shape memory alloys
- Thermoelectricity
- Self-sensing and self-healing materials

Vibration

Vibration analysis is a critical aspect of engineering design, as it helps in assessing the dynamic behavior of structures and systems. This course will cover the fundamentals of vibration theory and its applications in various engineering disciplines. Topics include:

- Basic concepts of vibration
- Modal analysis
- Frequency response
- Vibration isolation and control

In summary, these courses provide a comprehensive overview of the essential concepts and techniques in instrumentation, control systems, manufacturing, and vibration. Students will gain the knowledge and skills necessary to design and analyze systems that meet the demands of today's engineering challenges.
imate method; the non-linear vibration analysis; the applications of the finite element method to vibration problems. This course will also cover various experimental techniques such as the random process and vibration analysis; digital signal process analysis; FFT algorithm; window function; experimental set-up; instrumentation; modal parameter identification from the modal testing data; frequency response function based substructuring synthesis.

**M2794.005800**  
Vehicle Dynamics and Control

Vehicle Dynamics and Control, focusing on modeling, design, and analysis of ground vehicles, is an integral part of vehicle engineering. This course will cover a broad range of topics, including: vehicle dynamics, control systems, and safety systems. Students will learn how to model and analyze vehicle dynamics using mathematical models and computational tools. They will also learn about vehicle control systems, including electronic control units (ECUs) and sensor feedback systems.

**M2794.005800**  
Computational Analysis of Plates and Shells

The course covers three important issues encountered in practical engineering fields: statistical data analysis, probabilistic engineering analysis and design, and Bayesian statistics. Probabilistic engineering analysis covers reliability and hazard functions, accelerated life testing, uncertainty propagation analysis, reliability analysis, and health monitoring and prognostics techniques. Probabilistic engineering design includes probability sensitivity analysis, response surface modeling, and advanced methodologies for reliability-based design optimization. Some health monitoring techniques are briefly introduced in the end.

**M2794.007800**  
Probabilistic Engineering Analysis and Design

Theory of Elasticity

The objective of this course is to provide an overview of the fundamental theories of computer graphics and CAD systems. Students will have lab classes to practice using the commercial CAD systems so as to develop application programs of their own in their term projects.

**M2794.006700**  
Computer Aided Design

The course will examine the theory and analysis of ground vehicle dynamics and vehicle control systems. Topics to be covered are: analysis and prediction of the dynamics of ground vehicles, models to analyze and predict vehicle behavior, vehicle stability control systems, intelligent vehicle systems for safety and assistance, and control theories for application to vehicle control. This course will also introduce technical trends in vehicle control systems.

**M2794.007400**  
Computational Analysis of Plates and Shells

**M2794.009300**  
Turbomachinery

**M2794.007500**  
Control Systems

**M2794.007600**  
Computer Graphics and CAD Systems

**M2794.007700**  
Advanced Topics in Engineering Statistics
for relatively thin structural model comparing to the 3 dimensional body. Deformation of the structure can be predicted by the equilibrium equation from the free-body diagram. In this lecture, variational principle is to be used in the systematic derivation of the governing equations including the large deformations. Also tensor notation is adopted to derive the compact form of the governing equations. Plate theories deal with the classical theory, first order and higher order shear deformation theories as well as von Karman non-linear theory. Shell theories include the deep shell theories to derive the Love theory. Exact and approximation methods of solution including the finite element method are discussed in detail. Furthermore, drawback and advantage of various computational analysis of plates and shells will be compared also.

M2794.011300 Dissertation Research

M2794.012300 Laser Diagnostics

Laser Diagnostics

Laser diagnostics is for measuring fluid properties without disturbing target flows. Theoretical backgrounds on the laser diagnostics and cutting-edge optical measurement methods will be introduced and discussed for helping students to develop their own diagnostics tools specialized for experimental investigations on high speed non-reacting/reacting/turbulent flows.

M2794.012400 Multiphase Flow

Multiphase Flow

This course is aimed to provide graduate students with a strong background on fundamental fluid mechanics the necessary understanding of the dynamics of multiphase flow to carry out research in their area of interest. Particular emphasis will be placed on bubble and particle dynamics in gas-liquid and solid-gas flows, respectively. Also, some specific problems like sediment transport and cavitation will be discussed. Starting with deriving basic governing equations in multiphase flows, subsequent topics will include bubble-induced turbulence, particle interactions with turbulence, preferential accumulation, cavitation, and bubble dynamics (breakup, collisions and coalescence).

M2794.012500 Precision Manufacturing Processes

Precision Manufacturing Processes

Precision Manufacturing Processes

Precision Manufacturing Processes

M2794.012600 Energy System Modeling

Energy System Modeling

Energy System Modeling

Energy System Modeling

M2794.012700 Precision Machine System Design

Precision Machine System Design

Precision Machine System Design

Precision Machine System Design

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actor systems, and design for vacuum processing system. Practical design cases and projects are assigned and demonstrated during the course.

M2794.012900 연소과학원론 3-3-0
Principles of Combustion Engineering

스로 저속가능한 화학적 에너지의 변환과정인 연소현상에 관련된 열화학, 연소 과정, 반응역학, 물질 이동/전달 이론에 대한 이해를 목표로 한다. 추가로, 단백질 연소현상에 대한 최근의 연구결과들을 소개하고, 과학적 응용에 필요한 결과들을 선정하여 접근적으로 분석 및 토론한다. 이론연습 강의로서 열역학, 유체역학 및 화학 관련 기초 학부과정 수준의 배경 지식은 필요하지만, 대부분의 필요한 기초 내용을 강의 중 요약 소개한다. 세부 강의 내용으로는 열화학 개론, 연소 과정, 연소 반응 역학, 연소 반응 중 전방 및 에너지 전달 현상, 물질 및 에너지 보존, 예혼합 연소 현상, 기초 단류 연소, 연소 응용, 추진 기초 등이 있다.

The primary goal of this course is to provide students with fundamental understanding of thermodynamics, combustion waves, reaction kinetics and transport theorem associated with the combustion phenomenon that is a self-sustainable process converting chemical energy into thermal energy. In addition, recent studies on turbulent combustion phenomena that utilize advanced diagnostics tools and broad backgrounds in turbulence and compressible fluid dynamics will be introduced and some selected cases will be intensively discussed. The theoretical lectures require undergraduate level fundamental backgrounds in thermodynamics, fluid mechanics and chemistry while most basic concepts will be introduced in the first part of the lecture. Sub-topics that will be covered in the class include thermochromy, combustion waves, chemical kinetics, mass/energy transportation, mass and energy conservation, premixed combustion, turbulent combustion basic, combustion applications, and propulsion basic.

M2794.013000 기계나노공정개론 3-3-0
Introduction to Mechanical Nanotech Processing

본 수업은 기계공학전공의 학생을 위한 나노과학을 소개하는 것을 목적으로 한다. 나노입자(nanoparticle), 나노와이어(nanowire), 나노튜브(nanotube), 나노베일(nanobelt) 등의 나노물질의 다양한 합성 방법들에 대해 고찰해보고, 최근기술에서 볼 수 있던 나노물질의 새로운 전기적, 화학적, 광학적, 기계적 특성들과 그 특성을 측정하는 방법들에 대해 알아보고 이해한다. 이러한 나노물질에 대한 이해를 바탕으로 어떻게 실제 유용한 기술자가 재해에 나서, 비효과 마이크로스템들에 응용할 수 있는지 그 실제 예시들과 작용 원리 등에 대해 알아본다.

This course is designed to introduce nanotechnology and processing to the mechanical engineering major student. This course will cover the 1) top-down & bottom-up synthesis of nanomaterials such as nanoparticles, nanowires, nanotubes, and nanobelts based on metal, metal oxide, semiconductors and organic materials, 2) various novel properties in optical, electrical, mechanical, chemical and magnetic aspects, and their characteristic methods, and finally 3) applications in electronics, renewable energies, and bioengineering fields, and their fundamental physics.

우주항공공학전공(Aerospace Engineering Major)
M2795.001600 우주항공공학 폴로컵림 1-1-0
Student Research Colloquium in Aerospace Engineering

본 세미나의 목표는 연구개발과정의 핵심 요소를 이해하며, 연구과제의 성공적인 완료에 이르기 위한 계획을 수립하고, 청중에게 알리고자 하는 지식을 잘 전달하고, 해결하고자 하는 문제에 대한 접근법을 설명하는 뉴さんに 자신의 수동적인 학습수에 습용능력과 연구로의 전환을 돕는다는 것이다. 세미나는 초청 연사의 강연과 수상작들의 참여를 통해 1) 해결하고자 하는 문제의 정의 및 중요성 정립, 2) 문헌 및 자료 조사와 기존의 기술의 평가 등을 통한 연구의 독창성 설명, 3) 접근 방법 나열/비교분석, 4) 해결 방안 선행 및 연구 추진 계획 수립으로 구성된다.

The purpose of the seminar is for graduate students to demonstrate her/his ability to communicate background knowledge and to show understanding of a process of research or development projects, and to learn to convince the audience that you are able to work towards a solution based on systematic analysis. The structure of a seminar consists of the following steps, with the presentation of guest speakers or students :1) to define the problem, 2) retrieve information effectively and assess existing approaches, 3) list your options and compare them, and 3) plan your strategy with justifications on the decisions or selections that you are making.

M2795.005100 고급공기역학 3-3-0
Advanced Aerodynamics

본 수업은 학부 교과과정을 통해 제공되는 유체역학, 항공역학, 압축성유체역학의 내용을 간단히 정리하고, 이를 바탕으로 심화 압축성유체역학과 기초적인 압축성 전산유체역학 내용으로 구성된다. 주요 내용은 다음과 같다. 1) 교과과정을 통해 제공되는 유체역학, 항공역학, 압축성유체역학의 내용의 간략한 정리와 심화 과정, 2) 압축성유체역학의 기본 개념 및 기초적인 전산유체역학의 개념을 설명하고, 3) 압축성 유체역학의 주요 개념과 기초적인 전산유체역학의 개념을 설명한다. 이 세미나는 심화 압축성유체역학과 기초적인 압축성 전산유체역학에 대한 이해를 돕기 위한 목적으로 제시된다.

The subject consists of advanced compressible fluid dynamics and fundamental computational fluid dynamics of compressible fluid. Fluid dynamics, aerodynamics and compressible fluid dynamics learned in undergraduate program will be briefly summarized. The above mentioned two parts of the subject forms the basis of high-speed advanced aerodynamics; hypersonic fluid dynamics, rarefied gas dynamics, and advanced computational fluid dynamics. Advanced compressible fluid dynamics covers unsteady compressible flow, linearized velocity potential equation, characteristic curve, and hypersonic flow without chemical reaction. Computational fluid dynamics covers concepts of finite volume method, finite difference method and finite element method and various types of numerical schemes through linear and non-linear transport equations as well as the stability, convergence and error analysis method of each scheme.
Advanced Combustion

In this course we will examine the combustion process of laminar diffusion and premixed flames based on the fundamentals of thermodynamics, aerodynamics and chemistry, and finally acquire the optimum design problems of highly efficient clean combustion systems (Advanced Combustion 1). Also, we will examine the turbulent flame, spray characteristics and combustion instability occurring in gas turbine and liquid rocket engines. To analyze the characteristics and structures of turbulent flame, we will cover Borighi’s Diagram, turbulent jet flame, theoretical approach of similarity, spray theory, kinds and characteristics of injection system, combustion instability (Advanced Combustion 2).

Advanced Computational Fluid Dynamics

This course will deal with the methods and concepts of the numerical analysis of fluid flow governed by nonlinear systems of partial differential equations. We will study the basic discretization method and the relevant stability analysis, and extend them to the Euler and Navier-Stokes equations. Within the framework of the finite volume method, the numerical techniques to deal with nonlinear convective fluxes and time integration term will be covered. On top of it, the 1-D and 2-D numerical codes are programmed, and applied to various test flow problems to examine the physical/numerical aspects of computational modelling.

Advanced Viscous Fluid Flows

In this course we will examine the turbulence process of laminar diffusion and premixed flames based on the fundamentals of thermodynamics, aerodynamics and chemistry, and finally acquire the optimum design problems of highly efficient clean combustion systems (Advanced Combustion 1). Also, we will examine the turbulent flame, spray characteristics and combustion instability occurring in gas turbine and liquid rocket engines. To analyze the characteristics and structures of turbulent flame, we will cover Borighi’s Diagram, turbulent jet flame, theoretical approach of similarity, spray theory, kinds and characteristics of injection system, combustion instability (Advanced Combustion 2).

Advanced Filtering Theory

In this course we will examine the turbulence process of laminar diffusion and premixed flames based on the fundamentals of thermodynamics, aerodynamics and chemistry, and finally acquire the optimum design problems of highly efficient clean combustion systems (Advanced Combustion 1). Also, we will examine the turbulent flame, spray characteristics and combustion instability occurring in gas turbine and liquid rocket engines. To analyze the characteristics and structures of turbulent flame, we will cover Borighi’s Diagram, turbulent jet flame, theoretical approach of similarity, spray theory, kinds and characteristics of injection system, combustion instability (Advanced Combustion 2).

Advanced Theory on Vehicle Dynamics and Control

In this course we will examine the turbulence process of laminar diffusion and premixed flames based on the fundamentals of thermodynamics, aerodynamics and chemistry, and finally acquire the optimum design problems of highly efficient clean combustion systems (Advanced Combustion 1). Also, we will examine the turbulent flame, spray characteristics and combustion instability occurring in gas turbine and liquid rocket engines. To analyze the characteristics and structures of turbulent flame, we will cover Borighi’s Diagram, turbulent jet flame, theoretical approach of similarity, spray theory, kinds and characteristics of injection system, combustion instability (Advanced Combustion 2).
This course will introduce the basic principles underlying the key avionic systems in a modern aircraft and satellite for mechanical and aerospace engineers. From data bus system for the interface between the flight control computer and the input/output devices, to system-level avionics such as inertial sensor based navigation, satellite based navigation, air data system, and flight control system (FCS) will be addressed. Finally, the practical navigation system will be analyzed by using the experimental data.

M2795.006600 공력열화학 3-3-0
Aerothermochemistry

This course begins with the basics of reactive gas dynamics and fundamental thermodynamics as widely used in general engineering applications. The next large block of lectures covers deflagration to detonation physics with practical aspects of modern high energy system design. Recent advances in responses of condensed matter, thermal explosion, shock-to-detonation, chemical propulsion, and high energy laser system are introduced.

M2795.005900 공력탄성학 3-3-0
Aeroelasticity

대기권을 비행하고 있는 항공기 구조물에는 광학성, 탄성성, 그리고 공학적 성능을 갖추고 있다. 이들 간의 상호작용을 통해 비행체 구조물의 안정성 및 응답 특성이 더욱 복잡해지게 된다. 이는 이들의 상호작용을 해석하는 기법을 알아보고, 대기권의 특성과 그에 따른 기계적 반응에 대응하는 방법을 소개한다. 특히 이러한 현상의 해석 및 제어는 공학의 핵심 기술이다.
Upon aircraft structures, in an atmospheric flight, inertial, elastic, and aerodynamic loads will act, and a unique behavior will occur by an interaction among these loads. This may induce static and dynamic instability called “divergence” and “flutter.” In this class, an analytical methodology to estimate such loads will be treated and phenomena unique to fixed, rotary wing aircrafts and turbine engines. Also, an effort to alleviate these problems based on control methodologies will be introduced.
대학원(Graduate School)

∴기계항공공학부(Department of Mechanical and Aerospace Engineering)

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The course is aimed to give an overview of numerically
handling of reacting flows and related engineering problems.
The emphasis is on the close relationship between the modeling of reacting flows and the numerical methods that are
used for solving the mathematical problem.
M2795.005800

판과 쉘 역학

3-3-0

Theory of Plates and Shells

판과 쉘 역학은 2차원 표면에 대한 변형전 상태에서의 곡률 존
재 여부에 따르며, 3차원 구조물과 비교하여 볼 때 두께가 상대적
으로 얇은 구조 모델에 적용할 수 있도록 정립되었다. 하중에 대
한 변형은 자유물체도에 따라 평형방정식으로부터 구할 수도 있으
나, 구조물의 대변형까지 체계적으로 다루기 위해서 변분 원리를
적용하기로 한다. 아울러 일반적인 수식화에 따르는 수식의 복잡
성을 극복하기 위하여 Tensor notation을 사용할 것이다. 판이론
으로는 고전적인 이론, 1차 및 고차 전단변형 이론과 von
Karman의 비선형이론을 다루고, 쉘이론으로는 deep shell 이론으
로부터 Love의 방정식을 유도한다. 해석방법으로는 엄밀 해법과
유한요소법등의 여러 가지 근사해법들을 다루며, 아울러 판 및 쉘
이론들의 장단점에 대하여 논의한다.
Theory of Plates and Shells are developed with or without
including the curvature of the 2 dimensional undeformed surface of the structures, and may be acceptable for relatively
thin structural model comparing to the 3 dimensional body.
Deformation of the structure can be predicted by the equilibrium equation from the free-body diagram. In this lecture,
variational principle is to be used in the systematic derivation of the governing equations including the large
deformations. Also tensor notation is adopted to derive the
compact form of the governing equations. Plate theories deal
with the classical theory, first order and higher order shear
deformation theories as well as von Karman nonlinear
theory. Shell theories include the deep shell theories to derive the Love theory. Exact and approximation methods of
solution including the finite element method are discussed in
detail. Furthermore, drawback and advantage of various plate
and shell theories will be compared also.
★

M2795.007900

항공우주문제윤강 3-3-0
Seminar in Aerospace Engineering

항공우주공학 분야의 여러 가지 실제문제에 대한 심도 있는 접
근을 통해 보다 어려운 실전적 해결능력을 배양한다.
The aim of this course is to enhance the ability to solve
difficult problems in aerospace engineering. To achieve this
aim, we will examine the methods of approach to various
practical problems in the field of aerospace engineering.
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M2795.007800

항공우주문제특강 3-3-0

M2795.007300

항공우주추정론 3-3-0
Aerospace Estimation

확률이론의 기초를 이해하고 이를 바탕으로 상태변수를 추정하
는 원리를 배운다. 또한 이를 비행체 제어에 응용한다. 칼만필터에
대한 상세한 식을 유도하고 그 특성을 연구한다. 비선형 시스템에
적용될 수 있는 Extended 칼만필터를 유도하고 실제 비행기나 인
공위성에 응용한 예를 다룬다.
In this course we will study the fundamentals of estimation theory and the principles of state variable estimation and
apply them to flight control. We will derive a detailed
Karlman Filter equation and study its properties. In addition,
we will derive an extended Karlman Filter equation applicable to non-linear system and examine the examples of its
applications to real aircraft and satellite.
M2795.006100

항공유한요소법 3-3-0
Finite Element Method in Aerospace
Engineering

본 과목에서는 유한요소의 기본을 간단히 복습하고, 항공우주구
조물에 널리 쓰이는 얇은 판이나 쉘해석을 위한 유한요소에 대해
알아본다. 특히, 얇은 판이나 쉘구조물 해석시 발생하는 잠김현상
의 특성에 대하여 알아보고, 잠김현상을 억제할 수 있는 최신 유
한요소를 살펴본다.
This course will review the basics of the FEM and examine the FEM for the analysis of thin plates and shells generally used in aerospace structures. We will give special attention to the property of locking that occurs when analyzing
thin plates or shell structures, and explore a new FEM to restrain the locking.
M2795.007200

항공응용최적제어론 3-3-0
Applied Aerospace Optimal Control

본 과목에서는 항공기 유도제어기의 설계 및 최적궤적 설계를
위한 최적화기법을 다룬다. 우선, 변분법을 이용한 최적해의 필수
조건을 유도하고, 제어시스템 설계를 위한 형태로 공식화한다. 최
적제어이론의 대표적인 문제인 최단시간 제어기법, 최소 연료소모
제어기법 등을 다룬다. 최적제어문제의 일반적인 유형인 두점경계
치 문제에 대한 수치해법을 연구하고, 항공기/발사체의 최적궤적을
설계하기 위한 문제에 적용한다.
In this course we will study the optimization theory and
algorithm for optimal trajectory design. We will derive the
necessary conditions for optimal solution via calculus of
vibration. Then we will examine the problems of minimum
time control and minimum fuel, and also study various numerical methods to solve two point boundary value problems
and apply them to design problems of aircraft and launcer
trajectory optimization.

Topics in Aerospace Engineering

현재, 항공우주분야에서 이슈화되어 있는 Topic에 대해서 발표
를 통한 intensive한 수업을 진행한다. 분야는 공기역학, 공력소음,
항공기 구조, 추진, 항공기 제어, 인공위성 등을 폭넓게 다룬다.
In this course students will make individual presentations
on the following topics in aerospace engineering: aerodynamics; aeroacoustics, aircraft structures; propulsion; the control of aircraft; satellite.

M2795.006900

항공제어유도론 3-3-0
Theory of Flight Vehicle Guidance and
Control

항공기의 유도제어시스템 설계를 위한 기본원리를 다룬다. 선형
시스템의 가제어성, 가관측성, 안정성 등 선형제어이론의 기본원리
를 학습한다. 그리고 항공우주제어시스템 설계에 많이 사용되는
고유공간 지정법을 이용한 제어기 설계기법, 선형 최적제어이론
및 출력제어를 이용한 최적제어기 설계기법, 그리고 모델추종 제

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このコースでは、主に以下のトピックを扱う予定である。

1. 稀薄気体動力学
   - 超弦および次弦の動力学
   - 连続体力学と稀薄気体力学の比較

2. 高速飛行システム
   - 航空機の動力学
   - 飛行性能の解析

3. 振動および音響
   - エアロダイナミック不安定
   - 音響解析

4. ロータシステム
   - ロータの動力学
   - ロータの騒音解析

5. 高次 controle
   - 高次制御の理論
   - 量子制御の原理

6. 宇宙環境テスト
   - 宇宙環境での実験計画の作成
   - 宇宙環境での実験の評価

7. 対流環境下的設計
   - 対流環境下的設計の理論
   - 対流環境下的設計の実践

このコースは、航空工学と宇宙工学の両分野で基礎的な知識を学ぶことができる。
This course will introduce the properties of aerospace structures and its materials which expose an extreme environment while cruising through the space. It will cover necessary properties of aerospace structures and relations to its materials. We will also explain the engineering processes of various materials and its chemical, mechanical, thermal, optical and electrical properties.

This course will introduce the basic principles of electrical and electronic engineering and the general ideas underlying the key avionic systems in a space vehicle. From data bus system for the interface between the flight control computer and the input/output devices, to system-level avionics such as inertia sensor based navigation, satellite based navigation, air data system, and flight control system (FCS) will be addressed.

By examining various launch vehicles in history, the development aspect of launch vehicles are learned. Then, based on this, the development strategies of future launch vehicles are discussed. And the concept, stages and components of launch vehicle system are investigated. Modeling methods for analysis of each stage are introduced and the analysis of launch vehicle system are investigated. Modeling methods for the interface between the flight control computer and the input/output devices, to system-level avionics such as inertia sensor based navigation, satellite based navigation, air data system, and flight control system (FCS) will be addressed.

By examining nano materials used in aerospace field, the characteristics of the movement of the space vehicle and orbit change of the vehicle are investigated. Application of orbit equations to space vehicle model is conducted. Thus, the space orbit dynamics is better understood comprehensively.

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By examining nano materials used in aerospace field, the characteristics of the movement of the space vehicle and orbit change of the vehicle are investigated. Application of orbit equations to space vehicle model is conducted. Thus, the space orbit dynamics is better understood comprehensively.
우주위험을 지원 주변의 우주환경이 인간의 우주활동에 미치는 부정적인 영향을 총체적으로 밝히는 용도. 원하는 우주위험, 원자핵의 자살, 운석과 소행성, 태양풍 등 우주의 여러 가지 잠재 위험에 대해 학습한다. 그리고 이러한 잠재 위험에 대응하기 위한 방법과 위험요소 제거 방법에 대해 토의한다.

Space Hazard is the term referring to the negative impact of the space environment around the Earth on human beings and human space activities. Various potential hazards in the space such as satellite space wreckage, ground falling of space objects, meteorites, and asteroids, etc. are covered. In addition, plans handling the potential hazards and the ways to remove the risk factors are discussed.

재진입 동역학 3-3-0

Reentry Dynamics

대기권 재진입 시 발생되는 고온, 고압의 상황에서는 비행체의 거동 해석 시 비행체 주위의 화학반응을 고려해야 한다. 본 교과 목표에서는 재진입 비행체 주위의 화학반응을 포함한 운동방정식을 유도 및 해석한다. 그리고 재진입 비행체의 안정성, 공력, 일정도 등을 분석하는 방법에 대하여 학습한다.

The chemical reaction around vehicle should be considered in reentry dynamics, dealing with the movement of vehicles in high temperature and high pressure during reentry process. Derivation of the equations of motion including the chemical reaction and analysis of reentering vehicle using the equations are treated. Then, Methods to analyze the stability, aerodynamics, thermal conductivity, and etc. are covered.

복합재료역학 3-3-0

Mechanics of Composite Materials

복합재료는 높은 비강성, 비강도, 감동성을 지니고 있음 뿐만 아니라 무식과 피복에 대한 도수하여 항공기 구조용 재료로 많이 사용되고 있다. 이 강의는 미소역학이론에 의한 탄성계수 결정, 직교 이방성 laminae 해석, 고전적 적층 이론, 적층판 해석, 다양한 복합재료의 과학론, 수치 해석법 등에 이르기까지 복합 재료 역학의 이론적 기초와 최신 응용을 포함하여 스프리는 내용으로 한다. 복합재료 역학이론을 바탕으로 복합 적층판의 패, 핀중성함과 진동 현상에 대한 실험으로써 공학적 유용을 위한 이론을 논의하고 앞으로 얻을 수 있는 역학적 해를 제공한다. 학생들에게 전방향을 제공하고자 하는 학생들에게 전방향을 제공한다.

Composite material has been used for aircraft structural materials due to its high specific modulus and strength, high damping ratio, and high resistance to corrosion and fatigue. This course will deal with determination of effective moduli using micromechanics theory, analysis of orthotropic laminae, classical lamination theory, analysis of laminate plates, various failure criteria, and numerical analysis methods, etc. to introduce fundamental mechanics theories for composite materials and recent applications. On top of the fundamental mechanics theories, overviews of bending, buckling and vibration behavior of composite materials will also introduce engineering applications of composite materials, and present perspectives to students who major in structural mechanics.

우주시스템 공학 실험 3-1-4

Space System Engineering Lab.

본 수업은 산학연 연계 실험형 수업으로, 실험 연계 실험을 통해 인공위성 및 산업체 작업장을 늮이는 것을 목표로 한다. 수업의 기본 구성은 교과에서 이론 강의 및 실험 설계 수업을 진행하고, 인공위성 및 산업체 실험과 관련된 실험설계를 이루어진다. 이와 같은 교과에서는 기존에 배운 우주시스템 지식들을 복습하고, 실험 연계를 위한 기초를 마련한다. 시스템 설계 수업에서는 실험 정립을 위한 설계 및 해석 기법을 강화하며 개발한 시스템의 파괴적 및 기초적인 시스템 설계를 수행한다. 실험설계에서는 실시간 인공위성 및 산업체 현장을 방문하여 앞서 습득한 이론 및 설계 기법을 바탕으로 실험 장비 및 설비의 기능과 활용 방법을 학습하고 실험/실습을 진행한다. 최종적으로, 강의 기간 동안 학습한 이론, 기법 등을 요약 및 정리하고, 수행한 실험/실습 내용을 발표한다.

This is a practical laboratory course connecting industry, university and institute which aims to enhance the adaptability in institute and/or industry. The course is composed of in-class lectures of theories and system design following experiment/practice in institute and/or industry. In theoretical lectures, basic knowledge of space system is reviewed in the view of field practice. In system design lectures, design and analysis methodologies for field application will be addressed with case study of developed system and basic system design exercise. Experiment/practice will take place in institute and/or industry. Functions and application of experimental instruments and facilities will be studied and practice will be carried out based on the previously learned theories and methodologies in the course. In the end, presentations that summarize theories, methodologies and experiment/practice will be made.

우주시스템 현장실무응용 3-0-6

Field Application of Space System

본 수업은 현장 설비를 직접 체험하는 수업으로, 현장 설비의 이해도를 높이고 익습함을 목표로 한다. 수업의 진행은 기존의 강의를 통해 습득한 우주시스템 기초지식과 응용지식이 실현 연구소 및 산업현장의 실험에서 어떻게 적용되는지 이해하기 위함. 현장설비 및 전문가의 기술과 경험을 활용해 고전적 및 현장적 문제를 해결하기 위한 기법을 배우며, 전문가 및 전문가의 경험을 바탕으로, 분야에 따라 그 밑의 문제를 토대로 문제의 개선 방안과 해결 방안을 토대로 문제를 재해석하고 그 결과를 바탕으로 문제의 개선방안을 제시한다. 최종적으로, 강의 기간 동안 학습한 문제를 요약 및 정리하고, 도출한 개선 기법과 수행 과정을 발표한다.

This is a course experiencing the fieldwork which aims at understanding and acclimatizing of it. The course will be progressed in the institute and/or industry to see how basic and applied knowledge of space system obtained in-class lecture are used practically. The course is composed of going through analysing problem, improvement planning, solving problem of on going work in the institute and/or industry. Analysing in site problem based on the existing knowledge will be carried out. Improvement planning will be made based on the result of problem analysis. The solution of the problem will be sought diversely founded on the previous steps. The solution will be applied to solved the in site
problem and the validity of the result will be evaluated following modification. In the end, presentations that summarize the experienced practical problem and the way of solving it will be made.

**M2795.010400 우주비행체 설계 및 실습 3-1-4**

**Spacecraft Design**

In this course, spacecraft design is covered. The topics include spacecraft design concepts, launch vehicle design, space mission operations, and risk analysis. The course also covers spacecraft architecture and space mission geometry. Design topics include mission analysis, spacecraft systems engineering, and cost analysis.

**M2795.010500 항공우주시스템공학 3-3-0**

**Aerospace System Engineering**

This course deals with the design of space missions. The topics include spacecraft architecture, space mission design concepts, and space mission geometry. The course also covers spacecraft design methods and design methodologies for orbit and spacecraft subsystems.

**Nano/Bio Fusion Systems**

This course deals with the design of spacecraft architecture and space mission geometry. The course also covers spacecraft design methods and design methodologies for orbit and spacecraft subsystems.
4461.550 Seminar on The Multiscale Mechanical System Design 1

This course is designed to explore special topics in Multiscale mechanical system. Specialists from industries and domestic/foreign universities will visit to hold seminars on the newly developed Multiscale mechanical system.

4461.551 Seminar on The Multiscale Mechanical System Design 2

This course is designed to explore special topics in Multiscale mechanical system. Specialists from industries and domestic/foreign universities will visit to hold seminars on design and manufacturing of the newly developed Multiscale mechanical system.

4461.526 Fundamentals of Multiscale Physical Devises

This course is designed to explore special topics in Multiscale mechanical system. Specialists from industries and domestic/foreign universities will visit to hold seminars on the newly developed Multiscale mechanical system.
frequency-dependent wave propagation phenomena. After learning basic wave phenomena in infinite and semi-infinite elastic media, students will study various guided waves such as the bending waves based on the Euler and Timoshenko beam theories, the Lamb and shear-horizontal waves in plates and the Pochhammer-Chree waves in cylinders. Besides, recent techniques to manipulate wave propagation characteristics will be covered.
457.511 Theory of Structural Optimization

This course deals with the mathematical definition and numerical solutions of various optimal design problems-linear, nonlinear and unconstrained/constrained problems. It also covers the practical applications of optimization.

457.512 Theory of Plates and Shells

This course introduces the classical theory about mathematical modeling and analysis method for plate and shell structures. In the theory of plate, mathematical modeling and various analysis techniques for the exact solutions are dealt with, and the class students are drilled in analysis of various type of plate structures. The theory of shell consists of mathematical models for basic shell structure such as cylindrical shell and solution methods for shell structure analysis through computer-based finite element method.

457.514A Offshore Structures Engineering

This course addresses the linear and nonlinear dynamic responses of structures subjected to earthquake ground motions will be investigated. Then the design methods and procedures to resist earthquake actions will be studied. To this end, the earthquake mechanism will be explained in terms of tectonic motion and generation and propagation of seismic waves. Characteristics of ground shaking due to the seismic waves will be identified. The dynamic responses of structures subjected to the earthquake ground motions will be studied in terms of response spectrum. These will lead to the concept of design spectrum. The analysis procedures for the estimation of earthquake response of structures will be studied. Then students will learn how to design structures such as bridges and dams to resist earthquake loads. The estimation procedure and visualization of the earthquake damage distribution, both physical and nonphysical, to the socio-economic system will be explained. Finally, the latest policy will be introduced that intends to limit the overall damage level to socio-economic system within the predetermined level that will ensure the timely recovery of the system from the damage.

457.516 Dynamics of Structures

In this course, the students will learn how to model, analyze and design offshore structures that are subjected to strong earthquake loading. Offshore structures will be represented as coupled fluid-structure-soil interaction systems. Firstly, the combined effects of winds, waves, tides and earthquake on the fluid-structure-soil system will be investigated. Modeling of load effects will be described in both deterministic and stochastic approaches. Mechanical modeling of the fluid-structure-soil systems will be studied but emphasis will be placed on the substructure including foundation. Students will learn how to quantify dynamic loads, how to analyse earthquake responses in both stochastic and deterministic ways, and how to determine the design quantities. Design procedures of typical structures will be studied step by step. Finally, construction practices of large offshore structures will be reviewed in connection with earth-quake design and analysis.
Advanced Sustainable Transportation

This course deals with theories and techniques of operations of transportation facilities and systems. The topics include trip generation, trip analysis, mode choice and trip assignment.

This course analyzes and organizes the numerical models and algorithms related to trip generation, trip analysis, mode choice and trip assignment. It reviews the models and computational techniques for the optimization of transportation travel demand. It reviews the models related to trip generation, trip analysis, mode choice and trip assignment.

Advanced Transportation Operations

This course covers the design of public transportation systems, urban transportation networks, as well as techniques for fare and long-term term public transportation policies.

Public Transportation Engineering

This course discusses the design of public transportation systems, urban transportation networks, as well as techniques for fare and long-term public transportation policies.

Transportation Network Theory

This course examines the land-use planning which forms the base of travel demand estimation. It covers the concepts and backgrounds of transportation planning, focusing on the application of a model for a travel demand forecasting.

Transportation Operations Techniques

This course analyzes and organizes the numerical models and algorithms related to trip generation, trip analysis, mode choice and trip assignment. It reviews the models and computational techniques for the optimization of transportation travel demand. It reviews the models related to trip generation, trip analysis, mode choice and trip assignment.

Operations of Transportation Facilities

This course examines the land-use planning which forms the base of travel demand estimation. It covers the concepts and backgrounds of transportation planning, focusing on the application of a model for a travel demand forecasting.

Public Transportation Engineering

This course discusses the design of public transportation systems, urban transportation networks, as well as techniques for fare and long-term public transportation policies.
Urban and Regional Planning explores the purpose, practice, and theories of modern community planning for the promotion of social and economic well-being. The course provides a foundation to build upon for those who wish to pursue a career in planning, to study planning or related disciplines (including geography, law, political science) at the graduate level, or to serve as a member of a citizen planning board. Planning is an interdisciplinary field of study that incorporates the academic achievements of geography, history, environmental science, sociology, education, and urban studies among others. Regardless of one's choice of career, the class aims to provide students with knowledge that they can use as active citizens in their communities.

Urban and Environmental Economics

Urban and Regional Planning provides students with an overview of the principal actors, institutions, and innovations that drive these processes. It seeks the causes and consequences of new scales and forms of territorial restructuring in a steadily globalizing world, and seeks to assess the gains and losses that accompany these transformations. It also examines in greater depth themes such as policies, theories, and methodologies in research. As a result, the logical link between scientific concept, hypothesis, and theory as well as the investigation of theory will be explored to help students write well-organized scientific papers. This course will emphasize the purposes of applied research, program evaluation, policy analysis, and research ethics as well as the importance and limitations of theory and methodology in research.

Advanced Theory of Urban Renewal

Advanced Theory of Urban Renewal examines in greater depth themes such as policies, theoretical method, social conflict from the basic subject in theory of urban renewal. This course introduces physical characteristics and components of redevelopment districts, site survey, and negotiation with interest groups and also examines the relationship between cities, regional restructuring and globalization. It seeks the causes and consequences of new scales and forms of territorial restructuring in a steadily globalizing world, and seeks to assess the gains and losses (or trade-offs) that accompany these transformations. It also provides students with an overview of the principal actors, institutions, and innovations that drive these processes.

Advanced Photogrammetry

Advanced Photogrammetry provides perspective viewpoint of urban and global environment economics to our department's student who studies civil, construction and resource engineering. The class follows a seminar format, which involves a mixture of formal lectures, student presentations, and class discussion.
This course addresses the fundamental theories of photogrammetry and related techniques for applications in many fields. Topics covered are photo acquisitions, calibrations, stereoscopic views, 3-dimensional information extractions, digital elevation model, triangular irregular networks. In addition to the theoretical understandings, some practices using softcopy photogrammetric workstations will be executed.

457.538A 위치기반정보시스템 3-3-0
Location Based Information Systems

457.539 원격탐사특론 3-3-0
Advanced Remote Sensing

457.541 지리정보시스템특론 3-3-0
Advanced Geographic Information System

457.542 측량학특론 3-3-0
Advanced Surveying

457.544 위성영상판독 3-3-0
Satellite Image Interpretation

457.551 도시공간구조론 3-3-0
Formation of Urban Structure

457.555 도시설계특론 3-3-0
Advanced Urban Design

457.557 수자원시스템공학 3-3-0
Water Resources Systems Engineering

457.558 건설환경 전산유체역학 3-3-0
Computational Fluid Dynamics for Civil and Environmental Engineering
Fluid Dynamics

This course focuses on basic conservation law of fluid dynamics. It covers analytical solution to ideal fluid based on the complex number theory. Other specific topics will include the viscous fluid and boundary layer theories, as well as physical phenomena of turbulent flow and its fundamental theory.

Advanced Environmental Hydraulics

This course addresses turbulent buoyant jet, as well as submerged outfall system used as the wastewater and thermal discharge. The course also provides mathematical models to predict the mixing behavior of turbulent jet.

Open-Channel Hydraulics

This course provides the knowledge of open channel hydraulics, which is essential to the design of many hydraulic structures. Open channel hydraulics is the generic name for the study of flows and transport processes in open-channels, rivers, etc. which have a free surface. Flow conditions in open channels are complicated by the fact that the position of the free surface is likely to change with respect to time and space also by the fact that the depth of flow, the discharge, and the slope of the channel bottom and of the free surface are interdependent. At the conclusion of this subject students will understand the nature of flows, waves and processes associated with such flows in open channels, and be capable of solving a wide range of commonly encountered problems.

Coastal Environmental Hydraulics

This course addresses turbulent jet used as an active water quality control method. It focuses on the mixing theory of turbulent buoyant jet, as well as submerged outfall system used as the wastewater and thermal discharge. The course also provides mathematical models to predict the mixing behavior of turbulent jet.
problems.

457,568A  통계수문학 3-3-0

Statistical Hydrology

The hydrologic cycle consisting of precipitation, evaporation, and runoff is a typical nature example of uncertainty, which made hydrology use various statistical and probabilistic theories several hundreds years ago. The course introduces basic and applied theories of statistics and probability with hydrologic data. Some advanced techniques employed in hydrology such as L-moment, extreme distributions, regional flood frequency analysis, time series forecasting and simulation are dealt in details.

457,602  흙의 동력학 3-3-0

Soil Dynamics

This course deals with basic theories of vibration and wave propagation, along with lab test methods for obtaining dynamic properties of soil. It also covers prediction and estimation methods of liquefaction, as well as design procedures of the structures under dynamic loads.

457,603  지반공학특론 1 3-3-0

Advanced Geotechnical Engineering 1

This course deals with theories to analyze the interaction phenomena between shallow/deep foundations and soil. It covers methodologies for applying the theories to actual design or construction.

457,604  지반공학특론 2 3-3-0

Advanced Geotechnical Engineering 2

This course deals with analysis theories on retaining structures, deep excavations, and slope analysis. It also covers methodologies for rational applications of the suggested analyses.
457.619 환경생명공학 및 실험 3-2-2
Environmental Biotechnology and Lab.

가수룩 심장에서 환경오염 문제를 과학적인 접근법으로 해결하기에는 이와 정도의 한계가 있어 보이며 이를 해결하기 위한 가장 좋은 대안 하나로서 미생물학적 자극을 환경공학 분야에 응용하여 새로운 용융기술을 개발하는 방안이 대두되고 있다. 따라서 본 과목의 목표는 환경공학 및 생물공학에 대한 기본적 개념을 확립시키고 나아가 생물공학에 접목시키는 새로운 연구방향을 모색하는 데 있다.

경공학 전공 대학원생들이 각자 필요로 하는 배경지식을 충실히 공학에 접목시킬 수 있는 새로운 연구방법을 모색하는 데 있다. 미생물학 및 생명공학에 대한 기본적 개념을 확립시키고 나아가 본 과목의 목표는 환경공학을 전공하는 대학원생들에게 환경공학에 대해 핵심적인 부분이다.

수질오염물질 3-3-0
Water Contaminants

하수 및 폐수, 자연수계에는 다양한 오염물질이 존재하며 이들 특성과 기반을 이해하는 것은 환경공학 기술 연구와 적용에 있어 핵심적 부분이다. 본 과목에서는 수질을 해석하는 오염물질의 종류와 그 특성을 이해하고 수처리사리 및 자연수계에 존재하는 오염물질의 거동을 결정하는 기초적인 분석, 형태의 변동, 반응, 혼합 및 분산 등에 대하여 학습한다. 또한, 유기화학적 방법론을 통하여 유기오염물질의 거동과 관련된 기초에 대한 이해하고 다양한 수환경에서 유기오염물질의 거동을 해석할 수 있도록 한다. 이러한 수질의 이론과 본 과목 및 본인 연구와 관련된 세부 주제 별로 학생들이 조사, 발표 및 토의를 실시하도록 하여 환경공학 전공 대학원생들이 각자 필요로 하는 배경지식을 충실히 학습할 수 있도록 한다.

Various contaminants exist in sewage, wastewater, and natural waters. Understanding the characteristics and fate of those contaminants is crucial for research and applications of environmental engineering approaches. In this course, students will study the types and the characteristics of substances that degrade water quality, and mechanisms that determine the fate of the substances including phase partitioning, mass transfer, reactions, mixing, and dispersion. Students will get an in-depth understanding of mechanisms related to the fate of organic contaminants through organic chemistry approaches and analyze the fate of the contaminants at various settings of water environments. In addition to the lecture given by the instructor, the students will study, present, and discuss about sub-topics relevant to the course as well as their own research in order to fulfill the needs on background knowledge for those who have different research interests.

457.621 생명학적 처리공정 3-3-0
Biological Processes in Environmental Engineering

자연현장 환경기술로서 생명학적 처리공정을 학습하며, 특히 생명학적 폐수처리공정을 중점적으로 다룬다. 생명학적 처리공정의 이론과 최근에 개발된 기술을 위함한 다양한 처리기술을 대상으로 공부하며, 생명학적 처리시설의 계획, 설계, 해석과 운영 및 관리방법에 관하여 학습한다. 생명학적 처리공정의 이해를 증진시키고 체계적인 해석을 추구하기 위하여 생화학반응따라서 본 과목의 목표는 환경공학을 전공하는 대학원생들에게 환경공학에 대해 핵심적인 부분이다.

Biological processes in nature and environmental engineering practices are covered in this lecture, and a strong emphasis is given to biological waste treatment processes. Theory of the biological processes is thoroughly studied and various applications including recently developed bio-technologies are examined. Planning, design, analysis, and operation/maintenance of the biological treatment facilities are dealt with in addition to the basic principles. Mathematical modelling including biochemical reaction and mass transport is also studied as a tool for better understanding and systematic analysis of the biological processes.
and biological mechanisms in soil. It also comprises the basic technologies for soil remediation, and more intensely focuses on the principles of bioremediation and its field application. In addition, basics on risk assessment will be addressed as a part of risk management, and methodology to apply risk assessment to establish reasonable cleanup goals in soil will be discussed.

**457.629A** Special Topics in Solid Waste Engineering

This course covers specific area in the field of waste management, for example, storage, collection, transfer/transport, treatments, disposes, and recycles. Non-technical issues such as regulations, policies, citizen’s participation can be addressed as a part of risk management, and methodology to apply risk assessment to establish reasonable cleanup goal in soil will be discussed.

**457.630** Sustainable Water Management

In this class, students will learn the composition and function of urban water infrastructure such as water supply, wastewater, and rainwater as well as the method and techniques and case study of sustainable water management. Students will understand the various water management policy and trend as well as learn how to criticize and advise the appropriate water management method. It will be possible to understand the way of living and water management methods in other countries. Such knowledge can help maintaining the clean environment and the solution for the water problems in other countries. In preparation for the future challenges such as climate change, energy crisis, and aging infrastructure, students will understand the concept of sustainability in water management, and the case study to apply the advanced technology will be focused.

**457.631A** Integrated Watershed Management

Integrated Watershed Management

457.631A 통합유역관리 3-3-0

Integrated Watershed Management

In this course, the theory and design method of physicochemical processes which are commonly used in water and wastewater treatment plants will be taught. The course will be divided into two parts: theoretical and practical. In the theoretical part, students will learn the basic concepts of physicochemical processes, including design and operation methods, to suggest solutions to existing problems. In the practical part, students will have the opportunity to apply the theoretical knowledge through hands-on exercises, lab experiments, and case studies. The course will provide a comprehensive understanding of the principles and applications of physicochemical processes in water and wastewater treatment.

**457.632** Physio-Chemical Treatment Process

In this class, the theory and design method of physicochemical processes which are commonly used in water and wastewater treatment plants will be taught. The course will be divided into two parts: theoretical and practical. In the theoretical part, students will learn the basic concepts of physicochemical processes, including design and operation methods, to suggest solutions to existing problems. In the practical part, students will have the opportunity to apply the theoretical knowledge through hands-on exercises, lab experiments, and case studies. The course will provide a comprehensive understanding of the principles and applications of physicochemical processes in water and wastewater treatment.

**457.635A** Transport·IT Convergence System

This course deals with various theories and technologies about traffic operation and information, centering around the ITS (intelligent transportation system).

**457.635A** 교통·IT융합시스템 3-3-0

Transportation · IT Convergence System

This course deals with various theories and technologies about traffic operation and information, centering around the ITS (intelligent transportation system).

**457.641A** Engineering Properties of Soils

This course deals with various theories and technologies about traffic operation and information, centering around the ITS (intelligent transportation system).

**457.641A** 흙의 역학시험 3-2-2

Engineering Properties of Soils

This course deals with various theories and technologies about traffic operation and information, centering around the ITS (intelligent transportation system).
Structural Random Vibrations

This class deals with entire processes of planning the site investigation, field testing, soil sampling and laboratory testing. Lecture provides all the methodologies based on relevant theories of soil mechanics, and by performing laboratory tests, students experience soil testing and grasp soil properties and reviews soil mechanics theory in more direct manner. Presenting research reports as a form of journal paper and system identification techniques to assess the dynamic properties of structures, reliability indices. Simulation based methods. Reliability sensitivity measures.

Advanced Bridge Engineering

457.644 고급교량공학 3-3-0

Advanced Structural Analysis

457.649 고급구조해석 3-3-0
Computer-aided-design in structural engineering is used as a tool for studying structural analysis and design. This course addresses the geometric elements, mathematical expressions of their relation with the numerical modeling matters. It deals with the general aspects of practical computer-aided-design in structural engineering. It also performs the linear and nonlinear stability analysis. Additionally, the course considers the non-linear material behavior as well as the code for structural analysis is develop.

457.650 Advanced Reinforced Concrete Design

This course reviews the basic principles of reinforced concrete design and covers topics not dealt with in a typical undergraduate course on reinforced concrete design, such as Introduction to limit analysis of structural concrete; Yield line theory for two-way slabs; Strut-and-tie models; Seismic design criteria; the basic design principles of prestressed concrete design.

457.651 Advanced Reinforced Concrete Mechanics

This course provides theoretical considerations of base rock such as classification of rock, strength, failure criterion. The course also addresses general engineering behavior such as interpretation of geologic structure and direction. The course also addresses general engineering behavior in structural engineering. It covers the in-situ analyses such as interpretation of geologic structure and direction.

457.652 Disaster and Risk Management

While the majority of curricula regarding concrete structures are directly relevant to design work, this course will deal with the special topics in reinforced concrete members which might be often encountered by graduate student of structure division, such as mechanical behavior of concrete including fracture mechanics, behavior under undercycled loading including concrete in compression, concrete in tension, bond between concrete and steel, confinement effect, and rebar buckling, behavior of RC members subjected to the combined actions of bending, axial load, shear, and torsion. In the latter part of course Introduction to finite element modeling of RC will be incorporated.
본 강좌는 주제별로 건설 프로젝트 관리의 핵심적 기술에 대해 논의하고, 건설 프로젝트 관리 과정에서 발생할 수 있는 리스크를 분석하여 대처하는 방안을 제시하는 방안을 제시한다.

### 457.655 물리수문학 3-3-0

**Physical Hydrology**

본 강좌는 건설, 수론, 수질, 수문학, 건설환경공학 등 전반적인 수문학적인 기술에 대해 강의하고, 수문학적 설계이론 등의 공학적 기법을 다룬다. 또한 기후변화, 대기, GIS 등 확장 이슈를 함께 배운다.

The course handles each component of the hydrologic cycle such as precipitation, evapotranspiration, infiltration, runoff, groundwater using earth science theory and covers engineering techniques such as unit hydrograph, hydrologic design theory. Students learn some recent issues in hydrology including climate change, radar, GIS.

### 457.656 건설리스크 관리 3-3-0

**Construction Risk Management**

건설 사업을 수행함에 있어, 사업관리 과정 중 발생하는 다양한 복잡한 리스크를 분석, 관리하는 것은 사업 성공에 직접적인 영향을 준다. 이 교과목은 계획, 설계, 시공, 유지보수에 이르는 건설사업 전 생애주기에서 발생 가능한 리스크를 이해, 분석하고, 이에 맞는 합리적인 의사결정, 대처, 관리방안을 제시하는 방안을 제공한다.

Managing a range of complicated risks during a construction project directly impacts on the level of project success. This course allows students to understand and analyze possible risk factors through the life cycle of a construction project (planning, design, construction, operation and maintenance) and propose strategic decisions and mitigating solutions by applying project management principles and best practices based on case studies.

### 457.657 건설환경 프로젝트 관리 3-3-0

**Civil and Environmental Project Management**

건설산업은 단순히 건물을 짓는 것이 아니라 삶의 본질적인 개발을 만드는 것으로 발전해 가고 있다. 이를 위해 환경문화공간 창조, 지속가능 녹색성장의 개념을 이해하는 것이 중요하다. 이 교과목은 건설환경 프로젝트 관리에 대한 핵심적 기술에 대해 논의하고, 건설 및 환경 설계 전문가와의 산학협동 세미나를 통해 건설산업 현장을 이해하며, 사업관리 과정의 핵심적인 관점이 이론적 관점으로부터 분석하여, 건설산업 발전 방안 및 건설 R&D의 방향을 제시한다.

The concept of construction has been changed from building infrastructure to creating foundation for human living. Thus, it is important for the construction for cultural and eco-friendly environment for human life. This course offers the experience of whole process for writing a technical paper for an international journal and a presentation for international conferences in the fields of civil and environmental engineering. All members of this class set up the own hypothesis and assertion for their on-going researches. For this, students try to argue own position based on the appropriate materials & inference. Today society demands the creative problem-solving & rational communicating ability. Satisfying this demand, this course aims to improve the ability of creativity, critical thinking & adequate expression through writing and presentation.

### 457.658 건설 IT 및 사용화 3-2-2

**Construction IT and Automation**

최근 건설 사업에서는 IT 기술을 접목한 지능형 사업관리 및 건설 자동화에 대한 그 중요성이 강조되고 있다. 이 교과목은 일반적인 건설 IT관련 기술 및 3차원 설계정보를 이용한 예산, 공정, 품질, 안전 관리 기술을 소개한다. 또한 이 강좌는 컴퓨터를 이용한 건설 공정 시뮬레이션 기술과 건설 자동화 이론 및 적용사례를 소개, 분석한다.

The importance of IT-based project management and construction automation have been emphasized in recent construction practices. This course introduces IT applications in construction and estimating, scheduling, quality and safety management techniques using 3D modeling technology. The course also introduces methods for computer simulation of construction processes and construction automation examples.
The objective of this course is for the students in the civil and environmental engineering to understand how the knowledges obtained in the school is applied in fields, to get ideas for research and development, and to enhance the motivation to studying. Before taking this course, at least 80 hours of field practice is required. The sites for field practice are provided and assigned by the professor in charge of this course. Students are asked to submit and present the internship report in class. Students are evaluated by the mentor at host industry or research institute.

## M1586.000400 특별강의 Global Issues on Water & Environments

The objective of this course is for the students in the civil and environmental engineering to understand how the knowledges obtained in the school is applied in fields, to get ideas for research and development, and to enhance the motivation to studying. Before taking this course, at least 80 hours of field practice is required. The sites for field practice are provided and assigned by the professor in charge of this course. Students are asked to submit and present the internship report in class. Students are evaluated by the mentor at host industry or research institute.

## M1586.000900 고급건설환경 프로젝트관리 세미나 3-3-0

### Advanced Built Environment Project Management Seminar

This course aims to deliver advanced project management skills regarding built environment. More specifically, the course selects one of the critical issues of the society and discuss problem solving approaches to resolve the selected issue. For instance, disaster management is the organization and management of resources and responsibilities for dealing with all humanitarian aspects of emergencies, in particular preparedness, response and recovery in order to lessen the impact of disasters. Thus, it is important to identify the causes of some well-known disasters (natural, man-made and projects) and reveal what can be learned by being able to think critically and analyse the issues. In summary this course targets to enhance students’ understanding that can be used to reach successful project management to overcome current social issues in built environment.

## M1586.001300 건설환경공학 산학협력 세미나 1-1-0

### Contemporary Seminar: Industry Issues in Civil and Environmental Engineering

This course aims to deliver advanced project management skills regarding built environment. More specifically, the course selects one of the critical issues of the society and discuss problem solving approaches to resolve the selected issue. For instance, disaster management is the organization and management of resources and responsibilities for dealing with all humanitarian aspects of emergencies, in particular preparedness, response and recovery in order to lessen the impact of disasters. Thus, it is important to identify the causes of some well-known disasters (natural, man-made and projects) and reveal what can be learned by being able to think critically and analyse the issues. In summary this course targets to enhance students’ understanding that can be used to reach successful project management to overcome current social issues in built environment.
The construction industry has played as a backbone for economic growth in Korea; the Korean economy ranked the 13th in 2014 GDP. The Korean construction industry also ranked the 6th in the global construction market earning with 66 billion dollars project contracts. In recent years, however, the construction investment in Korea has dropped due to industry structure changes and welfare-focused government policies and the international project success also shows at a standstill without continuous growth. The traditional construction paradigm to create demands through massive supplies needs to be renovated. In this circumstances, it is very important to face the problematic issues more objectively and make efforts to find practical solutions through the collaboration between industry and academia. This course aims to support students to better understand current issues in the construction industry and foster hand-on experiences through delivering invited talks of industry experts, field trips, and collaborative research discussion. The course selects a main topic every semester to meet the industry and research needs on time. Such field-oriented teaching will help students to balance civil engineering theories with practices and be trained as a new growth power that creates potential future values.

Material performance of concrete has been rapidly developing in construction industry. It ranges from normal strength concrete to high strength and high performance concrete. In this lecture, various types of high strength and high performance concrete will be covered. Particularly, the lecture will deal with basic material properties, mix-design proportion, durability, and structural design concept with actual examples in order for graduate students to equip deeper knowledge on high performance concrete.

Firstly, cement hydration reaction to achieve high strength or high performance is studied from cement chemistry perspective. Next, a key ingredient of superplastizier is introduced to help students to understand how to make the microstructure of cement paste denser. From the manufacturing process, basic material properties of high strength and high performance concrete will be covered including strength, stiffness, and various durability characteristics, especially compared to those of normal strength concrete. Lastly, design code for high performance concrete, which is still under development stage, will be introduced to broaden potential applications of high performance concrete in construction field.
Transport Phenomena

This course provides students the ability to derive and take advantage of transport equations of mass, heat, and momentum, especially for the case of analyzing phenomena mainly resulting from fluid transfer in chemical engineering. The course helps students understand the theory and techniques of microbial and animal cell cultures.

Advanced Chemical Reaction Engineering

This course deals with the chemical reaction engineering process system. It includes the stability of particle, coagulation, precipitation, disinfection, oxidation, and membrane technology, etc. In addition, the basic principle and application for modeling approach in water environment will be covered.

Bioorganic Chemistry

This course provides basic principles of the overall process of integrated circuits. This course focuses on chemical vapor deposition and plasma process including doping and lithography.

Molecular Thermodynamics

This course briefly provides basic knowledge of classic thermodynamics and statistical thermodynamics and has the objective to extend the theoretical basis about fluid properties known up to now. This course deals with phase equilibrium and fluid properties and compares with the pros and cons of various state equations, fugacity of gas mixture, fugacity of liquid mixture, solubility of gas in liquid, solubility of solid, and high pressure equilibrium one another.

Process Dynamics and Control

This course provides the information needed to analyze and design real chemical reactors. It includes the stability of particle, coagulation, precipitation, disinfection, oxidation, and membrane technology, etc. In addition, the basic principle and application for modeling approach in water environment will be covered.

Biological Reaction Engineering

This course provides basic principles of the overall process of integrated circuits. This course focuses on chemical vapor deposition and plasma process including doping and lithography.

Advanced Environmental Engineering

This course deals with the chemical reaction engineering process system. It includes the stability of particle, coagulation, precipitation, disinfection, oxidation, and membrane technology, etc. In addition, the basic principle and application for modeling approach in water environment will be covered.
This course provides the methods of analyzing and designing control system based upon the understanding of the mathematical expressions about physical and chemical phenomena and the structures and characteristics of chemical processes.

458.605 Chemical Engineering Mathematics

- This course provides basically mathematical background required to complete graduate courses and to achieve the academic degree. This course deals with theories, solutions and applications of linear algebraic equations and partial differential equations in a large extent. This course also gives fundamental definitions of statistics dynamics, AES, ESCA, and LEED. And adsorption and desorption kinetics in surface reactions are also introduced.

458.613 Polymer Phelogy

- This course provides knowledge of surface structures, properties, and several phenomena. This course also gives fundamental definitions of statistics dynamics, AES, ESCA, and LEED. And adsorption and desorption kinetics in surface reactions are also introduced.

458.616 Polymer Processing

- This course provides fundamental knowledge of polymer materials, transfer phenomena, and polymer rheology. This course also deals with extrusion, injection molding, calendering, and fiber spinning.

458.621 Advanced Electrochemistry

- This course deals with materials of electrode and electrolyte of cells, fuel cells, and photo cells for energy storage and conversion with electrochemical methods. And this course involves structure and function of electrochemical sensors and the applications of membranes and photocell - hemistry.

458.622 Advanced Surface Chemistry

- This course provides the development of important substitute energy through the analysis of statistical data about the total usable energy in the earth, the deposits and the durability of raw materials. This course also intensively gives the technique of energy management to save coal and petroleum energy.
458.641  고분자합성 3-3-0

Synthesis of High Polymers

This course deals with general polymer synthesis based on polymer chemistry and organic synthetic chemistry. Especially, this course emphasizes synthesis of polymer from radical polymerization, ionic polymerization, photonic and radioactive polymerization, and cyclic organic compounds.

458.642 고분자화학특론 3-3-0

Advanced Structures and Properties of Polymers

This course lectures on polymer structures and material properties. Especially, this course emphasizes conformation of linear polymer chains, chain folding, stereoregularity, hydrogen bonding of polymers, and mechanical, thermal, and electrical properties of polymers. This course also deals with solvent and chemical resistance of polymers and effects of adhesion, pressure, molecular weight, and time.

458.643 정밀화학특론 3-3-0

Advanced Organic Chemistry for Fine Chemicals

This course deals with newly developed synthetic methods of dyes, medical products, agricultural chemicals, and starting materials on the basis of petroleum and fine chemistry in undergraduate course.

458.645  고분자재료특강 3-3-0

Topics in Polymeric Materials

This course lectures on polymer solution or microchemistry. It deals with properties of equilibrium state of polymer and brownian movement of polymer chain, motion of polymer chain in dilute or semi-dilute solution, and Rouse and reptation motion in polymer melting materials. This course also introduces molecular theory to viscoelastic property and motion of anisotropic polymer liquid-crystal.

458.651 고분자계면공학 3-3-0

Interfacial Engineering in Polymers

This course introduces the principles concerning ultra thin film of different polymer interface and monomer interface, interface thermodynamics, molecular interactive attraction, polymer phase separation, microphase separation of block copolymer, and polymer surface reforming. And this course lectures experimental methods to characterize polymer interface.

458.652 고분자반응론 3-3-0

Polymeric Reactions

This course ensures chemical basis to develop new reaction mechanisms of polymer reactions. The objective of this course is to comprehend high dimensional level for the analysis and discussion of polymerization reactions.

458.653 고급유기합성학 3-3-0

Advanced Organic Synthesis

This course introduces the principles concerning ultra thin film of different polymer interface and monomer interface, interface thermodynamics, molecular interactive attraction, polymer phase separation, microphase separation of block copolymer, and polymer surface reforming. And this course lectures experimental methods to characterize polymer interface.

458.661 생물분리공학 3-3-0

Bioseparation Engineering

This course deals with separation technologies for isolations of various biological products. Emphasis will be given to the principles of separations and their applications for new bio-products. Topics include centrifugation, extraction, and reverse osmosis.
precipitation, and various chromatography from the classical separation procedures to the state-of-the-art technologies.

**458.662 分子생물공학특론 3-3-0**

**Advanced Molecular Biochemical Engineering**

유전자 발현에 관한 분자생물학의 기초 지식을 포함하여 미생물, 식물, 동물 세포에서의 유전자 조작에 사용되는 다양한 벡터의 종류와 특성, 유전자 조작 생물체의 제조 방법 및 유전공학의 활용에 관한 내용을 강의한다.

이 과목은 효소를 실제 응용하는 데 필요한 효소자체에 대한 지식의 습득과 생물학적인 원리의 적용 및 새로운 효소공정에 대한 최근의 연구를 통해 공업용 촉매로서의 효소에 대한 지식 및 이용상에 관하여 다룬다.

This course provides the knowledge about enzymes and the applications of enzymes as industrial catalysts used in newly developed enzyme processes.

**458.663 응용단백질공학 3-3-0**

**Protein Engineering**

단백질의 기본구조, 작용기작, 기능 등의 기분적인 성질 등의 논의와 이를 이용하는 단백질공학으로 세분화된 단백질의 특성, 생화학적 분석방법 및 공업적 응용 방법을 강의한다.

This course gives the discussion of the fundamental of protein and mechanism of function etc, and the applications of this theory. This course also offers the biochemical analytical methods.

**458.672 나노바이오공학특론 3-3-0**

**Advanced Nanobiotechnology**

나노기술과 바이오기술의 기본원리와 특성에 대하여 이해하고, 이 두 기술이 접목되어 나타날 수 있는 응용기술의 개발과 응용 가능성에 관한 학습을 목표로 한다.

This course provides the basic principles and characteristics of nanotechnology and biotechnology. This course focuses on the development and applications of the fusion technology, which can be achieved by combining these two technologies.

**458.673 생물화학공학특론 3-3-0**

**Advanced Biochemical Engineering**

생물화학공학에 대한 전반적인 개요에 대하여 학습하고 각 세부 분야의 특성 및 현황과 응용 가능성을 관한 포괄적인 이해를 학습 목표로 한다. 

미생물 배양에 필수적인 반응기의 구조에 대한 이해 및 반응기 설계와 유의점 등을 실제 예를 통하여 습득하게 한다. 또한 미생물 배양시 중요한 pH 제어와 DO 제어 등에 관한 이론과 방법 등을 학습하게 하고 실제 시험배가 현장에서 응용 가능성을 하는 것을 목적으로 한다. 또한 scale up 과정 중에 고려해야 할 점과 실제 scale up을 수행하는 데 응용 가능한 방법을 학습한다.

The objective of this course is the understanding of general scope of biochemical engineering. This course lectures on theories and methods of important pH control and DO control in microbe culture. In addition, this course gives check points during scale-up process and applicable performances of real scale-up.

**458.674 효소공학 3-3-0**

**Enzyme Engineering**

คลิปThis course introduces the recent separation process and biochemical process, petroleum chemical process and applied mathematics etc, in the fields of the topics which is not dealt with in the conventional lectures.\n
**458.701 공정시스템특강 3-3-0**

**Topics in Process and System Engineering**

공업화학 제분야의 최근 연구동향 및 신기술의 소개를 목적으로 한다. 첨단 신소재, 정밀화학, 클린테크놀로지, 기능성 고분자 등 주제를 학습하며 선별하여 광범위한 공업화학의 제분야 중 학문의 조류에 따라 특정분야에 대한 이해를 높이도록 강의 및 토론을 진행한다.

This lecture gives all of the recent chemical technology research trends and the introduction of the new technology. The main theme of the lecture would be changed according to the fashion of the chemical technology.

**458.702 무기 및 반도체특강 3-3-0**

**Topics in Inorganic Material and Semiconductor Process**

최근의 분리공정, 생물화학공정, 석유화학공정, 고분자 공정, 재료과학, 응용수학, 전자계산기를 이용한 공정설계 등 경제과목에서 강의되지 않는 과제 중에서 선별하여 최근의 연구동향과 그 내용을 광범위하게 소개한다.

This lecture introduces the recent separation process and biochemical process, petroleum chemical process and applied mathematics etc, in the fields of the topics which is not dealt with in the conventional lectures.

**458.703 정밀학습 및 고분자특강 3-3-0**

**Topics in Fine Chemicals and Polymeric Materials**

최근의 분리공정, 생물화학공정, 석유화학공정, 고분자 공정, 재료과학, 응용수학, 전자계산기를 이용한 공정설계 등 경제과목에서 강의되지 않는 과제 중에서 선별하여 최근의 연구동향과 그 내용을 광범위하게 소개한다.

This lecture introduces the recent separation process and biochemical process, petroleum chemical process and applied mathematics etc, in the fields of the topics which is not dealt with in the conventional lectures.

**458.704 생물 및 환경공학특강 3-3-0**

**Topics in Biological and Environmental Engineering**

최근의 분리공정, 생물화학공정, 생물화학공정, 고분자 공정, 재료과학, 응용수학, 전자계산기를 이용한 공정설계 등 경제과목에서 강의되지 않는 과제 중에서 선별하여 최근의 연구동향과 그 내용을 광범위하게 소개한다.
This lecture introduces the recent separation process and biochemical process, petroleum chemical process and applied mathematics etc, in the fields of the topics which is not dealt with in the conventional lectures.

458.710  화학산업 대학원세미나  1-2-0

Graduate Seminar for Chemical Engineers

화학산업 관련된 산업체에 종사하는 외부인사를 초청하여 강연 하게 함으로써 산업체의 최근 동향을 파악하게 하고 학생들의 진 로 결정에 도움을 주기로 한다.
This course provides opportunity to listen to seminars related to chemical engineering which are presented by invited speakers in industry and helps students decide what to do in their future.

458.711  화학생물공학대학원세미나  1-2-0

Graduate Seminar

화학공학에 관련된 최근의 학술연구에 대한 동향이나 산업체의 현황을 습득하게 하는 데에 주목을 둔다. 그러므로 관련 분야의 전문가의 초빙 강연을 통하여 새로운 공학적 기술을 학생들에게 인식시켜 연구에 응용할 수 있도록 하며 학생들 자신의 연구내용을 발표하게 하여 연구방향을 제계화시키고, 자신의 의사를 정확하게 표현할 수 있게 한다. 또한 질의 응답을 통하여 타인의 연구내용을 토의할 수 있는 능력을 함양시킨다.

The Objective of this lecture is to understand recent development of chemical engineering and present industrial conditions. Specialists of each field are invited as speakers and students also have chances to give presentations about their own research. This course helps students develop their researching ability and direction.
4582.501
Introduction to Solid State/Interface Chemistry

이 과목의 목적은 SAM과 같은 표면들, 고분자 증착과 생물학적 계면의 화학을 다양하게 다루는 데 있다. 여기에 패턴화된 표면들의 가능성을 강의할 것이다. 구체적인 강의 내용으로는 1) 표면 PAU와 나노기술이란 무엇인가? 2) 힘, 3) 표면에서 힘, 4) 전자, 5) 결정구조, 6) 표면화학, 7) 마이크로패턴화 및 마이크로 구조화, 8) 생물학적 계면이 포함 된다.

The intention of the course is to focus on various methods toward chemistry on surfaces, such as SAMs, polymer deposition and biological interfaces. Additionally possibilities to pattern surfaces will be addressed. Syllabus: i) What is a Surface/Interface?, ii) Forces, iii) Adsorption at surfaces, iv) Imaging Methods, v) Surface Chemistry, vi) Preparation of Polymer Surfaces, vii) Micro patterning and Micro structuring, viii) Biological Interfaces.

4582.502
고체물리화학 3-3-0

Solid State Physical Chemistry

이 과목에서는 고체화학의 기본 원리와 이 원리가 소재의 성질을 설명하는 데 어떻게 사용되는지를 가르친다. 전자구조, 화학결합과 결정구조와의 관계를 다룬다. 고체의 물리적 성질, 즉 자기적, 전기적, 광학적 성질을 소개하고, 이들에 전자 및 결정구조와의 관계를 강의한다. 결정구조, 고체에서 화학결합(공유, 공유, 이온결합), 비교ivel, 결정, 전기적 성질(전기, 전도성, 조전도성, 이온전도성 등), 그리고 자기적 성질이 다루어진다.

This subject teaches basic principles of solid state chemistry and shows how they can be used to describe the materials properties. In the relationship between the solid such as magnetic, electric, optical, etc. are introduced and related to their electronic and crystal structure. Tentative topical coverage: Crystal structures, chemical bonding in solids (metallic, covalent, ionic), non-bonding electrons (d- and f-electrons, crystal field), defects in solids, electrical properties (metallic conductive, semiconducting, superconducting, ionic conductivity, ferroelectricity, piezo electricity, optical properties (d- and f-electrons) and magnetic properties.

4582.503
기능성고분자나노소재 3-3-0

Functional Polymer Nanomaterials

고분자 나노 소재의 제조에 관한 다양한 방법을 습득하고, 최근 기술 동향 및 중요성에 대하여 공부한다. 나노 고분자 소재를 기능성을 부여하는 여러 가지 방법에 대하여 공부하고, 전자, 배터리 등 에너지 효율 분야의 향후, 공급물질 제거, 유해물질 흡착 등 환경 화합 분야에 적용될 수 있는 고분자 나노 소재에 대하여 공부한다.

Functional polymer nanomaterials have been attained great interest in recent nanotechnology due to their diverse practical applications to solve the recent highlighted problems in energy and environmental area. Several methods to fabricate functional polymer nanomaterials will be proposed, and the recent technology and importance for polymer nanomaterials will be displayed.
별을 통해 전달되므로 이들 계편 또한 전체 성능을 결정하는 중요한 인자로 된다. 최근 들어 이들 전극 재료와 계편 특성의 항
성을 위하여 나노 크기 전극 물질, 나노 코팅, 나노 크기에 조절
된 전극 재료 및 계면, 분리막의 나노 복합화 등 나노기술이 적극
되고 있다. 한편, 이차 전지와 초고용량 캐패시터는 여러 요소를
조합하여 시스템화 기술(설계, cell balancing 등) 또한
전지 성능 항상에 중요한 역할을 한다. 이차 전지의 시스템화
기술은 기존 알카라인 전지, 납疊전지, Ni-Cd 및 Ni-metal hy-
dride 이차 전지에 적용된 시스템화 기술을 바탕으로 발전해 오고
있다. 전력저장 장치로서 대용량 Na/S 이차 전지, redox flow cell 등도 상용화가 시도되고 있으며 이들에 대한 소재, 시스템화 기술을 수행할 필요가 있다. 위에 제시한 필요성을 바탕으로 다음과 같은 내용의 강의가 진행된다. 1) 알카라인 전지, 납疊전지,
Ni-Cd 및 Ni-metal hydride 이차 전지의 구성 재료, 시스템화 기술, 2) 리튬 이차 전지와 초고용량 캐패시터의 전극 및 전해질
소재, 계면 특성, 나노기술의 적용, 3) 전지의 설계, cell balancing, 안전성 확보, 수행 향상, 4) 대용량 Na/S 이차 전지, redox flow cell의 소재 및 시스템화 기술.

Nowadays, the portable energy storage devices such as secondary batteries and supercapacitors are leading the wireless
revolution of mobile phones and notebook computers. In the near future, their use seems to be expanded for hybrid
electric vehicles and energy storage devices for renewable
power generations. The performance characteristics of these devices are frequently limited by the performance of the constituent materials (anodes, cathodes, electrolytes and separators), and also by the interface characteristics at electrode/electrolyte and separator/electrolyte since electron and
tion transfer is the underlying phenomenon for cell operation. Recently, nano-technology has been introduced for an improvement of material and interface characteristics; nanosized electrode materials, nano-coating, nano-controlled materials and interfaces, and nano-composites for separators. The system technology is also practically important to maximize the cell performance from the used materials; design and cell balancing. The present system technologies are inherited from those for alkaline cells, lead-acid, Ni-Cd, and Ni-metal hydride cells, therefore the knowledges on these cells are needed. Also needed are the materials and system technologies for Na/S and redox flow cells since they are emerging as the energy storage devices for renewable power generations. This class includes the following topics: 1) The materials and system technologies for alkaline, lead-acid, Ni-Cd, and Ni-metal hydride cells, 2) Electrode/electrolyte materials, interface characteristics for lithium secondary cells and supercapacitors, and introduction of nano technologies, 3) Design, cell balancing, safety and life time improvement, and 4) Materials and system technologies for Na/S and redox flow cells.

### 4582.609 환경공정학 3-3-0
**Environmental Process Engineering**

 최근에 발명되거나 개발된 환경에너지 관련 분야에 적용될 수 있는 여러 고급 공정공학을 공학적인 측면에서 분석 및 이해한다. 또한, 경제성 있고 환경호환의 새로운 공정 개발을 위하여 나노기술과 접목된 새로운 나노공정을 개발하기 위한 지식을 배운다.

This course provides the fundamental understandings for the advanced environmental process technologies recently de-
veloped in environmental and energy-related areas. Students learn various concepts and practices for the development of
efficient and economical processes for a sustainable society.

### 4582.610 고급화학공학 3-3-0
**Advanced Environmental Chemistry**

이 과목은 지구상의 환경 변화의 구조와 방향을 이해하는 데 필
요한 도구로서 화학평형 원리를 이해하는 데 초점을 맞추고 있다.

This course focuses on the principles of equilibrium chem-
istry serving as indispensable tools for understanding the
composition and direction of change in environmental
systems. The introduction of this course begins with a short
discussion of global environmental issues such as climate
change and energy crisis and examines the issues of mass
conservation. In addition, fundamentals of thermodynamics
and kinetics, acid-base chemistry with a focus on the carbo-
nate system, the updated coverage of precipitation/dissolution,
coordination chemistry, metal binding by humates will be
covered will be covered. Particularly, chemical convergence
for developing emerging energy, environmental technology,
redox reactions, photochemistry, and environmental electro-
chemistry will be included.

### 4582.702 에너지환경 합의융합특강 1 3-3-0
**Special Topics to Chemical Convergence for Energy & Environment 1**

에너지환경 융합기술의 최근 이슈들을 다룬다. 특히 분프로그
램 참여 교수들의 팀티칭을 통해 특별 이슈들에 대한 다양한 시각
을 제시함으로 창의력을 키우는 데 주력할 예정이다.

This course is designed to explore special topics in chemical
convergence for energy and environment. Various ap-
proaches will be provided from professors in this program
through team teaching.
4582.703  에너지환경 화학융합특강 2  3-3-0

Special Topics to Chemical Convergence for Energy & Environment 2

This course is designed to explore special topics in chemical convergence for energy and environment. Various approaches will be provided from professors in this program through team teaching.
본 강의에서는 국가기간 에너지인 석유, 가스 및 원자력 관련
에너지기술, 개발, 수급 및 정책 전반에 대하여 유망형식으로 진행
한다. 에너지의 정의와 역사를 비롯하여 에너지 환경과 에너지원
별 소비구조의 현황 및 전망을 살펴본다. 또한 석유, 가스의 개발
기술 및 전망, 원자력의 적용방안 및 에너지전망과 정책에 대하여
학습한다. 전문가토론시간을 마련, 선진국의 산업구조와 에너
지 수급 및 정책을 비교분석하며 미래를 위한 에너지 소득특성, 안정적 수급방안에 대하여 토론한다.

This seminar covers systematic study of present state and
prospect of energy technology, development, production, con-
sumption as well as energy policy. Nuclear energy as well
as traditional energy sources such as oil, gas and coal are
studied. Also, discussion sessions about comparison with ad-
vanced countries and characteristics of our future energy mix
with energy experts are provided.

### 459.500 에너지정책세미나 3-3-0
Seminar in Energy Issues

본 강의에서는 국가기간 에너지인 석유, 가스 및 원자력 관련
에너지기술, 개발, 수급 및 정책 전반에 대하여 유망형식으로 진행
한다. 에너지의 정의와 역사를 비롯하여 에너지 환경과 에너지원
별 소비구조의 현황 및 전망을 살펴본다. 또한 석유, 가스의 개발
기술 및 전망, 원자력의 적용방안 및 에너지전망과 정책에 대하여
학습한다. 전문가토론시간을 마련, 선진국의 산업구조와 에너
지 수급 및 정책을 비교분석하며 미래를 위한 에너지 소득특성, 안정적 수급방안에 대하여 토론한다.

This seminar covers systematic study of present state and
prospect of energy technology, development, production, con-
sumption as well as energy policy. Nuclear energy as well
as traditional energy sources such as oil, gas and coal are
studied. Also, discussion sessions about comparison with ad-
vanced countries and characteristics of our future energy mix
with energy experts are provided.

### 459.501 폐기물지층처분공학개론 3-3-0
Fundamental Waste Disposal Engineering in Underground Rock Mass

방사성 폐기물 및 독성 산업 폐기물의 처분과 관련하여 외부
환경으로부터의 침입이 용이한 지층 처분 방안이 전 세계적으로
고려되고 있다. 특히 방사성 폐기물의 지층 처분과 관련한 연구는
지난 20년 넘게 수행되어 오자 있으며, 중저온위 방사성 폐기물
은 이미 지층에 처분되고 있다. 이 과정에서는 폐기물을 지하
중에 처분하는 경우, 고려되어야 하는 환경과 요인들과 이를
구축하기 위한 방안에 대하여 학습한다. 특히 구조물을 장기간 안
정성, 지하수 환경 보전 등 중간 환경에 대해서도 논의한다.

Underground waste disposal is considered as one of the
candidate solutions for the disposal of radio active and toxic
industrial waste, because underground environment could be
possibly isolated from other environmental systems. Studies on
the underground disposal of radio active waste have been
carried out for the past 20 years or more, and the tech-
nologies are already in use for the low- or medium level ra-
dio waste disposal. This course deals with the different prob-
lems and solutions to be considered for the underground ra-
dio active waste disposal. Especially long-term stability of
the underground storage facilities and hydro-environmental is-
sues are thoroughly discussed. The key topics of the course
include (1) location of repositories, (2) design of repositories,
(3) construction, (4) performance assessment, (5) disposal of
radio active waste, (6) quality assurance, (7) instrumentation
and monitoring, etc.

### 459.502 고급에너지경제학연구 3-3-0
Advanced Energy and Energy Technology Economics

고급에너지경제학연구에서는 에너지관련 산업에서 나타나는 경
제적 특수현상의 분석을 위한 고급요법을 강의한다. 산업활동에서
의 에너지발생의 역할과 국제시장의 특수성, 시장경제요인으로 설
명되지 않는 외부성(Externality) 문제와 환경 문제, 그리고 자원
의 회수성(Exhaustion/ Scarcity) 문제 등에 대한 고급요법을 학
습하며 이들 문제의 해결책으로서 다양한 에너지경제정책
의 실효성 분석에 관한 방법론을 학습한다.

This course discusses advanced topics of the economic/en-
vironmental characteristics and the economic theories on
energy and energy technology. Specific topics will include the
exhaustion of energy resources, externality aspects of energy
goods and technologies, and governmental intervention.

### 459.503 탄성파탐사특강 3-3-0
Topics in Seismic Prospecting

탄성파를 이용하는 현장적인 방법론 반응특성 탐사와 탐사와 곤
질결 탐사 및 탐사 등을 다루게 된다. 탐사의 기본원리는 되는 물
리 수학적 특성과 과정이 가동하는 매체에 따른 특성을 식별시계
법과 해상탐사로 나누어 강의하며 여러 가지 원자력에 따른
결과 감사의 특성 및 전산 처리 과정에 대하여 다수게 된다.

This course studies reflection and refraction methods of
seismic probing techniques. It covers land/marine surveys,
data property, medium parameter and data processing techni-
ques of various source-receiver arrays.

### 459.570A 에너지시스템공학특강 3-3-0
Special Topics in Energy Systems Engineering

이 과목은 핵발전기 기반 원자력시스템 공학 각 분야의 최신 연
구동향과 관련된 다양한 주제를 다룬다.

This course covers various special topics related with
up-to-date research trends in each engineering area for fis-
sion based nuclear energy systems.

### 459.575N 원자력통제와 국제협력 3-3-0
Nuclear Control and International Cooperation

이 강의는 헤비핵 및 원자력통제에 대한 개발적 이해에 초점
을 둔다. 원자력의 평화적 이용과 원자력통제 활동이 가지는 현실
적 특성과 의미를 분명히 하여 학생들에게 원자력 전문과 관련된
다양한 시각과 적용분야를 소개한다.

Fundamental concepts and facts of the nuclear control are
studied in this course. From the characteristics and limitation
of the nuclear control, the student is expected to understand
the prospect of the nuclear nonproliferation and international
cooperations. Issues and options of the atomic energy diplo-
macy are discussed for peaceful usage of nuclear energy.

### 459.600 석유가스공학특강 3-3-0
Topics in Petroleum and Gas Engineering

석유가스학은 탐사, 시추, 평가, 유통원천, 생산, 저류층관리, 경제
성 분석 등 다양한 분야로 구분되어 있다. 석유와 가스의 탐사기
법, 시추를 위한 준비작업, 해상 및 유통시설의 원리와 특성, 조명
해석주의 특성과 신기술, 유통원천의 기법과 특성, 검출( well
logging) 방법의 종류와 적용, 생산시설, 저류층 관리, 석유 및 가스개
발 프로젝트 경제성 평가 등 핵심내용에 대하여 공부한다.

Petroleum engineering covers a broad range from explora-
의 실효성 분석에 관한 방법론을 학습한다.

This course discusses advanced topics of the economic/en-
vironmental characteristics and the economic theories on
energy and energy technology. Specific topics will include the
exhaustion of energy resources, externality aspects of energy
goods and technologies, and governmental intervention.

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tion, drilling, reserve evaluation, well completion, production, reservoir management, economic analysis, and so on. The class covers topics on oil and gas exploration, method and characteristics of well completion, type and applications of well logging, onshore and offshore drilling, production facilities, reservoir management, and project evaluation for oil and gas developments.

459.601 Energy System Reliability Analysis

Energy System Reliability Analysis

The course focuses on fault tree analysis and probability and reliability studies, with a focus on power plant systems. It deals with the basic concept of reliability and probability, along with the structure and the application of fault tree. The course also studies the application of Monte-Carlo method to reliability analysis.

459.700 Environmental Surface Chemistry

Environmental Surface Chemistry

This course covers methods of reliability analysis for nuclear power plant systems. It deals with the basic concept of probability and reliability, along with the structure and the analysis of fault tree. The course also studies the application of Monte-Carlo method to reliability analysis.

459.803 Reading and Research

Reading and Research

This course examines physio-chemical phenomena at particle surfaces and surface phenomena of solid-gas, solid-liquid, liquid-gas and liquid-liquid. Specific topics will include surface tension, contact angle, adsorption, and electrical double layers.

M1589.000300 Special Topic on Advanced Energy System Materials

Special Topic on Advanced Energy System Materials

This course covers optimization techniques for reservoir management to minimize the development cost and the risks. The course covers fundamentals and state-of-the-art applications of geomechanics for students with geomechanics and similar background.

M0000.019800 Optimization of Reservoir Management

Optimization of Reservoir Management

This course covers optimization techniques for reservoir management to minimize the development cost and the risks. The course covers fundamentals and state-of-the-art applications of geomechanics for students with geomechanics and similar background.

M0000.019900 Topics in Petrophysics

Topics in Petrophysics

This course covers optimization techniques for reservoir management to minimize the development cost and the risks. The course covers fundamentals and state-of-the-art applications of geomechanics for students with geomechanics and similar background.
physical theories about multiphase flow, pore structure, and capillary pressure that are needed to understand fluid flow in porous media. This course focuses more on practice of recognizing and interpreting petrophysical phenomena in real field data than petrophysical theories.

**M0000.020000** 
**Topics in Reservoir Engineering**

This course addresses stochastic and geostatistic analysis methods to produce effectively underground hydrocarbon. It also covers the applicability of the analysis methods and of the field examples.

**M1589.000400** 
**Advanced Principles of Resource and Environmental Management**

This course introduces major managerial terms and frameworks to deal with natural resources such as energy and minerals and their related technology and environmental issues. It deals specifically with concepts of industrial ecology and life-cycle Assessment. This course also discusses current policies, regulations and evaluation methods for technology and life-cycle Assessment. This course also discusses topics in Electrical Prospecting. It focuses on the electrical prospecting theory, interpretation methods, data processing, and the inversion theory.

**459.522** 
**Geophysical Data Processing**

This course focuses on the analysis of geophysical data processing. It deals with various prospecting data types and calculation methods for inversion and modelling.

**459.525** 
**Energy Resources Seminar**

This course studies various techniques for numerical data processing. It covers finite element method and finite differ-
459.627
Rock Stress Analysis

459.628
Geohazards Assessment

459.629
Topics in Environmental Geochemistry

459.630
Separation Process in Waste Minimization

459.631
Clean Coal Technology

459.632
Topics in Energy and Environmental Geomechanics

459.633
Econometric Analysis of Industry and Technology
to analyze economy-wide aspects. Also, flexible functional forms and dynamic optimization techniques are added for industry’s decision-making echamism. Rigorous programming practice as well as theoretical discussions are required.

459.722 지구물리역학특강 3-3-0

Topics in Geophysical Inverse Theory

This course examines basic principles and mathematical parameters for seismic data processing. It focuses on inversion method which is based on the adjoint state of wave equation. This inversion method support to find efficiently arrival time and velocity model. Besides, you will learn about real time estimation using quasi-static assumption. From those theories, you will be able to expand the knowledge for the other prospecting methods like CSEM, VLF, MT/AMT, CSMT/CSAMT, etc. With various models such as one-dimensional layer models and two-dimensional direction models, you can calculate theoretical solutions, and understand the properties of wave propagation. You will take the interpretation scheme of geophysical data.

459.723 고급지구통계학 3-2-2

Advanced Geostatistics

This course deals with the mechanics of fracturing in rocks and other brittle materials. Specific topics will include the continuum and fracture mechanics theory, numerical methods for stress intensity factors and crack growth. The course also examines rock fracture, micro-mechanical models for rock deformation and failure under compression.

459.724 발파공학특강 3-3-0

Topics in Engineering Blasting

This course studies various management methods for geotechnical data. It covers optimization techniques to minimize uncertainty by the integration of available data.

459.725 암반파괴방정식 3-3-0

Fracture Mechanics of Rocks and Other Brittle Materials

This course deals with the mechanics of fracturing in rocks and other brittle materials. Specific topics will include the continuum and fracture mechanics theory, numerical
This course covers the analysing and modeling techniques of rock mass discontinuities. It focuses on the geometrical description of discontinuities for the orientation, frequency and size based on probabilistic approach. Application cases of the modeling technique in fluid flow analysis and block stability analysis are also introduced.

459,731  
**Dissolution Feature of the Trench Plate**  
*Theory of Poroeelasticity*

This course covers the analysing and modeling techniques of rock mass discontinuities. It focuses on the geometrical description of discontinuities for the orientation, frequency and size based on probabilistic approach. Application cases of the modeling technique in fluid flow analysis and block stability analysis are also introduced.

459,732  
**Numerical Analysis in Rock Engineering**

The course consists of the theory of elasticity and its application to the fluid-saturated porous media. The course starts with elasticity covering the concepts of stress, strain, tensor notation, equilibrium equation, constitutive equation and governing equations. Latter part of this course is devoted to the constitutive equation and diffusion equation of porous media. Finally, coupled equation of elasticity and diffusion equation is covered.

459,504A  
**Nuclear Systems Engineering**

The course covers the analysing and modeling techniques of rock mass discontinuities. It focuses on the geometrical description of discontinuities for the orientation, frequency and size based on probabilistic approach. Application cases of the modeling technique in fluid flow analysis and block stability analysis are also introduced.

459,560  
**Analysis of Static Reactor Characteristics**

This course covers the nuclear systems thermal hydraulic characteristics, reactor heat generation, thermodynamics of flows, thermal analysis of fuel elements, single- and two-phase thermal hydraulic, analysis of single and multiple heated channels and flow loop, porous media and subchannel analyses of multiple interacting heated channels, distributed parameter analysis of fuel assemblies, and uncertainties in reactor thermal analysis. Students are individually expected to solve the problem sets, hand in the solution, and present their results in the class in the interest of general discussion. Each of the students is to take turns in leading the discussion. The term project has to do with transient analysis of single heated channel. There are four candidate models to be worked on: the sectionalized compressible flow, momentum integral, single mass velocity, and channel integral models. For each model, the students are required to report on the differential equation, finite difference equation, and results. The cases to be analyzed include the heat flux increase and inlet pressure decrease transients for the pressurized water reactor (PWR) and boiling water reactor (BWR). Presentation will be graded based on its technical contents, oral presentation skills in English, questions and answers, and timing.
This course deals with mid and low-level radioactive waste disposal, carrying and storing the high-level waste such as spent nuclear fuels, and policy/technical prospect of radioactive waste disposal. For sustainable nuclear energy utilization, methods for high level waste management for both fusion and fusion systems will be examined. Nuclear transmutation, as an alternative option for communities with high population density will be discussed with focus on policy, technology and society. Technical approaches with design cross-cuts will be studied.

This course deals with current issues on industrial applications to fusion plasmas. Various physical and technological conditions required for harnessing fusion energy are first introduced, and followed by the review of three major theoretical methods of particle orbit, kinetic, MHD theories to analyze plasma and fusion systems. These theoretical approaches are applied to the discussion on equilibrium and transports of magnetic fusion plasmas to understand plasma confinement problems in fusion reactor development.
This course studies the types and the operation of radiation detectors. It also covers the performance/ specification of amplifiers, pre-amplifiers, ADC, MCA, and TAC in the signal processing.

**459.569**  
Gamma-ray Spectroscopy

**459.571**  
Special Topics in Radiation Engineering

**459.573**  
Monte Carlo Radiation Analysis

**459.574**  
Monte Carlo Reactor Analysis

**459.577**  
Monte Carlo Radiation Analysis

**459.582**  
Advanced Fusion and Plasma Laboratory

**459.664**  
Accelerator Engineering

**459.666A**  
Topics in Fusion and Plasma Studies

**459.668**  
Radiation Biophysics

This course deals with the application of accelerators to nuclear science, engineering, and biomedical applications of radiation.

This course investigates the origin of the gamma-ray and X-ray, and their interaction with matters. It also covers semi-logical applications of radiation.

This course covers various special topics related up to-date research trends in each engineering area for radiation engineering which surpasses industrial, medical, and biological applications of radiation.

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This course covers various special topics related up to-date research trends in each engineering area for radiation engineering which surpasses industrial, medical, and biological applications of radiation.

This course deals with the application of accelerators to nuclear science, engineering, and biomedical applications of radiation.

This course provides the introduction of the current issues in fusion and plasma related studies as a special topic. Various special topics include developments of new plasma diagnostic techniques and new plasma processing technologies. It also covers the wide range of numerical techniques involved in the analysis and design of processing plasma system.
선 방호 또는 의료 방사선공학을 전문 분야로 활동하게 될 학생들을 위한 학교의 특성을 기반으로 다양한 생물학적 특성에 대한 이해 기반을 제공한다.

The information of radiation effect on human body gives the base to the radiation protection strategy in radiation industry and the prescription of irradiation in radiation diagnosis/therapy. This lecture provides the non-biologist students, whose specialties include radiation protection and radiation engineering on medical purposes, with diverse biological effects of radiation as well as its physical aspects.

459.760 핵융합로공학 1 3-3-0 Fusion Reactor Technology 1
핵융합로 내에서 핵융합이 일어날 수 있는 변수들의 조건과 이에 해결방법, 여러 형태의 핵융합 장치 내에서의 개개 입자들의 운동방정식, 플라즈마의 기체 운동론 및 유체이론적 해석과 직접 관련된 플라즈마를 다룬다. 또한 최신 핵융합론 및 공학기술에 대한 정보를 제공한다.

This course deals with the criteria for nuclear fusion and their realization methods. It also covers single particle analysis in various types of fusion reactors, as well as MHD and kinetic theories for high temperature plasma fusion analysis.

459.761 핵융합로공학 2 3-3-0 Fusion Reactor Technology 2
핵융합로내의 플라즈마 가열, 플라즈마 불안정성, 전자 복사, 제1 벽과 플라즈마 상호작용을 살펴본 후 토카마क 장치를 비롯한 여러 차원구속에 의한 핵융합 장치들과 관성구속 핵융합장치들을 소개하고, 핵융합로 설계요건과 핵융합로 기술개발과 관련된 공학적인 문제들에 대해 있다.

This course deals with plasma heating mechanism. It covers the instabilities in plasma, radiation, and plasma-wall interaction. Additionally, the course deals with the current issues on fusion plasma theories.

459.762 중성자수송론 3-3-0 Neutron Transport Theory
원자로심 내에서 중성자의 공간분포 및 속도분포를 시간에 따라 예측하는 중성자물리의 기본을 제공한다. 비교적 단순한 수송 문제에 대해 공부하며 특히 중성자수송방정식의 유도 및 일반 해법, 중성자 수송방정식의 해석, 중성자 수송방정식에 대한 해 법 등을 강의한다.

This course introduces neutron physics, analyzing the time-dependent behavior of neutron with space and velocity distribution in reactors. Specific topics will include the analysis of simple neutron transport problems, derivation, general method and analytical solution of neutron transport equation.

459.765 원자로열전달특강 3-3-0 Topics in Nuclear Heat Transport
본 과목은 학부 3학년 계통에너지 전달 공학 이론을 기초로 이상유동에 의한 열전달과 유동특성을 심층연구하는 심화학습과목이다. 학습내용은 기포역학과 비등열전달 및 이상유동에 의해 기초와 해석, 토마 эксп로바드의 열전달, 열전달에 대한 분야를 학습한다. 마지막으로 이상유동분야 연구에 필수적인 이상유동분야의 측정법에 대해서 원리와 절단기술 연구 동향을 소개한다.

Two-phase Flow and Heat Transfer Engineering
본 과목은 계통에너지 전달공학이론을 기초로 이상유동에 의한 열전달과 유동특성을 심층연구하는 심화학습과목이다. 학습내용은 기포역학과 비등열전달 및 이상유동에 의해 기초와 해석, 토마 exp로바드의 열전달, 열전달에 대한 분야를 학습한다. 마지막으로 이상유동분야 연구에 필수적인 이상유동문서의 측정법에 대해서 원리와 절단기술 연구 동향을 소개한다.

With bases of system heat transfer, in-depth study for two phase flow technology and boiling heat transfer will be implemented. Practice will be applied in nuclear power plant design and nuclear accident analysis. Especially it approaches a more practical field like a sub-channel and critical flow analysis. Moreover the state-of-art technology for two-phase flow measurement will be introduced.

459.766 원자로안전해석 1 3-3-0 Reactor Safety Analysis 1
원자력 안전관리의 일반적인 사고 유형을 분석하고 이를 해석하기 위한 원자로 사고 해석 모델에 대해 교육한다. 특히 RELAP 등과 같은 원자로 열력학 현상 해석 코드들에 반영된 모델들에 대해 소개하고 원자로 사고 해석에 관한 실제를 검토, 분석한다.

This course introduces the methodologies to analyze typical reactor accidents. It covers the considerations of implemented models reflected in reactor transient simulation codes.

459.767 원자로안전해석 2 3-3-0 Reactor Safety Analysis 2
본 과목은 계통에너지 전달공학이론을 기초로 이상유동에 의한 열전달과 유동특성을 심층연구하는 심화학습과목이다. 학습내용은 기포역학과 비등열전달 및 이상유동에 의해 기초와 해석, 토마 exp로바드의 열전달, 열전달에 대한 분야를 학습한다. 마지막으로 이상유동분야 연구에 필수적인 이상유동문서의 측정법에 대해서 원리와 절단기술 연구 동향을 소개한다.

Two-phase Flow and Heat Transfer Engineering
본 과목은 계통에너지 전달공학이론을 기초로 이상유동에 의한 열전달과 유동특성을 심층연구하는 심화학습과목이다. 학습내용은 기포역학과 비등열전달 및 이상유동에 의해 기초와 해석, 토마 exp로바드의 열전달, 열전달에 대한 분야를 학습한다. 마지막으로 이상유동분야 연구에 필수적인 이상유동문서의 측정법에 대해서 원리와 절단기술 연구 동향을 소개한다.

Two-phase Flow and Heat Transfer Engineering is an advanced subject for undergraduate student to study the two-phase flow characteristics and heat transfer. Basic knowledge in mathematics, physics and thermodynamics and the system energy transfer engineering (undergraduate course) are pre-required. The theoretic fundamentals of bubble dynamics, boiling heat transfer and two-phase flow analysis will be presented. Moreover, the students are expected to study the condensation and critical flow for thermal system design and accident analysis. The knowledge of the principals and trends about the measurement of two-phase flow parameters will also be provided.
로, 초고온기체냉각로, 초입계 이산화탄소를 사용하는 동력 변환계통 등에 대해 개념설계를 수행한다. 이러한 원자로는 초장주기 운전을 하게 되는데, 여기에 따른 노심 핵설계, 기기 설계 등도 다룬다. 또한 미래형 원자로에 요구되는 핵비확산성, 안전성, 보안성, 경제성, 지속가능성, 환경친화성을 점진적으로 고려한 설계 실습을 진행한다.

이러한 원자로는 초장주기 운전을 하게 되는데, 여기에 따른 노심 핵설계, 기기 설계 등도 다룬다. 또한 미래형 원자로에 요구되는 핵비확산성, 안전성, 보안성, 경제성, 지속가능성, 환경친화성을 점진적으로 고려한 설계 실습을 진행한다.

The project will take a look into standard design for safety advanced reactors MAXI producing 1000 MWe, MIDI producing 100 MWe, and MINI producing 10 MWe. The topics shall include the reactor core, reactor coolant system, residual heat removal system, emergency core cooling system, and main steam system.
461.501 Microbiology for Industrial Application

This course probes into various metabolic processes of microorganisms and their physiological characteristics. It covers basic biochemistry and physiology for students who are unfamiliar with these subjects, as well as basic metabolic engineering to develop and construct biological processes.

461.502 Computer Application in Medicine

This course will focus on the applications of computer in the medical field. Main topics include computer modeling and simulation methods used for medical researches, computer applications in medical equipments and biological control equipments, and medical database used in hospitals. We will also examine the methods and practices of saving and transmitting medical images.

461.503 Medical Physics

Topics in Protein Engineering

This course examines the fundamentals for the protein structures suitable for industrial applications. Topics to be discussed in class include the following: the basics of the protein structure; the experimental methods using x-ray crystallography, NMR, CD and other instruments to determine protein structure; the computational methodologies to predict the structure, function, and the physical status of proteins; protein modification technology combined with genetic engineering and computational method.

Antibody Engineering

This course focuses on biomedical engineering basics for graduate students majoring in bioengineering. This class covers biotechnological engineering, biomechanical engineering, bioinformatics, and systems biology. The basic theories and recent research topics in biomedical engineering will be discussed by faculties in the related area.

461.504 Introduction to Bioengineering 1

This beginning course focuses on biomolecular and environmental engineering for graduate students majoring in bioengineering. This course covers biomolecular, biomaterial, and bioenvironmental engineering. The scientific basis and recent research topics in bioengineering will be addressed by faculties in the related area.

461.602 Topics in Protein Engineering

This course will cover various subjects related to the physiological system such as dynamics, electromagnetics, statistical dynamics, quantum mechanics, and so on. Students will do modeling and analysis of physiological systems. Main topics include cardiac fluid dynamics, bone joint biomechanics, membrane biophysics, X-ray physics, NMR quantum mechanics and some math for biomedical engineer. All topics are based on medical physics. The main objective of this course is to improve the ability to apply physics to medical fields.
Antibodies (Ab), which show the highest binding affinity to the target molecule in nature, are special proteins in animal that control immune reactions and are used as therapeutic agents as a form of antibody conjugates. In this course, Ab screening, Ab synthesis and control mechanism, Ab production process, its isolation and purification, design methodologies for diagnostic Ab and therapeutic Ab, and the theory of making humanized Ab will be taught. Subordinately, the immune network system and its control mechanism will be discussed to explain how such multipurpose antibodies are involved in the system.

**461,604**  
Biological and Its Application

Postrace development of the bio-informatics that can be found in various fields has to be analyzed and managed. In this class, basic technology for bio-informatics, data mining, collection of bio-information will be introduced for understanding of biomechanism.

**461,605**  
Biological and Tissue Engineering

Bioengineering and tissue engineering focus on the properties of tissues and materials that are not used in the body. These technologies are discussed.

**461,606**  
Biomedical Instrumentation

The aim of this course is to understand the basic principles of biomedical instrumentation and to develop the ability to design a specific instrumentation system, thereby acquiring the aptitudes essential to biomedical engineering majors. We will cover the basic biological and physiological principles to better understand the principles of major instrumentation equipments, and examine the operational principles of various sensors that constitute the instrumentation system and the designing methods of amplifiers. The instrumentation systems discussed in this class include bioelectric signal monitoring systems, other physical sensor systems, chemical sensor systems, and biosensor systems.

**461,607**  
Engineering Aspects of Physiological Phenomena

In this course we will examine the major physiological system of the body from the engineering perspective. We will study the basic mechanisms of the physiological system and apply our understanding to the engineering field. We will represent and analyze information transmissions in the nervous system in terms of mathematical functions, and analyze the transmissions of signs and information in the visual/auditory system from the engineering system perspective.

**461,610**  
Biomedical Signal Analysis

In this course we will examine the major biological signals that are used in the body. We will cover the basic principles of bioelectric signals and the design of instrumentation systems.
461.615 의생명시스템해석 3-3-0

Medical Image Processing

461.616 인공장기특강 3-3-0

Topics on Artificial Organ Research

461.617 의용생체시스템해석 3-3-0

Biomedical System Analysis

461.618 의료정보시스템설계 3-3-0

Design of Medical Information System

461.619 의생생체공학특강 3-3-0

Topics in Biomedical Engineering

461.620 바이오엔지니어링세미나 1 1-2-0

Bioengineering Seminar 1

461.621 바이오엔지니어링세미나 2 1-2-0

Bioengineering Seminar 2
최신의 정보 전달에 중점을 둔다.

The purpose of this seminar is to understand the recent trends in biochemical engineering. The seminar focuses on the development of bioprocesses in which microorganisms, mammalian cells, and plant cells are used. The seminar also covers various cultivation methods.

461.622 바이오엔지니어링세미나 3 1-2-0
Bioengineering Seminar 3

생물공학의 여러 분야에 대한 내용으로 생산공학 세미나 1, 2에서 다루지 않은 부분을 세미나 하도록 한다. 분리공정에 관한 내용, 바이오프로세스, 바이오프로세스, 단백질공학, 유전자조작 기술, 그리고 컴퓨터를 이용한 반응기 자동제어 등의 내용을 고주 세미나 함으로써 생물공학 전반에 대한 최신 기술의 습득을 목적으로 한다.

The purpose of this seminar is to understand the recent trends in biochemical engineering which are not covered in Biotechnology Seminars 1 and 2. Recent trends in bioseparation, biosensor, biopolymer, protein engineering, genetic engineering, computer simulation and monitoring, and the current trends of biotechnology are covered.

461.625 바이오MEMS 3-3-0
BioMEMS

생체 분자와 분자 간 상호 작용의 다양한 측정 및 분리 정제 등을 LOC(Lab. on a Chip), 바이오프로세스, 신경생물의 측정 이론(영상, 질량분석기, 전기적 방법) 등을 도입하여 여러 측정을 할 수 있게 시도하기 위해 다양한 재료를 이용하여 마이크로 및 나노 스케일에서 가능하게 하며, 이를 위한 실리콘, 유리 및 플라스틱 칩 제작기술, 시스템제작기술, 바이오물질의 분리 및 측정에 이용되는 기법의 개념을 학습내용으로 한다.

This course will examine the operational principles and structures of various electronic instruments used in bio-medicine for diagnostic and therapeutic purposes. This course will cover therapeutic system, bioimpedance system, bio-optical system which are usually not discussed in biomedical instrumentation course, and also examine the electrical safety issue in biomedical instruments. Students will be introduced to the design and application of BioMEMS(Bio Micro Electro-Mechanical System) and nanotechnology, increasingly applied in the field of biomedicine. We will also have a survey of general electronic engineering applied in biomedicine.

461.626 생물네트워크의 이해 3-3-0
Dynamical Networks in Biology

생체 및 생명 단백질간의 상호 유기적 연관성을 새로운 네트워크 형성의 관점에서 유기적으로 이해하고, 복잡성과학의 원리에 입각하여 생체생물학을 학습목표로 한다. 유전체학이나 단백질체학을 중심으로 하는 분자생물학 분야에서 사용되는 각종 생체생물학의 구성을 공부하여 생물정보학의 기본 개념을 이해하고, 생물공학 분야에서 사용하고 있는 각종분석정 전자 시스템의 작동 원리를 공부한다.

The purpose of this course is to understand the mutual relationship of biomolecules in the network formation view and to analyze biological events according to the complicated scientific principle. Based on our understanding of genomics and proteomics, we will study the basic concepts and contents in bioinformatics.

461.628 신경공학 3-3-0
Neuroengineering

생체에 대한 연구가 분자 수준으로까지 확대되어 감에 따라서, 이에 관련된 신경공학의 전자공학적인 방법을 중심으로 한 처리 및 분석방법을 공부한다. 이 과목에서는 신경생물학의 기본적인 지식을 학습하고, 신경세포의 구조와 기능에 대해 컴퓨터 시뮬레이션 등의 고전적 기술을 통하여 신경계 형성에 관한 이해를 넘어서 학습목표를 한다.

In this course, we will study neuroengineering based on the electronics approaches to modern biomolecular research. The goal of this subject is to learn the basic concepts of neurobiology and to study the structure and functions of a neuron with engineering`s approaches in the use of computer simulation tool.

461.629 생물전자기학 3-3-0
Bioelectro-magnetic Phenomena

생체에 대한 연구가 분자 수준으로까지 확대되어 감에 따라서, 이에 관한 전자공학적인 방법을 중심으로 한 처리 및 분석방법을 공부한다. 생체내로 유도되는 전기자기현상에 대하여, 이에 공학적 활용 방법에 대하여 공부한다. 전자기학의 기초 개념들을 통해 전자기학의 여러 가지 방정식들에 대한 물리학적 의미 및 수학적 구조에 대한 이해를 학습목표로 한다.

In this course, we will study the electronics-based approaches to modern biomolecular research. The goal of this subject is to learn basically electrical and magnetic phenomena in biology and to study the applications. Additionally, we are going to study the physical, mathematic concepts of the divers equations of electromagnetics.

461.630 마이크로레더와 바이오로봇공학 3-3-0
Diagnostic Ultrasound Theory

생체에 대한 연구가 분자 수준으로까지 확대되어 감에 따라서, 이에 관한 전자공학적인 방법을 중심으로 한 처리 및 분석방법을 공부한다. 생체내로 유도되는 전기자기현상에 대하여, 이에 공학적 활용 방법에 대하여 공부한다. 전자기학의 기초 개념들을 통해 전자기학의 여러 가지 방정식들에 대한 물리학적 의미 및 수학적 구조에 대한 이해를 학습목표로 한다.

In this course, we will study the electronics-based approaches to modern biomolecular research. The goal of this subject is to learn basically electrical and magnetic phenomena in biology and to study the applications. Additionally, we are going to study the physical, mathematic concepts of the divers equations of electromagnetics.

461.631 생체모방학 3-3-0
Biomimetics and Design

생체를 통하여 최적화된 생체 시스템의 여러 가지 기전을 분석하고 정교하게, 이를 모방하여 공학적으로 활용할 수 있는 방법 및 이를 구현 하는 방법론에 대하여 학습한다. 인체 내에 삽입하여 사용하는 의료용구나 인공기기는 생체 내에 설치될 수 있는 기기로, 여러 가지 현상을 이해하고, 이를 구현하는 방법론에 대하여 공부한다. 이 과목은 시뮬레이션의 기반을 제공한다. 과학적, 공학적인 관점에서의 이해가 요구된다.
The goal of this subject is to analyze and evaluate the features of the optimized bio-system through the evolution and to apply this knowledge into different areas. The bio-organs of implantable medical devices or instruments should be free of any properties that arouse adverse reactions in the body such as Hemolysis or undesirable host reactions. The biocompatibility of bio-organs must be improved based on the applications of the latest technology and engineering. This course will introduce the development of bio-organs in the medical fields and provide an overview of the theory and practice of bio-organs.

461.633 비아오센서 및 계측공학 3-3-0

Biosensors and Instrumental Analysis

The goal of this subject is to learn basically physical-chemical concepts and the manufacture methods that are essential to develop and operate biosensors to estimate and to control each variable in bio-process and an organism. In addition to the existing physical sensors, we are going to study novel biosensors made of biomaterial and the engineering applications.

461.634 재활공학 3-3-0

Rehabilitation Engineering

The goal of this subject is to learn the basic technic and its usefulness of rehabilitation engineering. On the foundation of mechatronic and electronic engineering we are going to study how to analyze the human’s movement concerning rehabilitation engineering, and to develop the artificial joint, its diagnosis, therapy, industrial safety, wound precaution research.

461.635 의료기기학 3-3-0

Medical Instrumentation

The goal of this subject is to study the basic concepts of operation, parts of medical instrumentations that are used in disease’s diagnosis and therapy. We are going to learn the therapy system, impedance application system, and optical system in the point of electronic engineering’s view. And we will also learn how to solve the problem that occurs when we try to design and manufacture medical device and study electrical safety.
본 강의에서는 기술경영, 기술경제, 기술정책을 전공하고 전공 자의 기초 소양을 취득 기초 지식 습득을 목적으로 한다. 세부적으로는 기술경영과 관련된 계책, 생산, 마케팅 관리 등
의 분야와 효용적인 자원배분의 관점에서 미시경제학의 여러 주제들을 시장실패를 중점을 두고 하여 다룬다. 주요 강의내용은 기술경영
기본 및 우주정책, 소비자정책, 생산자정책, 독과점정책, 노동경제학, 환경경제학, 자원 경제학 등이며, 임제강의는 수업
진행을 위해 간과되지 토픽의 논문연구와 토론 및 Open Project
을 병행한다.

The purpose of this course is to obtain basic knowledge for technology-related management, economics, and policy through case studies, paper studies, discussion, and open
project on various topics.

463.502 기술경영경제정책방법론 3-3-0
Methodologies for Technology Management, Economics, and Policy

본 강의에서는 기술경영과 효용적인 자원배분의 관점에서 미시경제학의 여러 주제들을 시장실패를 중점을 두고 하여 다룬다. 주요
강의내용은 우주학, 소비자학, 생산자학, 독과점학, 노동경제학, 환경경제학, 자원경제학 등이며, 임제강의는 수업
진행을 위해 간과되지 토픽의 논문연구와 토론 및 Open Project
을 병행한다.

This course deals with microeconomic analysis of market
failures in the sense of efficient resource allocation. Specific
topics will include welfare economics, economics of production,
problems of monopoly and oligopoly.

*463.503 기술경영경제정책세미나 3-3-0
Seminar in Technology Management, Economics, and Policy

국내외 기술정책, 산업정책, 전략운영을 초점을 두어 정책 합안과
문제점, 그리고 그 해결방안에 대한 의견을 듣고 학생들의 자유
로운 토론을 통하여 기술경영 전반에 대한 이해를 넘어서기 위한 과
목이다. 세미나는 소비자 및 산업정책, 전략 및 전략산업정책, 경제 및 산업정책, 화학 및 생명공학산업정책, 기계산업정책,
환경 및 에너지 산업정책, 도시 및 교통정책, 소비 및 해양산
업정책, 원자력산업정책 등 기술정책 및 산업정책 전 분야이다.

This course provides lecturers by guest speakers and seminars
regarding current issues of technological and industrial
policies of both home and abroad. Discussion topics will include
overall industrial policies.

463.504 경영통계론 3-3-0
Managerial Statistics

발대하고 다양한 경영관련 자료의 통계적 처리에 관한 기본이
론과 실제를 통해 자료의 분석능력과 미래예측능력을 배양하고
직관적인 판단자료의 해석기술을 의하여 나아가의 연구개발의 기본기
식을 이해함으로써 체계화하고 과학적인 문제해결능력을 습득한다.

This course reviews basic theories and practical skills of
management and engineering statistics. It covers basic proba-
bility theory, inference and hypothesis testing, correlation
analysis, regression and variance analysis.

학점구조는 "학점수-주당 강의시간-주당 실습시간"을 표시한다. 한 학기는 15주로 구성됨. (The first number means "credits"; the second number
means "lecture hours per week"; and the final number means "laboratory hours per week. 15 weeks make one semester.)
신기술의 개별속성에 대한 소비자의 선호구조를 분석하는데 필요
한 다양한 이산선택모형(discrete choice model)과 이를 추정하는
데 필요한 여러 가지 사례리에이션 기법 및 데이터기반 접근
의 지원이 포함되며, 두번째는 위험함수(hazard function)의 정의에
기반한 광범위한 형태의 확산모형(diffusion model)을 이용한 수
예측모형이 포함한다.

In recent environments that technologies and products are
converged very actively and that demand for new products
are getting more and more diverse, success of new tech-
nologies and new products tends to depend on performance
in the market rather than that in research and development.
Therefore, demand-side analysis and forecasting of demand
for new technologies and products are becoming more and
more important not only to business strategies but also to
national R&D policies. This course will give basic but es-
sential knowledge required to analyze demands of new tech-
nologies and products whose market can be described as rap-
id technology innovation and uncertain market in new tech-
no-economics paradigm. Coverage of the course is separated
into two parts. First part includes various discrete choice
models for analyzing the structure of consumer preferences
for individual attributes of new technologies, and various
simulation techniques and Bayesian approach to estimate
them. Second part includes demand forecasting model using
various diffusion models which are based on hazard function.

463.511 기술사업화론 3-3-0
Technology and Commercialization

다양화, 신속화, 복잡화되는 시장구조와 제품개발과정을 효과적
으로 관리할 수 있는 현대적 기법들을 종합적으로 이해하고 case
와 실습을 통해 신제품개발과 개발기술의 상업화에 대한 이론 및
실무지식을 배양한다.

This course focuses on the commercialization stage of
R&D, and reviews basic theories on market development and
new product launching. It provides a variety of new techni-
ques for market survey, demand analysis, and launching
strategy.

463.512 기술혁신론 3-3-0
Technological Innovation

현재 국내의 기술개발 상황과 기술혁신 상황을 가시적 차원에
서 또는 각 산업별로 사례를 중심으로 강의한다. 가시적인 차원에
서는 현재 국가적 차원에서의 기술발전과 기술혁신 성과를 측정하
고 평가할 수 있는 평가방법(measure)을 어떻게 설정할 것인가에
대한 여러 논쟁을 정리하고 각 평가 방법으로 기술발전 및 혁신정
도를 평가해 본다. 그리고 향후 국가기술발전 전략이라는 차원에
서 어떠한 국가 기술발전 및 혁신전략을 세울 것인가에 대한 각계
의 의견을 종합 비교 분석한다. 각 산업적 측면에서는 해당 주요
산업을 선정하여 각 주요 산업에서의 국내 기술수준과 현황을 파
악하고 현재의 기술수준의 원인을 규명하여 향후 기술발전
전략과 각 기업의 기술개발투자 상황을 분석한다. 본 강의에서는
이러한 사례중심의 교육을 통해 보다 현실감 있고 구체적인 정책
을 도출할 수 있는 인재를 양성하고자 한다.

This course focuses on technological development and in-
novation status of major Korean industries. It provides rele-
vant case studies, discussing how to measure technological
innovation.
This course is designed to recognize the real cases or current situations related to the convergence technologies, and to make students bring up their feelings about the group of industries where convergence technologies are being adopted.

**463.519 기술혁신의 이론과 실제 3-3-0**

*Theory and Practice of Technological Innovation*

This course deals with underlying theories and empirical applications of knowledge management. In addition, this course attempts to provide insights and skills for management strategy. To this end, the curriculum emphasizes the construction of a technology development tree based on a certain technology paradigm. It deals with the problem of linking old and new technologies and also forecasts technological developments.

**463.522 연구개발관리론 3-3-0**

*R & D Management*

This course covers strategic planning in the area of technological development. Specific topics will include R&D portfolios, R&D networking, human power networks, and technology spillovers. The course also addresses expected costs of constructing production systems and man-machine interface.

**463.524 기술경영전략론 3-3-0**

*Strategic Management of Technology*

This course deals with various methodologies for evaluating the value of technology. Specific topics will include industrial standard, rating/raking, discounted cash, and Monte Carlo methods.

**463.525 기술가치평가론 3-3-0**

*Technology Valuation Assessment*

This course reviews basic theories and analysis tools on corporate and technology strategies. It examines how the framework of strategy has changed over time, and highlights new issues of contemporary research on strategic management.

**463.526 지적재산권관리론 3-3-0**

*Management of Intellectual Property Rights*

This course deals with the problem of linking old and new technologies and also forecasts technological developments.
Analysis of Energy Industry

This course reviews basic theories and practical skills for energy industries, based on practices.

Practical Application of Information Technology

This course reviews basic theories and practical skills for information technology. It examines the overall structure and operational scheme of information system of firms. The course also addresses subadditivity, efficiency, privatization, and emission control.

Information Technology Cost Analysis

This course reviews basic theories and practices about price analysis and modelling of telecommunication technologies. It offers relevant case studies and research topics.

Demand Analysis of New Technology

This course deals with engineering and economic aspect of electricity. It covers project evaluation, optimal plant mix, DSM (Demand Side Management), forecasting methods, and IRP (Integrated Resource Planning). The course also addresses shadow price, internalization of social cost.
Information and Telecommunication Industry Policy

This course discusses advanced theories about the information and communication industries. It covers technological backgrounds and characteristics of the industries. The course also deals with the development strategies of information and communication technologies and the analysis of industrial competitiveness.

Special Topics in Technology Management, Economics, and Policy

This course is planned to provide students with the opportunities of studying and analyzing industrial policy and management through the profound case studies.

Seminar on Emerging Technologies

This course provides seminars on emerging trends of next-generation technology.

This course introduces the development trends of computer and semiconductor technologies, along with their convergence and integration. It provides case studies of domestic companies as well as foreign counterparts such as IBM and Microsoft.
omics of business administration is required. This course will introduce common concepts such as the interdependence of technologies, learning by doing, R&D, technology transfer, and will aim to help the students to understand technological progress and economic development.

An introductory course for students who plan to study the management and innovation in healthcare that has a value chain spanning over consumers, payers and insurers, providers of healthcare services, their upstream suppliers and government. The course will provide students with characteristics and general management perspectives of sectors in the industry, theoretical background of healthcare demand and supply, financing mechanisms, and government regulations.

The course is a supervisory class for master/doctoral students preparing theses. The structure and process of the course is customized according to specific needs and characteristics of thesis topics.

The new knowledge, which is produced as a consequence of demand of our society on the peak of digital generation, is 'the convergence of human-centered knowledge'. Although material-centered value was settled down within modern society, happiness of human spirit and life is now becoming the main value of it. However, its measurements and standards that are used to measure value of information still follow material-centered capital and economic principle. Therefore, this class will introduce the necessary principles and theories that are required for academic convergence of digital age. Students will participate in discussion and group project about economic, management, and political issues that our society encounters by using integral convergence theories. They will be able to broaden their understandings about new digital convergence and learn new research methods that can solve the problems of digital society.
This class will provide a foundation in agent-based modeling of socio-economic complex systems consisting of heterogeneous agents with an interdisciplinary perspective. We study how socio-economic networks emerge when agents interact with each other according to different payoff schemes. The class has a theoretical and a tutorial component. The theoretical component includes lectures, readings from textbooks, and research paper studies. The tutorial component includes NetLogo simulation programming assignments and a project. The outcome of the class is an understanding of the relevant issues through lectures and discussions. Furthermore, in addition to using textbooks and academic papers, this course uses a variety of other materials to help students grasp the basic and practical knowledge of technology innovation management. The main topics covered in this course include innovation theory, organizational learning, industrial organization analysis, competitive advantage, diversification, alliances and M&As, and network theory.
본 과목의 목적은 수강생들에게 정부 정책의 사회적 및 경제적 파급효과를 분석할 수 있는 방법론을 교육하는 것이다. 이를 위해 산업연관분석, 연산가능일반균형모형 및 동태확률적일반균형모형과 같은 정책 효과 분석 모델에 대한 이론 및 활용을 위한 지식을 전달하고, 해당 지식을 바탕으로 특정한 산업정책, 환경정책, 에너지정책 등에 대한 파급효과를 분석해 보는 기회를 제공한다. 수강생들은 이를 통해 정부 정책을 모형화하고 그 효과를 분석 및 예측하는 능력을 기울 수 있다.

The purpose of this course is studying methodologies which can analyze social and economic impacts of government policies, and deriving implications for the specific topics by using the methodologies. Students will learn policy impact analysis models such as input-output analysis, computable general equilibrium, and dynamic stochastic general equilibrium. At the end of the semester, a student will have a chance to make his or her own model which can analyze industry, environment, or energy policy. Via this course, students can increase their ability to analyze and forecast policy impacts.
453.501 도시설계스튜디오 1 4-4-0
Urban Design Studio 1

This course focuses on today’s inner-city development. It covers the evolution of urban core areas and urban designing methodologies. The course also addresses urban planning and economy, as well as the culture and history of urban core areas.

453.502 도시설계스튜디오 2 4-4-0
Urban Design Studio 2

This course provides seminars on urban design. Specific topics will include the planning, objectives, major design elements, and urban design history of Korea.

453.503 도시설계스튜디오 3 4-4-0
Urban Design Studio 3

This course addresses the planning and designing of new towns. It covers the identification of such new towns, their relations with neighboring towns, as well as backbone road and mass transportation systems. The course provides relevant group projects.

453.504 도시설계세미나 1 2-2-0
Urban Design Seminar 1

This course addresses the planning and designing of new towns. It covers the identification of such new towns, their relations with neighboring towns, as well as backbone road and mass transportation systems. The course provides relevant group projects.

The course also addresses urban planning and economy, as well as the culture and history of urban core areas. It covers the evolution of urban core areas and urban designing methodologies. The course also addresses urban planning and economy, as well as the culture and history of urban core areas.
교육과정에서의 도시설계 실무적 소양과 능력을 배양하기 위한 실험 스튜디오 과목의 일환으로, 단계별 설계 스튜디오와의 연속성을 유지하면서 도시설계의 외연적 지평을 심화하는 것을 목표로 한다. 도시설계를 통한 도시재생이라는 큰 주제 아래 그 구체적 매개체로서 도시기간의 환경과 생태, 그리고 요소간의 입자 간의 가능성을 설계를 통해 모색하고자 한다. 그림(Gtk) 도시와 자연, 문화와 생태가 역동적이고 탄력적으로 이루어지는 친환경적인 도시환경의 창출을 추구하고자 한다.

This course aims to provide a comprehensive approach for urban design and to enhance the practical capabilities of students. The main theme will be the urban design for the regeneration of city; and the subject will be the possibility and power of open space and/or ecology as an agent for urban regeneration. Thus students can extend their views and ways of thinking into the external realms, such as landscape architecture, ecology, and so on.

수강생들이 도시설계 전공 학생들이 알아야하는 우리나라 경관법령, 경관보전이나 경관 조성 관련 외국법제, 경관계획과 설계 국내외 사례를 숙지하고, 대상지를 선정하여 경관계획과 설계를 실습함으로써, 사회적으로 수요가 계속 증가할 것으로 예상되는 경관계획과 설계 실무 전문성을 갖추도록 교육하고자 한다. 미국 Scenic America나 영국 CPRE (Campaign to Protect Rural England) 같은 전문가/시민 단체가 경관보전과 개선을 위해 수행하는 활동도 학습하여 우리나라에서 “행동하는 경관 전문가”를 육성하는 교육목표도 포함한다.

In 2007, “Scenic Landscape Law” was enacted in Korea, and many local governments prepare and implement scenic landscape plans/designs. The demand for this professionalism is expected to increase. The objectives of this course are; to teach the domestic and overseas laws and regulations; to introduce best examples of scenic landscape plans and designs to the students; and, to train them real world planning and design capabilities. By introducing the professionals/citizens organizations such as “Scenic America” (U.S.) and “Campaign to Protect Rural England” (U.K.), students will be encouraged to promote such partnerships in Korea.
해양공학과 관련된 전반적인 내용을 소개한다. 시추개요, 고정식 및 부유식 해양플랫폼 개요, 서브시공학 개요 등 해양공학과 관련된 전반적인 내용을 강의함으로써 현재 진행되고 있는 여러 해양공학 관련 주제들을 이해하고 학습하도록 한다.

This is an introductory course for general problem in offshore engineering. The course includes the overview of driling fixed and floating offshore platforms, subsea engineering. Through this course, students are expected to learn the overall feature of offshore engineering.

467.504 리스크 공학 3-3-0

Risk Engineering

최근 시스템이 대형화하고 복잡해지면서, 안전사고가 나면 사회에 미치는 영향이 크고, 재난에 대한 사회적 관심도 점점 커지면서, 안전에 대한 의식이 중요해지고 있다. 특히 해양공학은 사고가 나면 인명 피해를 물론 환경오염도 막아내야하며, 설계 시부터 안전문제를 매우 중요하게 고려하지 않으면 안 되고선으로 규정되어 있다. 그래서 본 교과에서는 해양공학의 안전규정이 무엇이며, 안전사고를 어떻게 방지하는 리스크 평가 방법을 설명한다.

Due to the complexity and large scale of system, when accidents occur, the impact on the society is getting huger. Besides, since a social concern on such accidents is greater than before, safety problem is now one of the most important issues. Especially offshore plant accidents yield the huge ocean pollution problems as well as human loss. Thus, safety aspects should be treated as prime targets by international regulations. Thus, in this subject, what kinds of safety codes are considered when designing offshore plant, and how the safety level could be evaluated is explained by various risk assessment methods.

467.505 RAMS 분석 3-3-0

RAMS Analysis

시스템의 효율 측면에서, 신뢰도와 장기성은 함께 연동되어 시스템의 가용도를 결정한다. 가용도가 높은 시스템, 즉 주어진 시간 동안 요구된 임무를 수행할 수 있는 능력이 큰 시스템을 설계하는 것이 RAM 분석의 궁극적 목표라 할 수 있다. 본 교과에서는 RAM 분석을 통해 시스템의 목표능능을 신뢰도, 가용도, 정비도로 표현한, 그 시스템의 수명주기에서 실제 상기 목표를 달성하는지를 확인하는 시스템 엔지니어링 방법론을 설명한다.

With respect to system’s efficiency, system availability is determined by both reliability and maintainability. The ultimate goal of the RAM analysis is designing the system of high availability that accomplishes its required missions during the given period as much as possible. This lecture deals with the RAM analysis, one of the system engineering methodologies, in order to represent the target performance of a system in terms of reliability, availability and maintainability, and to keep checking whether the system achieves such goals during its lifecycle.

467.507 해저공학 3-3-0

Subsea Technology

최근 에너지 고갈로 인해, 석유사원 확보를 위해 점점 확대되어야 되어가면서 자원 확보를 하는데 있어, 필요한 공학 기술로 해저공학 분야가 거론되고 있으며, 조선 산업계에서도 해양분야의 신장성 동력을 확보하는 인원으로 해저공학으로의 관심을 키우고 있다. 따라서 본 교과에서는 해저에서 생산된 석유를 해양해 머 가 있는 플랫폼까지 안전하게 전송하도록 하는 필요에 대한 해양공학의 주요 기능을 설명한다.

Recently, due to the shortage of energy resource, the Oil industry moves into deep water with new subsea technology. Besides the Shipbuilding industry had also expanded its business into the subsea area in the hope of developing a new promising future enterprise model. Thus, in this subject, it is explained first what constituted the subsea production system transporting the oil safely from reservoir to platform, and then main function of subsea production system is described with safety aspects.

467.509 해양플랜트 상부 프로세스 공학 3-3-0

Topside Process Engineering

해양플랜트의 공정에서, 해저공학과의 통합이 더욱 중요하게 되면서, 설계 시부터 안전성과 가용도가 높은 시스템을 설계하는 것이 필요성이 더욱 높아지고 있다. 해양공학과 관련된 시스템의 주요 기능을 설명하고, 해양공학과 관련된 시스템의 주요 기능을 설명한다.

Subsea pipeline design

The subsea pipeline is the key component in offshore development business. To understand the basic and important concept of subsea pipeline design, there are many areas to understand including the necessary offshore survey, is equipment, international codes and standards, governing equations, external loads, pipe materials, etc. From the course, the students will learn the key aspects of subsea pipeline design, installation method, maintenance and repair and design procedure.

467.511 해저배관망 유동 경사성 3-3-0

Flow Assurance in Subsea Flowline and systems

해저 오일 및 가스 생산시스템에서의 유동정상성은 핵심이다. 해저파이프라인의 설계와 관리에 있어서는 기본적인 설계방법, 해양조사, 관련된 시설, 국제 설계코드, 관련 설계이론, 외력, 재료 등을 수립하고 한다. 본 과정에서는 이론 기본적인 지식은 물론 해저파이프 설계방법, 유지/보수, 설계 절차를 포함한다.

The subsea pipeline is the key component in offshore development business. To understand the basic and important concept of subsea pipeline design, there are many areas to understand including the necessary offshore survey, is equipment, international codes and standards, governing equations, external loads, pipe materials, etc. From the course, the students will learn the key aspects of subsea pipeline design, installation method, maintenance and repair and design procedure.

학점구조는 "학점수-주당 강의시간-주당 실습시간"을 표시한다. 한 학기는 15주로 구성됨. (The first number means "credits"; the second number means "lecture hours" per week; and the final number means "laboratory hours" per week. 15 weeks make one semester.)
in-depth knowledge of fluid properties together with hydraulic and thermal analysis of a system. And it develops strategies for control of solids such as hydrates, wax, asphaltenes and scale. Study on the flow assurance makes students to understand subsea production system and its effect on topside design.

467.803 대학원논문연구 1 3-3-0
Dissertation Research 1

특정연구 분야를 중심으로 문헌을 조사하고 연구 과제를 형성한다.
This course provides bibliographical surveys and research projects on special in naval architecture.

467.804 대학원논문연구 2 3-3-0
Dissertation Research 2

특정연구 분야를 중심으로 문헌을 조사하고 연구 과제를 형성한다.
This courses provides bibliographical surveys and research projects on special in naval architecture.

M2742.000100 공정열역학 3-3-0
Process Thermodynamics

For the design of separation equipment on the topside in an offshore platform, it is required to understand not only the equation of state model but also activity coefficient model for phase equilibrium of non-ideal liquid mixture through thermodynamics. In this study, the students who learned basic thermodynamics and equation of state will learn the concept of fugacity and activity and how to use it to describe separation process. Furthermore, this includes reaction equilibrium required for the offshore processes.
농업생명과학대학
College of Agriculture and Life Sciences
500.501 실험설계 3-2-2
Experimental Design

This course provides graduate students with statistical data analysis skills in regression, correlation, and group comparison. This course will also cover the most commonly used experimental designs for single-factor and two-factor experiments with specific emphasis on corresponding randomization, analysis of variance procedures, and computer-based statistical analysis using SAS.

500.505 분자유전학 3-3-0
Molecular Genetics

This course is offered once a year. Students are required to make a presentation in either Korean or English on current articles in related topics. Lectures are given in English using an English textbook. This course is offered every other year.

500.511 농업생태학특론 3-3-0
Topics in Agricultural Ecology

This is an advanced course on the agricultural ecosystem: agricultural climatology and aerial environment, soil characteristics and nutrient flow, light utilization and organic matter production in the crop community. Sustainable agriculture with IPM and precision farming techniques will be emphasized.

500.514 유전자조작론 3-3-0
Gene Manipulation

This course is offered in English every other year. Students are required to make a presentation in either Korean or English on current articles in related topics. Lectures are given in English using an English textbook. This course is offered every other year.

500.517 식물세포공학 3-3-0
Plant Cell Engineering

This course is offered every other year. Students are required to make a presentation in either Korean or English on current articles in related topics. Lectures are given in English using an English textbook. This course is offered every other year.

500.521 세포생물학특강 3-3-0
Topics in Cell Biology

The objective of this course is to cultivate a molecular biology-level understanding of the structure and function of eukaryotes. We will study cell evolution, biochemistry, and the developmental stages of cells and organisms. This course will also encourage an understanding of basic principles of development and cell differentiation during the developmental stages. In the second half of the semester, students will present a report and a seminar in Korean or English on current, related topics. Lectures are given in English using an English textbook. This course is offered once a year.

500.522 분자생물학특강 3-3-0
Topics in Molecular Biology

This course is offered once a year. Students are required to make a presentation in either Korean or English on current articles in related topics. Lectures are given in English using an English textbook. This course is offered once a year.

학점구조는 “학점수-주당 강의시간-주당 실습시간”을 표시한다. 한 학기에는 15주로 구성된다. (The first number means “credits”; the second number means ‘lecture hours’ per week; and the final number means “laboratory hours” per week. 15 weeks make one semester.)
This course helps students understand life phenomena at the molecular level. Lectures cover the basic topics of molecular biology: the structure of prokaryotic and eukaryotic genes, and the mechanism of their expression. In addition, gene cloning and transformation processes will be discussed. As tools to introduce new traits into an organism. Students may actively join the discussion session on the categorized topics and learn how to design experiments, as well as report and discuss the significances of such experiments.

500.523

Topics in Biochemical Engineering

500.524

North Korean Agriculture

500.525

Resource Utilization of Agricultural Byproducts

500.526

Epigenetics

500.527

Instrumental Analysis

5271.624

Ecological Vulnerability & Adaptation to Climate Change

This course helps students understand life phenomena at the molecular level. Lectures cover the basic topics of molecular biology: the structure of prokaryotic and eukaryotic genes, and the mechanism of their expression. In addition, gene cloning and transformation processes will be discussed. As tools to introduce new traits into an organism. Students may actively join the discussion session on the categorized topics and learn how to design experiments, as well as report and discuss the significances of such experiments.

500.523

Topics in Biochemical Engineering

This course covers basic theories, instrumental principles, and modern chemical methodologies. Special emphasis will be placed on two representative classes of instrumental analysis, such as spectroscopy and chromatography.

500.524

North Korean Agriculture

North Korea's agriculture is at the forefront of various challenges, from water, air, soil, and ocean pollution. In wake of such problems, the industry has now focused on the advent of a new paradigm of sustainable agriculture and the recycling of organic byproducts. The topics covered in this course include: Auto Thermal Aerobic Digestion (ATAD) for heat, fermentation processes that produce ethanol, thermo-chemical processes that involve combustion for heat, steam, and electricity, gasification for gas and carbomate gas, methanol, pyrolysis for bio-oil, tar, and char, and anaerobic digestion for methane, carbomate gas, and/or electricity. This course is expected to contribute to the preparations of the '1997 Kyoto Protocol on Climate Change' where Koreans will need to start by 2013 to cut pollution levels by at least 5% to be below 1990 standards. This course will examine new strategies and technological advancements that yield efficient renewable energy in hope of meeting such standards.

500.525

Resource Utilization of Agricultural Byproducts

This course explores various techniques to predict and to

stock, crop, food, and forest industries have been treated by energy-consuming sludge processes and discharged into the ocean, public waterways, landfills, incinerations, and land applications. These conventional methods have led to serious problems involving water, air, soil, and ocean pollution. In wake of such problems, the industry has now focused on the advent of a new paradigm of sustainable agriculture and the recycling of organic byproducts. The topics covered in this course include: Auto Thermal Aerobic Digestion (ATAD) for heat, fermentation processes that produce ethanol, thermo-chemical processes that involve combustion for heat, steam, and electricity, gasification for gas and carbomate gas, methanol, pyrolysis for bio-oil, tar, and char, and anaerobic digestion for methane, carbomate gas, and/or electricity. This course is expected to contribute to the preparations of the '1997 Kyoto Protocol on Climate Change' where Koreans will need to start by 2013 to cut pollution levels by at least 5% to be below 1990 standards. This course will examine new strategies and technological advancements that yield efficient renewable energy in hope of meeting such standards.
assess the ecological vulnerability to climate change and our challenges to adapt ourselves to the climate change impacts. In particular, this course aims to present the theoretical and practical background of climate change vulnerability to facilitate a deeper understanding of various climate change issues and application considerations in a planning perspective, including global-scale issues, ecological impacts, and climate change adaptation policies.
This course encourages students to make presentations and discuss experiences in crop science, including cultivation, physiology, ecology, breeding, and molecular biology, with a specific emphasis on food, industrial, and forage crops.

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본 과목에서는 다양한 기생식물의 생리적 특성과 잡초의 생물학적 특성, 잡초 발생과 생태적 관리에 관한 지식을 습득한다. 세계적 문제점을 염두에 두고, 제어 및 방제에 관한 접근 방식과 제초제 저항성 잡초의 발생 원인, 제초제 절약성 작물의 생태적 위험성을 논의한다.

This course emphasizes the biology and ecology of weeds as they relate to efficient weed management and environmental protection. Seed germination and dormancy, growth and development, reproduction and dispersal, interaction of weeds and crops, and natural succession are examined with case studies of the worst weeds in the world. The biological control of weeds, plant quarantines, risk analysis of invasive alien and parasitic weeds, herbicide-resistant weed evolution, and ecological risks of herbicide-resistant crops are also discussed.

This graduate course covers chromosome cytogenetics. The students will acquire detailed information of the structural differences within a chromosome (euchromatin & heterochromatin), structural changes (deletion, duplication, inversion, translocation), and numerical change (euploidy, aneuploidy). Gene mapping and translocation of useful genes using the chromosomal techniques and apomixis are included.
This course focuses on the development and application of mathematical, mechanistic, single process, and system models for simulation of crop-growth processes. Emphasis is on the analyses of crop/weather interactions on phenological development, biomass production and partitioning, and yield.

### 501.711 Seminar in Agronomy 3

**Lecture in Agronomy 3**

This course provides students with presentation and discussion experience in crop science, including the areas of cultivation, physiology, and ecology.

### 501.713 Crop Ecology

**Crop Ecology**

Crop ecology is the study of the interactions between crops and their environment. This course covers the origin of genetic variability, natural selection, changes in genetic composition of populations, species concept, mechanism of speciation in plants, and the origin and domestication of crops. Students will broaden their understanding of plant evolution and crop domestication.

### 501.715 Mode of Action of Herbicides

**Mode of Action of Herbicides**

This course examines the action of formulated herbicides in soil and water, on plant surfaces. We also study plant uptake, translocation, disrupting actions, and the fate of herbicides. Screening of chemicals for a herbicide, the registration procedures and requirements, and biochemical and molecular aspects of herbicide-resistant weeds and crops are also discussed. Modern techniques studying the herbicide movement and the fate of the environment, modes of action and fate of herbicides in plants, and an evaluation of herbicide resistance are introduced.

### 501.717 Biometrical Genetics and Breeding

**Biometrical Genetics and Breeding**

This course covers breeding theory, which includes genetic composition of populations, genetic variability, genetic analysis of agronomic traits, genotype and environment interaction, heritability and repeatability, path analysis, diallel analysis and selection index.

### 517.513 Topics in Plant Breeding

**Topics in Plant Breeding**

This course is aimed at preparing graduate students for research and professional activities in plant breeding. It covers the origin of genetic variability, natural selection, changes in genetic composition of populations, species concept, mechanism of speciation in plants, and the origin and domestication of crops. Students will broaden their understanding of plant evolution and crop domestication.

### 517.721 Crop Proteomics

**Crop Proteomics**

This course is aimed at preparing graduate students for exciting and challenging world of proteomics research by offering reports and methodologies that are given by world leaders. This course covers the origin of genetic variability, natural selection, changes in genetic composition of populations, species concept, mechanism of speciation in plants, and the origin and domestication of crops. Students will broaden their understanding of plant evolution and crop domestication.
초근의 유전체 연구 진보 속도는 매우 빠르며 연구의 내용 또한 비약적으로 변화하고 있다. 작물의 유전체 연구 또한 매우 벌리 진보하고 있으며 새로운 유전체 연구 기술 및 활용할 수 있는 연구 내용들이 발표되고 있다. 본 강좌에서는 작물 유전체 해독 연구의 내용 및 이를 바탕으로 한 작물 연구의 현황을 목적으로 최근 유전체 연구 동향 및 신기술들을 소개하고 연구 논문들을 구의 이해 및 이를 바탕으로 한 작물 연구의 향상을 목적으로 최신 연구를 발표한다.

이 강좌는 그 진행 방식과 주요 내용에 대해 다음과 같다.

1. 작물의 유전체 연구 진행 방향과 주요 진행 상태
2. 유전체 연구에 따른 작물 개량의 실제 활용
3. 유전체 연구의 이해 및 적용을 위한 실제 교육

이와 같이, 본 강좌는 작물 유전체 연구의 정책과 실제 적용 방안을 제공하여 학생들이 학문적 이해와 실무적 적용을 할 수 있도록 한다.
Advanced Protected-Horticulture

This course will provide graduate students with detailed information on ornamental plants such as shade trees, conifers, flowering trees, turfgrass, and on garden covers used for landscaping purposes. Topics include their use and function, differentiation and characteristics, growth and environmental control, and biotechnology; introduction and discussion of various plant breeding methods used; and the future of horticultural breeding.

Advanced Landscape Plants

This course provides students with presentation and discussion experience in horticultural science and biotechnology, including horticultural crop cultivation, physiology, ecology, molecular biology, breeding, postharvest physiology, and environmental control for protected cultivation. Writing and presentation of a special topic related to horticultural science and biotechnology will be assigned to each student. There will be research planning, method establishment, result interpretation, and presentation using various multi-media tools.

Seminar in Horticultural Science and Biotechnology 2

This course provides students with background to commercial practice and research related to the postharvest technology of harvested horticultural products. Assignments emphasize research papers related to postharvest technology. The results of the assigned papers are discussed and evaluated in class. Subjects include procedures of harvesting, preparation, packaging, transportation, and storage in relation to commodity requirements.

Plant Factory Study

This course provides a background to commercial practice and research related to the postharvest technology of harvested horticultural products. Assignments emphasize research papers related to postharvest technology. The results of the assigned papers are discussed and evaluated in class. Subjects include procedures of harvesting, preparation, packaging, transportation, and storage in relation to commodity requirements.
This course aims to teach the following areas: types of plant factories, relationships among environmental factors and crop growth, design of plant factories, soilless culture techniques, environmental control methods, plant production and automation technologies in various systems, analysis of light sources, and efficient lighting methods. Micropropagation systems, seedling production systems, and plant production systems in urban areas and ecologically closed systems will be reviewed.

### 502.615 Chemical Control of Horticultural Crops

Plant hormones play a crucial role in controlling the way plants grow and develop. The physiology and biochemistry of plant growth regulators are examined in this class. Subjects to be covered include auxins, gibberellins, cytokinins, abscisic acid, ethylene, and other minor regulators including polyamines, jasmonates, brassinolides, and salicylic acid.

### 502.616 Environmental Horticulture

This course provides physiological and biochemical information for environmental stresses on horticultural crops, and deals with the responses of horticultural crops and their defense mechanisms to various environmental stresses including chilling, freezing, drought, high salt, flooding, heavy metals, and air pollution. Perception and transduction of environmental stress signals and subsequent gene expression will also be described.

### 502.618 Physiology of Flowering

This course aims to provide students with recent information on how plants flower, including the effects of many factors such as light, temperature, nutrition, water, juvenility, and hormones. Not only basic flowering physiology but also manipulation of flowering for commercial plant production will be covered. Detailed flowering physiology and techniques for certain crops will be also included during the class.

### 502.621 Soils Culture

- Methods of control
- Plant production techniques
- Environmental control
- Plant production systems
- Computer application
- A summary of the latest research

### 502.624 Reproductive Physiology of Horticultural Crops

- Flowering physiology and techniques for certain crops
- Environmental control
- Environment and growth
- Environmental control
- Plant production systems
- Computer application
- High-technologies in this research field
502.716A 원예생명공학세미나 4 1-0-2

Seminar in Horticultural Science and Biotechnology 4

본 과목에서는 원예작물의 재배, 생리, 생태, 육종, 분자생물학, 수확후 생리, 시설환경조절 등의 관련한 연구과제에 대해 발표와 토론을 하도록 한다. 각주에 합당한 원예생명공학 분야의 이론과 실제를 탐구하고 보고서를 작성함으로써 실제 응용에 적용할 수 있는 가능성들을 정확히 분석하고 이들 발전의 뒷받침이 되는 학술적 및 기술적 진보를 추정한다.

502.718A 식물분자육종학 3-3-0

Plant Molecular Breeding

원예작물육종학에 대한 최근 연구동향을 숙지하기 위하여 세계적인 학술지에 발표된 관련 전문학술논문을 소개하고 이에 대한 심층적 토의를 하며, 원예작물육종의 세계적인 발전주제를 정리 분석하고 이를 발전의 방향으로 하는 학술적 및 기술적 전망을 제시한다. 주요 강의 내용은 유전자의 구조, 발현 및 조절에 대한 최근 이론, 혁신적인 유전적 변이의 창성 방법, 식물과 생화학적 생물학의 상호작용 및 생명공학적 기법의 육종적 활용 등을 강의한다.

By reviewing the recent research articles from both domestic and international journals, this course familiarizes graduate students with trends in horticultural crop breeding. The main topics will be structural and functional genomics, reproductive methods in creating genetic variation, interaction between plant and pathogenic microbes, application of biotechnology to plant breeding, and others.

502.719 원예산업생물학최신과제 3-3-0

Issues in Postharvest Physiology

원예산업생물학의 최근 연구동향과 최신 연구 정보 수집을 위해项链과의 주 대상으로 초화류, 화목류, 난초, 관엽식물 그리고 선인장 및 다육식물 등 화훼작물과 관련된 화훼 연구 및 기술개발에 대하여 다룬다. 외국의 대학 및 연구소, 국내 대학 및 연구소에서의 관련 연구 상황을 살펴보며 최근 연구 동향을 파악하고 이에 대한 논문작성 및 발표를 개발하고자 한다.

This course provides graduate students with recent research and development of horticultural crops. By reviewing the recent research papers from universities and research stations in Korea and other countries, the students will be informed of the latest research trends and developments in this field.
formed about current issues, development of new theories and techniques, and new floricultural crops.

5172.723 Turfgrass Science

This course is provided for graduate and undergraduate students majoring in Landscape Horticulture, Landscape Architecture or related fields to understand the science and use of turfgrass. This course consists of the use, botanical characteristics, classification, growth and environment, establishment methods and maintenance of turfgrass. The course includes field trips to sports fields and golf courses.

5172.724 Plant-environment Control and Modelling

The intents of this course are to teach the theories for plant-environment control and the modelling of plant response to environmental factors. They include environmental factors affecting crop growth, analysis of micro-meteorology, prediction of environmental changes, measurement of environmental and biological information, and theory of environmental control methods. Modelling of plant growth, photosynthesis, stomata resistance, moisture of substrate and other plant responses to environmental conditions are studied. For practical purposes, their applications to micropropagation systems, greenhouse, soilless culture, and other crop production in closed ecosystem will be reviewed.

5172.725 Industrial Development in Olericulture

This course covers the following subjects: (1) Breeding and cultivation techniques and current status of horticultural industry, (2) breeding and cultivation of (both international and domestic), (3) the scope of world markets and global trend of horticultural companies, (4) importance and utilization of genetic germplasms and agricultural materials; (5) introduction and discussion of various plant breeding and cultivation techniques (6) field training for the horticulturist.
본 과목은 식물의 주변 환경으로부터 신호를 인지하고 정확히 반응하도록 활용하는 세포 소통 시스템에 대한 이해를 목표로 한다. 학생들은 식물세포 내에서 일어나는 신호인자, 이에 따른 핵 내 활성의 리프로그레밍, 반응 집적의 최적화를 포함하는 신호전달 과정에 대해 배우게 된다. 수업 외의 논문 연구와 발표를 통해 물리적, 화학적, 위험 요소에 대한 세포 반응을 분자 수준에서 살펴볼 예정이다.

This course presents the cellular communication systems that plants use to perceive and correctly respond to their environment. Students will learn about signal transduction in the plant cell from the stimuli perception to the reprogramming of nuclear activities and adequate integrated responses. Cellular response to physical-, chemical- or danger-stimulating factors will be examined at the molecular level through lectures combined with critical reading and presentation of scientific literature.
This is a study in advanced theories of microeconomics. Topics include mathematical backgrounds of microeconomics, production economics, consumer behavior, the household production model, economics of uncertainty and information as well as general equilibrium and welfare economics.

520.502 Studies in Applied Microeconomics

This course deals with advanced theories of production economics. Topics include dualities of production theory, the over-lapping generation (OLG) model, and the applied general equilibrium (AGE) model.

520.503A Studies in Production Economics

This class focuses on human resources, analysing related economic theories, empirical studies, and relevant system and policies. Major topics include human capital investment and its economic outcome, labor supply and demand in the labor market, the determinants of productivity and earnings, unemployment, wage differentials across different subgroups, the role of human resources and their competitiveness in agriculture.

520.505A Applied Risk Analysis

This course will examine various advanced theories of decision making under uncertainty. Topics include theory of probability, expected utility hypothesis, portfolio analysis, and farm planning under uncertainty. A special focus is given to the empirical application of such methods.

520.507 Agricultural Price Analysis

This course will examine various advanced theories of risk analysis. Topics include dualities of production theory, the over-lapping generation (OLG) model, and the applied general equilibrium (AGE) model.
with a discussion on agricultural land, labor and finance policies. Topics include the agricultural price stabilization policy, agricultural institutions and law, the WTO agreement on agriculture, and the agricultural policies in foreign countries.

520.602 Agricultural Futures Market Analysis

Agricultural Futures Markets

This course is designed for studying major agricultural development theories and development policies. Major topics include induced innovation theory, foreign direct investment (FDI), technology based trade theory, and the public choice model. Some econometric models that deal with agricultural and rural development will also be covered. After reading a wide range of literature on these topics, students will try to create positive suggestions and ideas for Korea’s agricultural development.

520.606 Studies in Agricultural Finance

520.603 Studies in Environmental Economics

Studies in Environmental Economics

This course examines both theoretical and empirical literature on commodity futures and options markets. The class will focus on supply of storage, basis models, theory of firm and hedging under uncertainty, optimal hedging, speculative returns, market performance, pricing efficiency, and option pricing.

520.603A Studies in Agribusiness and Food System

Studies in Agribusiness and Food System

This course deals with the advanced theories and applications of environmental economics. Topics include theories on externality and environmental policies. Also included are environmental policies under uncertainty and asymmetric information, economics of liability rule, monitoring, the impacts of environmental policies on productivity change, environmental policies of an open economy, theories of welfare measurement, and methodologies of evaluating environmental goods such as the travel cost method, the hedonic price measurement, and methodologies of evaluating environmental policies under uncertainty and asymmetric information.

520.604A Advanced Agricultural and Food Marketing

Advanced Agricultural and Food Marketing

This course deals with the advanced marketing theories such as marketing channels, organizations, and margins, vertical integration, branding, post-harvest technology, consumer behavior, and research methods. (pre-requisites: 5201.305A)

520.605 Studies in Agricultural Development

Studies in Agricultural Development

This course examines advanced theories of regional economics. Topics include locational analysis, spatial equilibrium analysis, regional economic dynamics and development policy as well as regional economic modeling and econometrics.
대학원(Graduate School)
농경제사회학부(Dept. of Agricultural Economics and Rural Development)
을 연구하는 것을 그 목적으로 한다. 특히 지하자원을 비롯한 재생불가능자원과 수산자원, 수자원, 임업자원 그리고 기타 야생자원 및 농업자의 이용에 적용된 최신 분석기법들을 연구하며, 분석
기법으로는 최적제어이론이나 동태계획법 등과 같은 동태최적화기법과 아울러 게임이론이나 세대교차모형과 같은 균형이론이 함께
이용된다.

This class covers advanced theories of natural resource economics. Topics include continuous-time dynamic optimization and its applications to natural resource use, discrete-time dynamic programming and natural resource use, dynamic programming under uncertainty, analysis of comparative dynamics, game theoretic modeling of natural resource use, overlapping generations models of natural resources, continuous-time dynamic programming with stochastic processes, and analysis of irreversibility.

520.610A 응용기술경제학연구 3-3-0
Studies in Applied Economics of Technology
본 교과에서는 경제학 이론과 실증연구를 토대로 기술혁신의 메커니즘과 경제적 파급효과를 분석한다. 기술진보의 원인과 결정
요인, 기술진보와 경제성장 및 산업구조간의 관계, 기술진보의 노 동시장에 대한 영향, 한국 산업의 R&D와 기술경쟁력, 기술혁신
관련제도 및 정책 등을 심도 있게 분석한다.

This class analyses the mechanism of technological innovation and its economic effects, based on the economic theory and relevant empirical studies. Major topics include the sources and determinants of technological advancement; the economic effects of technological development in the realm of economic growth, industrial structure, and the labor market; the role of R&D in enhancing the industrial competitiveness, and technological innovation system and related policies.

520.701 농업경제학세미나 1 3-3-0
Seminar in Agricultural Economics 1
다른 과목에서 배운 계량적 분석방법을 현실 농업문제에 응용
한다. 비교정학(comparative statics)에 의한 모형분석, 간단 필터
(Kalman filter), 뉴럴 네트워크(neural network), 유전자 알고리
즘(genetic algorithm), 부트 스트랩(bootstrapping), 커널 추정
(kernel estimation) 등을 다룬다.

This class focuses on the application of materials covered in theory classes. Quantitative methods of agricultural economics, comparative static analysis, the Kalman filter, Neural network, genetic algorithm, boot strapping and kernel estimation are some of the applications that will be studied in this course.

520.703 지역개발연구 3-3-0
Advanced Regional Development
농촌의 경제사회적인 총체적 개발을 목적으로 한 개발과정의 촉진과 인간자원의 개발을 위한 재정적 요인과 제 외인적 요인
을 총체적인 국가사회 발전의 태두리 안에서 분석 응용하는 데 특히 개발도상국의 경우에 중점적 관심을 배준다.

This course studies various advanced theories on regional development. Topics include the objectives of regional development policies, regional labor market analysis, regional innovation structure, and regional development policies in developing countries.

520.705 응용량계통계학 3-3-0
Applied Econometrics
경제학 기분이론, 농산물 가격론, 생산경제학, 동계학, 경제수학 등을 응용하여 농업경제 현상에 관련된 경제변수들의 관계를 추정
하고 예측하는 방법을 익힌다. 주로 시계열 분석법을 다루며, 자
회귀모형, 아동평균모형, 벡터자기회귀모형, 단위근검정, 조건부
분산의 자기회귀, 공적분모형, 오차수정모형 등을 학습한다.

This class on applied econometrics will study the application of basic economic theories, agricultural price theory, statistics and mathematics to forecast real world phenomena. Also examined will be time series analysis and the unit root test. In addition, various types of models will be analyzed, including the auto-regressive models, moving average models, ARCH models, co-integration models, and error correction models.

520.706 농산물무역정책연구 3-3-0
Studies in Agricultural Trade Policy
이 과목은 주요 무역정책분석을 위한 광범위한 방법론을 공부
하게 된다. 주요 주제는 다음과 같다. 무역정책의 계량화 방법, 왜곡
된 경제환경하에서 후생변화 측정방법, 사회회계행렬 분석, 부분
균형모형, 농업분야분석을 위한 일반균형 모형, 다시장-지역
부 분균형 모형, 다지역 일반균형 모형.

This course deals with various applied methods for trade policy analysis. Some major topics include the following: quantifying commercial and trade policies; measuring welfare changes with distortions; social accounting matrices (SAM); partial equilibrium modeling; agricultural sector-focused general equilibrium modeling; multi-market and multi-region partial equilibrium modeling; and the multi-region general equilibrium modeling.
This course will be divided into two areas of study, namely housing and demography. Demographic contents of this class are population growth, growth factors, demographic tendency, migration, and residential mobility. Contents of housing include, provision and distribution, financing like mortgage systems, and housing preferences and consumption. Finally, the class will examine the population and housing policies by various levels of governments.

This course is a graduate level course. It provides advanced knowledge of research methods in the area of food business for graduate students. The course covers diverse topics associated with research methods, including Regression under Non-Ideal Conditions, Time Series Analysis, Qualitative Variable Analysis, Decision Trees, Bayesian Classifier, Neural Network, K-Nearest Neighbors, K-N, K-Means, etc. It also demonstrates how the CGE models can be applied to various fields such as applied general equilibrium modeling, food business, and agricultural economics. Students will learn the theories and exercise the methods with their own data to develop international level publication quality.
are applied to spatial issues such as resource allocation, price controls, regional investments and transportation planning.

**M1683.001400**

### Economics of Regional Growth and Location

This course is focused on spatial analysis of land use for urban and rural areas with developing model of monopolistic competition, core-periphery model for urban and rural areas, location model of public facilities for urban and rural areas and spatial models of urban and rural systems. It also deals with regional specialization and endogenous growth model, applying market size and price analysis to urban and rural areas.

### Application of Spatial Econometric Models

The purpose of this course is to provide knowledge about recent advanced econometric techniques in divers spatial settings. The major contents of this course comprise heckman type selection model, bivariate probit with selection, multinomial logit with selection, structural probit with selection, multi-level linear/logit, spatial expansion model, spatial logit/probit, spatial error model, general spatial model, drifted multi-level linear/logit, spatial logit with selection, structural probit with selection, etc.

### Applied Economic Modelling for Sustainability

The most important factor for measuring sustainability is the development of innovative theories and solutions that would be helpful for overall evaluation of sustainability. This course introduces 1) methods of measuring sustainability using sustainability indicators and economic and sociopolitical index, 2) natural limits to development and the theory of sustainable corridors, 3) dynamic system models and their application, and 4) economic models of sustainable development policy.

### 5202.758  공간경제연구 3-3-0

**Studies in Spatial Economics**

This course reviews the theoretical basis of spatial economics based on recent research projects and the development and application of quantitative methodologies.

### 5202.759  지속가능경제개발과정책 3-3-0

**Sustainable Economic Development and Policy**

This course examines the relation between economic development and environmental degradation and also reviews current and proposed policies for sustainable development. The regional scope of sustainability issues includes both developed countries and developing countries and students will study the social, economical, technical and political aspects of the accomplishments in sustainable economical development.

### 5202.760  전략적정보시스템 의사결정 3-3-0

**Strategic Information Systems Decisions**

This course addresses the question, why is it that some organizations get mostly headache from their information systems, while others gain significant competitive advantage? What differentiates the winners from the losers? The course is organized around a series of management and business questions such as: Which systems should be adopted for competitive advantage? When should a company adopt open versus closed systems? How can a firm cope with technological innovations? How and when should systems be deployed? And, who should be making all these decisions, anyway? The goal of the course is to equip managers with the ability to focus on what really matters regarding the information systems resource, and to be among the “winners” in its use.
The objective of this course is to provide students with diverse topics in the area of information management in food business. Students are requested to review articles from classic to current topics in the area. This course covers many different but associated topics, including Management information systems, information policies, user behavior, e-business, technology management, web 2.0, etc. in food business.

M1683.000600 농식품정보시스템연구방법 3-3-0

Research Methods for Agro-Food Information System

본 교과목은 농식품정보시스템연구와 관련된 논문의 이해에 필요한 연구방법론의 학습을 목표로 한다. 주로 다루는 방법론은 계량분석 기법으로, 기술통계, 확률분포(이산, 연속), 표본분포, 추정 및 검정, 분산분석, 단순회귀분석, 종회귀분석, 범수정량자료분석, 비모수적추론, 표본조사, 시계열분석 등의 이론과의 STATA, SAS를 이용한 실습으로 구성된다.

This class is for graduate students to learn quantitative approaches in order to understand research papers in agro-food information system. The major contents of this class are technical statistics, probability distribution, simple regression analysis, multiple regression analysis, categorical data analysis, time series models. This class also emphasizes the understanding of the application of diverse statistical packages such as STATA, SAS.

M1683.000700 농식품전자상거래연구 3-3-0

E-Business Studies in Agro-Food Industry

대학원 과정에서의 농식품 전자상거래를 위한 이론과 기술에 대한 학습과정을 제공한다. 매 수업시간중 30분 정도 전자상거래 분야의 연구논문을 읽고 토론을 진행한다. 현실 시장에서 적용되는 전자상거래의 실제, 농식품 전자상거래의 특성, 인터넷마케팅, CRM과 SCM, 농식품 전자상거래시스템 설계, 농식품 전자상거래시스템 개발, 모바일커머스 이론과 기술, 농식품 전자상거래의 미래에 대해 전문적이고 기술적인 내용을 강의한다. 또한 전자상거래의 선도기업들의 사례를 소개하여 실제 현장에서 고려해야 할 요소들의 전략적 방향을 제시한다.

This graduate class provides students with advanced methodologies for e-business management and technologies in agro-food industry. All students read papers in e-commerce in advance, and every class has a discussion session for about 30 minutes. Applied concepts of e-business, current market conditions of e-business in agro-food industry, internet marketing and processing, practices of CRM and SCM, e-business design, e-business system development, are the major components of this class. Also, this class introduce the cases of frontier companies in e-commerce to provide the knowledge about considerations for actual field business and strategic directions.
본 과목의 목표는 식품 관련 소비자의 행동에 영향을 주는 정보가 무엇인지 보여주는 것이다. 식품 포장, 라벨, 인증, 광고, 홍보 등의 정보 요소가 소비자들의 식품 선택, 구매, 섭취 행동에 어떤 영향을 주는지 다양한 연구들을 바탕으로 그 경향을 파악한다. 또한 인터넷에서의 식품 소비자 정보 탐색 연구를 통해 다양한 환경에서의 소비자의 인지, 심리, 행동에 관한 이해를 한다.

The main goal of this course is to investigate the influence of information on food-related consumer behavior. Through a literature review, various information factors, such as food package, label, certificate, advertisement, PR, etc. will be explored to find their impacts on consumer behaviors, including food choice, purchase, and intake. Also, a deep understanding of consumer cognition, psychology, and behavior will be achieved through an investigation of food related consumer’s information seeking in various environments such as online, etc.

이 강의에서는 지역, 농촌, 도시 등 다양한 수준의 공간에서 일어나는 경제 성장과 쇠퇴, 분배와 집중 등을 분석할 수 있는 지역 간 다부문 경제 시스템을 이해하고 실증 문제를 계량적으로 분석하고자 한다. 경제 시스템 개발 주제는 자료의 구축, 모형의 설계, 모수의 추정, 산업 및 지역 간 연계 방법, 공간 접근성 및 국경 효과의 추정, 불완전 경쟁과 집적 경제, 다지역 및 다부문 모형의 개발, 수리모형의 불확실성 및 동태적인 유형, 모형의 경제 및 동태 분석, 민감도 분석 등으로 구성된다. 이러한 방법론은 지역 및 농촌의 고령화와 인구 감소, 지역경제의 자생성 및 지역화복력, 경제적 총적 및 탈산업화, 자연재해, 지역간 두뇌 유출 등 주요 공간 경제 문제에 적용하여 문제의 원인과 결과, 대응 방안 등을 진단한다.

The course is focused on all the tools for constructing and implementing large-scale multi-regional and multi-sectoral dynamic inter-temporal general equilibrium models for policy analysis. The topics include data structure and model design, estimation and calibration, industrial linkages and spatial interactions, spatial accessibility and border effect, imperfect competition and increasing returns, multi-sectoral and multi-regional modelling, uncertainty and dynamics, forward and backward-looking expectations, finite-horizon approximation of infinite-horizon dynamics, and sensitivity analysis. The models are applied to major regional economic issues such as population ageing, brain drainage, regional resilience and disaster, financial and economic shock, and uncertainty to examine their cause-effects and policy implication.
5241.500  
**Wildlife Management**

This course will cover habitat components, population dynamics and analysis, animal behavior, etc. as the basic steps for designing efficient wildlife management plan. The knowledge taught in class will be utilized outside in the field researching wildlife.

5241.504A  
**Population Genetics in Forest Trees**

This course uses basic chemistry, physics and mathematics to explain and develop concepts for an understanding of various areas of tree physiology. This course covers the physical environment in which trees and other living organisms live. In addition this course considers the physics of heat and mass transport between trees and their surroundings. Also this course discusses physiological processes such as transpiration and photosynthesis from physical and chemical point of views.

5241.505  
**Topics in Tree Physiology**

This course is for students who are studying for a master degree. Lectures on writing a research proposal will be given. Experts in the various forest science field are invited to introduce current trend and topics of the specific field to students. Students are required to present his or her research proposal and also to present a seminar on the topics which is related to his or her research project or majoring field.

5241.506  
**Topics in Wildlife Management**

This course will be utilized outside in the field researching wildlife. The knowledge taught in class will be utilized outside in the field researching wildlife. The course will cover habitat components, population dynamics and analysis, animal behavior, etc. as the basic steps for designing efficient wildlife management plan. The knowledge taught in class will be utilized outside in the field researching wildlife.

5241.507  
**Topics in Wildlife Management**

This course will cover habitat components, population dynamics and analysis, animal behavior, etc. as the basic steps for designing efficient wildlife management plan. The knowledge taught in class will be utilized outside in the field researching wildlife. The course will cover habitat components, population dynamics and analysis, animal behavior, etc. as the basic steps for designing efficient wildlife management plan. The knowledge taught in class will be utilized outside in the field researching wildlife.

5241.510  
**Population Genetics in Forest Trees**

This course covers the theoretical and experimental results of population genetics and quantitative genetics. Students will learn how populations genetically change due to the evolutionary forces such as mutation, selection, migration, and genetic drift. Hardy-Weinberg' Law, the genetic changes in the small populations, and the effective population size, the nature of continuous variation and quantitative traits, the inheritance of quantitative traits, genetic value and breeding value, genetic variance and polygenic variance, heritability, the principles of selective breeding, genetic responses to selection, genetic gain, correlated responses, the consequences of inbreeding and cross breeding are the important topics. Students also will learn how to apply the theories and the experimental results to planning a breeding program and establishing of a conservation strategy.

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<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>3-3-0</td>
<td>Population Genetics in Forest Trees</td>
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<tr>
<td>3-3-0</td>
<td>Topics in Tree Physiology</td>
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<tr>
<td>3-3-0</td>
<td>Seminar in Forest and Environmental Science 1</td>
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<tr>
<td>3-3-0</td>
<td>Seminar in Forest and Environmental Science 2</td>
</tr>
<tr>
<td>3-3-0</td>
<td>Forest Stand Dynamics and Regeneration</td>
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</tbody>
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*Note: Lectures on writing a research proposal will be given. Experts in the various forest science field are invited to introduce current trend and topics of the specific field to students. Students are required to present his or her research proposal and also to present a seminar on the topics which is related to his or her research project or majoring field.*
5241.513 야생동물생태학특강  3-3-0

Topics in Wildlife Ecology

이 과목에서는 야생동물 보존의 관점에서 크게 야생동물과 서식환경관련의 관계를 다루는 학문이다. 생물학적인 관점에서 시작하여, 일반적인 야생동물과 산림환경입지를 이해하고, 야생동물 보호법 및 정책을 이해하도록 한다. 본 강좌의 학습목표는 조류, 간벌이나 개벌, 잔디개철 등의 인위적인 활동이 산림생태계의 수문 및 수질과정에 미치는 영향을 정량적으로 평가하는 것이다. 산림생태학의 수문수질학 및 정량적으로 평가하기 위한 실험에 대한 강습과, 층별 및 종별, 토양조의 수문이동, 지표류층 및 지하수유출 등에 대하여 이론적 고찰을 시도한다. 그리고 이와 다를 수 있는 기계적 기법 및 국제적인 협약에 대한 토론을 실시하여, 야생동물 보호법 및 정책을 이해하도록 한다.

5241.516A 산림유역관리 및 모델링  3-3-0

Forest Watershed Management and Modeling

본 강좌의 학습목표는 조류, 간벌이나 개벌, 잔디개철 등의 인위적 활동이 산림생태계의 수문 및 수질과정에 미치는 영향을 정량적으로 평가하는 것이다. 산림생태학의 수문수질학 및 정량적으로 평가하기 위한 실험에 대한 강습과, 층별 및 종별, 토양조의 수문이동, 지표류층 및 지하수유출 등에 대하여 이론적 고찰을 시도한다. 그리고 이와 다를 수 있는 기계적 기법 및 국제적인 협약에 대한 토론을 실시하여, 야생동물 보호의 관점에서 크게 야생동물과 서식환경관련의 관계를 다루는 학문이다. 생물학적인 관점에서 시작하여, 일반적인 야생동물과 산림환경입지를 이해하고, 야생동물 보호법 및 정책을 이해하도록 한다. 본 강좌의 학습목표는 조류, 간벌이나 개벌, 잔디개철 등의 인위적인 활동이 산림생태계의 수문 및 수질과정에 미치는 영향을 정량적으로 평가하는 것이다. 산림생태학의 수문수질학 및 정량적으로 평가하기 위한 실험에 대한 강습과, 층별 및 종별, 토양조의 수문이동, 지표류층 및 지하수유출 등에 대하여 이론적 고찰을 시도한다. 그리고 이와 다를 수 있는 기계적 기법 및 국제적인 협약에 대한 토론을 실시하여, 야생동물 보호법 및 정책을 이해하도록 한다.

5241.517 산림자원정책학특강  3-3-0

Topics in Forest Resources Policy

본 강의는 학부과정의 자연환경정책학 및 실습에서 학습한 내용을 바탕으로 산림자원의 이용과 보존을 위한 문제들에 대해 논의하고, 이러한 문제들을 이해할 수 있는 능력을 키우는 것을 목표로 한다. 이를 위해서 국내외 산림정책의 역사와 현재 진행되고 있는 산림관련 이해갈등이나 정책과정을 중심으로 상세분석을 시도한다.

5241.518A 산림생태계경영학특강  3-3-0

Topics in Forest Ecosystem Management

이 과목은 산림생태계 경영을 위한 개념, 원리 및 주요 issue들을 복합적으로 다루기 위해 산림생태계경영학특강과 산림생태계경영학특강의 2개의 부제로 구분하여 교육된다. 제1부 '산림생태계경영학특강(Issues of Forest Ecosystem Management)'에서는 주로 산림생태계 운영의 개념과 국내외에서의 산림생태계 관련 사례문제들 중심으로 문제의 성격, 규모, 사회적 issue 등에 따른 접근방식을 다룬다. 제2부는 '산림생태계 평가 및 계획론(Forest Ecosystem Evaluation and Planning)'에서는 산림생태계의 감시, 평가 및 예측에 요구되는 다양한 원리 및 적용기법들과 경영계획법들을 다룬다.
This is an advanced course covering the concepts, principles and main issues of forest ecosystem management. To cover the wide range of the subject, this course consists of two parts: Issues of Forest Ecosystem Management and Forest Ecosystem Evaluation and Planning. The first part (Issues of Forest Ecosystem Management) includes the concepts of ecosystem management and the domestic and international issues and case studies of forest ecosystem management. In the second part (Forest Ecosystem Evaluation and Planning), the methodologies of monitoring and evaluation as well as prediction and planning for ecosystem management are the major subjects taught.

5241.522A Topics in Forest Soil

The course intends for students to recognize practical management methods of forest soil from the viewpoint of sustainable forest management. Based on the fundamental knowledge of soil properties, students will learn the differences among agricultural soil and forest soil. The course examines physical, chemical and biological characteristics of forest soil, and develop ways to adapt those characteristics to the practical operations of forest soil management under the principle of ESSD (environmentally sound and sustainable development). The students will learn various forest soil properties and their function in the ecosystem, and develop the ability to apply the knowledge in the forest soil management.

5241.526 Topics in Ecological Economics-Advanced Ecological Economics

Students will review recent development of ecological economics research and an interdisciplinary approach will be applied to the impact of economic activities on ecosystems. Some real issues in forest ecosystem management are addressed from the perspective of biophysical, philosophical, and economic theories. For empirical cases, social impacts of forest resources utilization and energy-material flows of forest utilization are analyzed.

5241.531A Topics in Forest Genetics and Tree Improvement

This lecture consists of three sections including forest harvest engineering, logging mechanics and forest production planning. The first half of the lecture covers road layouts, cost control and logging mechanics for harvest operations. In the second half, the lecture covers the engineering planning for optimal production management including material flow, cost control and decision-making using mathematical programming.

5241.532 Park and Recreation

In this course, we will study the basic concepts of Park and Recreation. We will discuss the planning, design, and management of parks and recreation areas, with an emphasis on the role of parks in promoting public health and well-being. We will also explore the social, cultural, and economic benefits of parks and recreation areas, and the challenges of managing these resources in a sustainable way.
This class is to understand the foundation of leisure and recreation, and efficient management of recreational resources from a economic point of view(including understanding of demand and supply). It also covers various aspects of outdoor recreation including motivation, benefit, resources, environmental impact, visitor management, satisfaction and crowding.

Ecosystem Services and Society

Ecosystem services include products like clean air and processes such as the decomposition of wastes. The United Nations 2005 Millennium Ecosystem Assessment grouped ecosystem services into four broad categories: provisioning, supporting, cultural, and regulatory. This class will discuss; first, the definition and categories, second, management and policies issue, and finally, how to incorporate ecosystem services into natural resources decision-making as well as livelihood of the communities.

5241.533A Ecosystem Service and Society

5241.534 Topics in Forest Plant Taxonomy

5241.537 Riparian Ecology

Mountain Disaster Prevention Mitigation

Mountain disaster, including landslides, mudflow, collapse of dams and embankment, is a special phenomenon caused by natural phenomena such as storm and earthquake. This course will primarily aim to the understanding of the mechanism of mountain disaster occurrence. The control and countermeasure against the mountain disaster are introduced. This course will also designed to provide in-depth planning, risk evaluation and management to mitigate the hazard and vulnerability. The course will have several hands-on projects and all students will actively take part in demonstrations and presentation.

5241.538 Mountain Disaster Prevention Mitigation

Climate Change and Forest Environment

Climate change caused a variety of changes in forest environment. Physical, chemical and biological processes of forest ecosystem, particularly, the biogeochemical cycles of water, carbon and nitrogen, and energy exchange between life and environment will be discussed in various watersheds as well as the impact of terrestrial vegetation on water bodies, stream classification, land-water linkages, decomposition dynamics, riparian restoration, the concept of watershed, and watershed management. 1-2 field trips are included in this course.

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5241.538 Mountain Disaster Prevention Mitigation

M1698.00100 Climate Change and Forest Environment

Riparian Ecology

The course aims to introduce the students to the concept of riparian area, its ecological characteristics, and the interactions between riparian area and its habitats. By understanding those concepts, the students can develop the idea to manage riparian area and watershed area. Riparian areas consist of terrestrial landscapes adjacent to water, and water area affected by land. Riparian area is characterized by high species diversity, high species density and high productivity. The course covers the physical (geology, climate) and chemical characteristics (nutrients) of riparian areas that affect biogeochemical processes of terrestrial ecosystem (vegetation) along waterways as well as the impact of terrestrial vegetation on water bodies, stream classification, land-water linkages, decomposition dynamics, riparian restoration, the concept of watershed, and watershed management. 1-2 field trips are included in this course.

5241.538 Mountain Disaster Prevention Mitigation

The course includes products like clean air and processes such as the decomposition of wastes. The United Nations 2005 Millennium Ecosystem Assessment grouped ecosystem services into four broad categories: provisioning, such as the production of food and water; regulating, such as the control of climate and disease; supporting, such as nutrient cycles and crop pollination; and cultural, such as spiritual and recreational benefits. This class will discuss; first, the definition and categories, second, management and policies issue, and finally, how to incorporate ecosystem services into natural resources decision-making as well as livelihood of the communities.
Topics in Forest Entomology

The aim of this subject is to understand the effect of several insect pests on forest and learn several control methods for managing the population of forest insect pests. For this purpose, morphological and ecological characteristics, overwintering stage, and damage habit of forest insect pests will be introduced with the basic knowledge of insect taxonomy, morphology, physiology and ecology. Furthermore, several kinds of control methods such as chemical, biological, physical and silvicultural control methods practically used in field will be introduced.

M1698.000500  산림보호학 특강 3-3-0

Topics in Forest Protection

Several biotic (plant pathogen, insect, wild animal) and abiotic agents (climate, air pollution, soil, chemicals) could cause forest damage. In this subject, students will learn the various forest and tree damages caused by biotic and abiotic agents. For this purpose, ecological characteristics of main forest insect pests and diseases including pine wilt disease, oak wilt disease, pine needle gall midge and black pine bast will be introduced. Students will also learn about several control methods of forest insect pest and diseases such as chemical, biological, physical, mechanical and silvicultural control methods. This course also introduces symptom, prevention and treatment methods of forest damages caused by climate, air pollution, soil and chemicals.

M1698.000700  산림탄소프로젝트 개발론 3-3-0

Forest Carbon Project Development

Successful forest carbon project development requires carbon benefits to be quantified using rigorous methodological approaches, elaborated in a Project Design Document (PDD), independently validated, and later verified for issuance of certified carbon credits. This course will deal with the knowledge and information for forest carbon project development, for example, project idea and preliminary assessment, project design and planning, developing a project design document, review project activities and develop project implementation strategy, finalizing financing and investment arrangements, project approvals, validation and registration, project implementation and monitoring, verification and issuance, etc based on project development process. This course
will enhance the understanding of forest carbon projects development and provides the basic knowledge needed for forest carbon project development.

### M1698.000800

**Impact Assessment of Climate Change on Forest**

Forest management is crucial to the functioning of forests. Forests are known as the typical carbon sink. This course promotes education in theoretical, and applied aspects of forest ecology and conservation biology. The overarching goal is to produce graduate level scientists with the best technical skills and place them in superior positions in academia and government. Students examine the forest ecology, evolution, and conservation biology of organisms. Student research encompasses a broad range of biological techniques and levels of ecological complexity, including investigations of individual organisms, populations, and species. Students will obtain knowledge of the application of computer tools (using R program), conceptual and analytical models (Bio and Ecostatistical analysis), and data analysis techniques (regarding monitoring techniques). Each week students are responsible for reading each paper and chapters of the textbooks and for making a substantive contribution to discussion.

### M1698.001300

**Topics in Forest Biotechnology**

This course promotes education in theoretical, and applied aspects of forest ecology and conservation biology. The overarching goal is to produce graduate level scientists with the best technical skills and place them in superior positions in academia and government. Students examine the forest ecology, evolution, and conservation biology of organisms. Student research encompasses a broad range of biological techniques and levels of ecological complexity, including investigations of individual organisms, populations, and species. Students will obtain knowledge of the application of computer tools (using R program), conceptual and analytical models (Bio and Ecostatistical analysis), and data analysis techniques (regarding monitoring techniques). Each week students are responsible for reading each paper and chapters of the textbooks and for making a substantive contribution to discussion.

### M1698.000900

**Forest Carbon Management**

Forests are known as the typical carbon sink. This course promotes education in theoretical, and applied aspects of forest ecology and conservation biology. The overarching goal is to produce graduate level scientists with the best technical skills and place them in superior positions in academia and government. Students examine the forest ecology, evolution, and conservation biology of organisms. Student research encompasses a broad range of biological techniques and levels of ecological complexity, including investigations of individual organisms, populations, and species. Students will obtain knowledge of the application of computer tools (using R program), conceptual and analytical models (Bio and Ecostatistical analysis), and data analysis techniques (regarding monitoring techniques). Each week students are responsible for reading each paper and chapters of the textbooks and for making a substantive contribution to discussion.

### M1698.001400

**Nondestructive Evaluation of Wood**

Nondestructive evaluation can detects without damages and...
is a technology that can acquire information for reliability and safety of material. The various methods of non-destructive evaluation are studied about the properties and theoretical mechanism of individual method in this curriculum. The reliability and safety of member can be investigated to be applicable on the cite using the nondestructive evaluation of deteriorations in wooden structural members.

5242.503 목조주거환경특강 3-3-0

Topics in Residential Performance for Wood Structure

To broaden the concept of bio-composites from traditional wood-based materials such as plywood, particleboard and fiberglass to brand-new materials such as bio-composites made of lignocellulosic materials, metallic materials, plastic, nano materials and various synthetic raw materials. This lecture provides the knowledge of various properties and experimental technique.

**5242.511**  **Toxicology of Wood**  **3-3-0**

**Topics in Organic Coatings**

This course deals with relationships of wood moisture and environmental including humidity and vapor pressure of water, moisture content of wood in use, moisture sorption thermodynamics, theories of water sorption by wood, directional and volumetric hygroexpansion of wood, moisture movement in the wood cell wall, thermal conductivity and diffusivity and electrical properties including electrical resistance and dielectric constant.

**5242.514**  **Mechanical Properties of Wood**  **3-3-0**

**Mechanical Properties of Wood**

This course discusses general properties of wood for using over the wood constructions and structural elements. We
will learn to the stress, strain, elastic theory, dynamic behavior, failure and physical properties and understand the wood properties exactly.

5242.519 제지화학특강 3-3-0
Topics in Paper Chemistry

Paper chemistry and coating processes, raw materials, process management.

5242.520 지류가공학특강 3-3-0
Topics in Paper Converting Technology

Drying processes, superheated steam drying, and PEG frequency drying and other special drying methods such as vacuum drying, infrared drying and high frequency drying, high temperature drying, and other special drying methods such as vapor drying processes, super heated steam drying, and PEG treatment etc.

5242.522 목재특수건조론 3-3-0
Topics in Special Drying of Wood

This advanced course in special drying of wood deals with the fundamental principles of colloid and surface chemistry related to the interaction of papermaking materials and chemical additives in the wet end of a paper machine system. Theoretical principles that include surface energy, adsorption phenomena, surface tension and capillarity, electrical double layer and flocculation, synthesis of poly-electrolytes and their characteristics will be discussed. The topics of retention of fine solids and dewatering are addressed in detail. Application of the various wet end additives including sizing agents, fillers, dry and wet strength resins and others will be described. Approaches of paper chemistry on challenges of papermaking system closure.

5242.524 탈묵 및 고지재활용기술 3-3-0
Deinking and Wastepaper Recycling Technology

It deals with the fundamental principles of colloid and surface chemistry related to the interaction of papermaking materials and chemical additives in the wet end of a paper machine system. Theoretical principles that include surface energy, adsorption phenomena, surface tension and capillarity, electrical double layer and flocculation, synthesis of poly-electrolytes and their characteristics will be discussed. The topics of retention of fine solids and dewatering are discussed in detail. Application of the various wet end additives including sizing agents, fillers, dry and wet strength resins and others will be described. Approaches of paper chemistry on challenges of papermaking system closure.

5242.525 목구조설계 3-3-0
Design of Wood Structures

This advanced course in the kiln drying of wood deals with the fundamental principles of colloid and surface chemistry related to the interaction of papermaking materials and chemical additives in the wet end of a paper machine system. Theoretical principles that include surface energy, adsorption phenomena, surface tension and capillarity, electrical double layer and flocculation, synthesis of poly-electrolytes and their characteristics will be discussed. The topics of retention of fine solids and dewatering are discussed in detail. Application of the various wet end additives including sizing agents, fillers, dry and wet strength resins and others will be described. Approaches of paper chemistry on challenges of papermaking system closure.

5242.526 목재열기건조특강 3-3-0
Topics in Kiln Drying of Wood

This advanced course in the kiln drying of wood deals with the fundamental principles of colloid and surface chemistry related to the interaction of papermaking materials and chemical additives in the wet end of a paper machine system. Theoretical principles that include surface energy, adsorption phenomena, surface tension and capillarity, electrical double layer and flocculation, synthesis of poly-electrolytes and their characteristics will be discussed. The topics of retention of fine solids and dewatering are discussed in detail. Application of the various wet end additives including sizing agents, fillers, dry and wet strength resins and others will be described. Approaches of paper chemistry on challenges of papermaking system closure.

5242.528 목재화학특강 3-3-0
Topics in Wood Chemistry

This advanced course in the kiln drying of wood deals with the fundamental principles of colloid and surface chemistry related to the interaction of papermaking materials and chemical additives in the wet end of a paper machine system. Theoretical principles that include surface energy, adsorption phenomena, surface tension and capillarity, electrical double layer and flocculation, synthesis of poly-electrolytes and their characteristics will be discussed. The topics of retention of fine solids and dewatering are discussed in detail. Application of the various wet end additives including sizing agents, fillers, dry and wet strength resins and others will be described. Approaches of paper chemistry on challenges of papermaking system closure.
chemistry will be dealt with based on the approach of environmentally friendly methods, and useful extraction, purification and utilization of extractives will be introduced.

M1699.000300  제지물성학 특강  3-3-0

**Topics in Paper Physics**

Paper fibres network formation, paper structure and properties are studied and discussed to design and analysis of products. It provides theory on paper physics in terms of fiber network geometry, sheet structure and physical properties, mechanical and optical properties, dimensional stability, absorbency, and so on. Also, It deals with the relationship between factors in raw material and process and the paper properties.

M1699.000200  설폴로오스 물성 및 공정  3-3-0

**Properties and processing of cellulose**

Cellulose which is the most abundant natural polymer is mainly obtained from various plants. This course gives fundamental knowledge on the structure and physical properties of cellulose depending on cellulose source as well as process technology for the production of diverse types of cellulose fiber. It includes crystallinity, morphology, mechanical, optical, and thermal properties. Also, it deals with preparation and characterization of cellulose nanofibers. It can provide knowledge for application of cellulose to wide industrial fields such as paper, composite, textile, filter, and electronics.
바이오시스템공학전공(Biosystems Engineering Major)

5261.601A 생물생산기계시스템공학 3-2-2

Biological Production Machinery and Implement

농작업기의 편의성, 정량화를 위한 해석방법과 설계방법을 다룬다. 주요내용은 농업제도 및 작물의 물성, 반향성기후, 작물-기계 시스템, 농작업기계와 체계의 환경평가, 경영농업 등이다.

In this course, students will be introduced to advanced engineering on the analysis and design of farm implements that are more environment-friendly and precise. Topics will cover: the physical properties of agrichemicals, supplies, and crops for agriculture; variable application technology; crop-machine systems; environmental evaluation of agricultural machinery; and agricultural production systems.

5261.602 바이오시스템공학세미나 1 1-0-2-0

Seminar in Biosystems Engineering 1

석사과정 대학원생을 위한 세미나로 과목으로서, 공학발표에 필요한 준비, 발표 및 토론을 연습하며 수강생들은 그들이 진행중인 연구과제를 준비단계, 중간단계, 최종단계별로 발표한다. 또한 요소적인 공학논문작성에 대한 인지법 등도 논의한다. 필요에 따라 외부 인사가 초청되며, 수강생들의 발표를 위주로 진행된다.

This seminar is for graduate students in the master program to practice presentation skills as a professional engineer. Students should give presentation on their own research at planning, interim, and final stage of the research. Also, research strategy for efficient writing of engineering paper is discussed.

5261.603 바이오시스템공학세미나 2 1-0-2-0

Seminar in Biosystems Engineering 2

박사과정 대학원생을 위한 세미나로 과목으로 생물시스템공학 분야 특히 농업기계와 농산식품가공, 저장 및 유통, 바이오 sperma, 등 분야의 전문분야를 초래하여 특강을 하고 주제로 토론하거나 바이오시스템의 동향 등에 관한 정보를 교환하여 연구분야 탐색과 설정에 기여한다. 필요에 따라서 기초학문이나 인질학문 학문에 대한 전문가를 초청하여 전문적 연구를 위한 연구동향을 듣는다.

This seminar is for graduate students on the doctoral program to get professional viewpoint of biosystems engineering by special lectures of experts in agricultural machinery, agricultural produce/food process, storage and distribution and biosensor etc. Through discussion with experts, students will find prospects of their research and decide in which area will be promising. Experts in basic science areas could be invited to provide creative research mind.

5261.606A 생물자원 저장론 3-3-0

Preservation of Biological Resources

이 과목에서는 농산물의 특성에 의한 저장과 저장에 관련된 곡물의 물리적, 열역학적 성질, 저장 및 유통, 바이오 sperma, 등 분야의 전문가를 초래하여 특강을 하고 주제로 토론하거나 바이오시스템의 동향 등에 관한 정보를 교환하여 연구분야 탐색과 설정에 기여한다. 필요에 따라서 기초학문이나 인질학문 학문에 대한 전문가를 초청하여 전문적 연구를 위한 연구동향을 듣는다.

This course covers the physical and thermodynamic properties of grain and moist air related to the drying and storage of cereal products. Theory and methods of the drying process and drying characteristics of cereals are further dealt with. Also, the importance of water content, state, and mobility in preserving the biological products are covered from the physicochemical point of view.

5261.607 농업기계동력학 3-3-0

Dynamics of Farm Machine Elements

Lagrangian 운동식, Euler 운동식, 좌표 변환 등 동력학의 고급 이론과 원리를 이용하여 다차원도 정체 시스템의 운동 방정식을 유도하는 데 필요한 이론과 방법을 다루고, 동력학, 기계학의 각각을 활용하여 농업기계의 주요 메커니즘에 대한 운동학 및 물리적 조해와 자국의 소유, 감동, 안정성을 다룬다.

In this course, students will be introduced to advanced theories and methods used in the development of equations of motion for multi-body systems including Lagrangian equations, Euler equations, and axis transformations. In addition, topics will cover the application of fundamental dynamics and mechanics to the force and motion analysis of agricultural machines as well as problems in off-road equipments related to vibration, noise, and stability.

5261.609A 생물생산성공학특강 3-2-2

Topics in Engineering Properties of Bioproducts

이 강좌는 학부에서 제공되는 생체물성공학과 연관된 것으로 주로 농식품의 이화학적 특성, 열역 특성, 근적외 특성, 근적외 분광분석법, 근적외 instrumentation 등에 대해서 강의하고 나아가서 농식품을 대상으로 사용하고 있는 각종 비파괴 평가측정 센서의 원리 및 설계방법에 대해 강의한다.

This course is an advanced study of Engineering properties of biological products and lab. In this course, chemical and thermal properties of agro-food materials, near-infrared(NIR) scattering and absorption properties of biological products, spectroscopic data analysis and NIR instrumentation are handled. Furthermore, principles and design of the sensors for nondestructive quality evaluation of biological products are studied.

5261.610 유체기계특강 3-3-0

Topics in Fluid Machines

파드라 펜드 같은 유체기계 시스템의 동작기제나 시험장비에 적용, 유체기계의 성능측정, 유공압시스템의 해석방법과 시뮬레이션 기법 등을 다룬다.

This course will cover the application of fluid machinery systems including pumps and fans to agricultural machinery and production facilities. In addition, students will be introduced to the testing and evaluation of fluid machinery, analysis of hydraulic systems, and simulation.

5261.611 토양기계시스템 3-2-2

Soil Machine System

토양의 분류, 성질, 강도, 다짐 및 파괴에 대한 기본 개념과 원리를 소개하고, 건인역학 토양과학 등 토양기계 기초 및 토양-사항 섭단 기계의 상호 작용에 대한 이론과 원리를 다루며, 이를 응용한 로프와차량의 건인 성능 예측, 토양 철삭 기구의 설계어음, 토양기계 시스템의 사양설명 등을 다룬다.

This course will cover the application of soil machinery systems including pumps and fans to agricultural machinery and production facilities. In addition, students will be introduced to the testing and evaluation of soil machinery, analysis of hydraulic systems, and simulation.
This course will cover the basic theories and principles in soil dynamics relevant to soil-machine interaction problems including the classification, properties, strengths, compactions, and failures of soil. In addition, students will examine theories and principles related to traction mechanics, soil cutting, earth moving, and soil-tool interactions. Applications will be extended to the prediction of off-road vehicle performance, design of soil cutting tools, and simulate in soil-machine systems.

5261.612A 바이오로봇 3-3-0
Bio-Robotics

Courses will cover the basic concepts of bio-robots, principles of coordinates, manipulator motion, actuator, end-effector, path control, sensors, and interface with personal computers. Applications to fruit harvests, spraying, fertilizing, weed control, livestock management, food processing, animal farm management, microscopic tissue culture engineering, and crop production in greenhouses will be emphasized. Intelligent bio-robots where artificial intelligent techniques are applied will be discussed for future bio-robots handling biological products and materials.

5261.613 농업기계화계획 및 분석 3-3-0
Planning and Analysis of Agricultural Mechanization

This course will cover the basic concepts of agricultural machines relevant to mechanization planning and analysis.

5261.614 농산가공기계설계 3-3-0
Design of Agricultural Processing Machines

This course will cover the basic theories and principles of the sorting system of cereal grain; the design of unit-sorting machines using the pneumatic, screen, indent, gravity, friction, and electrostaticity; the design of rice processing systems; and the design of air conditioning systems used for the drying and cold storage of farm products.
각각 단위기계의 설계에 대한 전문적 공학기술을 다룬다. 시설 내 환경모델링과 환경조절기기의 제어 기법을 기반으로 시설원예용 온실이나 축사 등 제한된 시설에서 생명을 생산하는 시스템의 종합적인 설계와 분석을 다룬다.

In this course, principles and design technology of unit machinery and facilities for environment control and raising/cultivating biological resources such as crops and animals will be introduced. Based on environment modeling and system control technology, advanced engineering technologies for designing and analyzing green-houses, animal building facilities and closed echo-systems will be taught.

5261.620 생물시스템분석 3-3-0

Biosensor

바이오센서의 작동원리를 이해하고 이를 실제 농산가공, 식품산업, 생명공학 분야에 응용하는 사례를 강의하여 공학도로서의 현장적응 및 연구활동을 위한 적응능력을 배양한다.

In this course, students will be introduced to the principles of biosensors, biosensor components, biological elements (membranes, tissues, enzymes, and antibodies), electrodes, immobilized materials, transducers, and performance factors. Examples of biosensor applications will be discussed after reading related papers in class.

5261.623 응용계측 3-2-2

Measurement and Instrumentation

농업 기계 및 설비의 성능시험과 개발에 필요한 측정장치의 구성 및 원리, 신호처리 및 데이터 수집 시스템의 구성, 데이터의 수집 및 분석 방법을 다룬다.

This course covers the measurement systems and measurement techniques necessary for the performance test and development of agricultural equipment, the construction of data acquisition systems, and the acquisition and analysis of measurement data.

5261.624 트랙터공학 3-3-0

Tractor Engineering

농업용 트랙터 및 노유기계의 설계 및 작동원리에 중점을 두며, 아울러 농업용 트랙터의 안정성 분석 및 성능 및 시험방법을 다룬다.

This course will cover tractors and off-road vehicles with a particular emphasis on design features and principles of operation. In addition, students will study stability analysis and the performance and testing of agricultural tractors.
문과목은 식물, 동물, 인체 등의 모든 생물체에 응용되는 역학에 대해 다룬다. 즉, 생체의 구조와 조직, 그리고 기관을 생체역학적으로 해석하는 생물재료학으로부터 인위적인 생체재료와 그 응용 분야에 대해 구체적으로 살펴보고, 특히 생체의료재료로서의 활용성에 대해 다룬다. 본 과목은 정역학, 동역학, 영역학, 유체역학, 열가설 전담의 역학적 차원에서 금속 및 바이오세라믹의 생체재료를 이용한 인공장기 설계를 실습한다. 또한, 세포, 조직, 생체기관의 뿌리 배양을 위해서 초음파, 온파, 전기적 및 기계적 자극 등의 생체역학적 기술을 이용한 바이오리액터와 배양시스템에 대해 다룬다.

이 과목은 바이오시스템 연구에 필요한 정밀농업과 ICT 정보공학의 기술과 적용사례를 다룬다. 이 과목은 생물재료 및 생체의료기기 설계 및 제조에 필요한 바이오시스템, 원활처리, 샌드백, 기술, 포장정보 검출 및 변이분석 등을 포함하고 ICT 정보처리를 위한 USN, 유동통신 및 ISOBUS 데이터 표준화 기술에 대한 이론적 고찰과 적용 사례를 다룬다.

이 과목은 바이오시스템 연구에 필요한 제어공학 기술을 기반으로 농업과 바이오시스템에 적용되는 자동화 시스템의 설계이론과 관련 기술을 공부한다. 이를 위해 선행자를, 산업병상활성성, 비비미분적분, 피저, 신경망 등 기계 설계에 적용되는 알고리즘과 관련 피드백 시스템의 평가기술을 다루며 프로젝트 수행을 통하여 승급한 기술을 종합평가한다.

이 과목은 바이오시스템 연구에 필요한 제어공학 기술을 기반으로 농업과 바이오시스템에 적용되는 자동화 시스템의 설계이론과 관련 기술을 공부한다. 이를 위해 선행자를, 산업병상활성성, 비비미분적분, 피저, 신경망 등 기계 설계에 적용되는 알고리즘과 관련 피드백 시스템의 평가기술을 다루며 프로젝트 수행을 통하여 승급한 기술을 종합평가한다.
agricultural food products that often require for food and agricultural process design and product development. It covers physical principles and instruments for the measurement and analysis for various physical properties such as microscopic water dynamics, thermal, rheological, interfacial, and electrical/magnetic properties. Applications and current research trends are also introduced.
In recent, the fusion technology of nano and bio-based materials is increasing sharply as a future technology. It is considered one of the core technologies in the field of natural polymers. This course provides the opportunity to meet basic concepts and understand the application of soluble biopolymers. Polymers are used as drug carriers. This course includes synthesis and application of soluble biopolymers.

**5262.578**  
**Biopolymers and Biomedical Applications**

This course provides the synthesis of biopolymers and the interaction between the polymer and human body. Biopolymers are polymers that can be used to human body as implants, artificial skins, drug carriers. Specially soluble biopolymers are polymers that could be used in the human body as implants. This course includes fundamentals of natural phenomena and of polymer based materials. In this class, the recent research activities in the field of natural polymers will be introduced. We will explore how researchers in this field solves the inherent limitation of natural polymers in order to use this polymers as versatile and advanced materials.

**5262.579**  
**Biopolymers in Nanobiology**

Recent, biomimetics are getting interest in various fields, including materials science and engineering. The importance of this field is growing fast and enormous articles have been reported in this regard. Therefore, recent trends should be introduced to students who are related in this fields. This course provides fundamentals of nature’s phenomena and of naturally occurring materials. It also includes protein folding, self-assembly, biomaterials, hybrid materials.

**5262.580**  
**Biomaterials for Medical Applications**

Seminar in Biomaterials Engineering 1 covers Polymer-related subjects in discussion. Rapid change and development in biotechnology needs the appropriate understanding and absorbing a new technology. The main aim of this course is to provide the opportunity to learn a novel biotechnology and science and biomaterials, and share the information within a group. Spontaneous and active participation (presentation, questions and answer, and discussion) will be necessary. Students will have a chance to present their research interests and get a productive feedback from many other research fields.

**5262.581**  
**Biomaterials for Medical Applications 2**

Seminar in Biomaterials Engineering 2 explores the synthesis and application of soluble biopolymers. This course includes synthesis and application of soluble biopolymers.
로운 바이오 소재와 생명과학 기술을 접하고 정보를 공유한다.

Seminars in Biomaterials Engineering covers Chemistry and Physics of Fibers and Textiles. Rapid change and development in biotechnology needs the appropriate understanding and absorbing a new technology. The main aim of this course is to provide the opportunity to learn a novel biotechnology and science and biomaterials, and share the information within a group. Spontaneous and active participation (presentation, questions and answer, and discussion) will be necessary. Students will have a chance to present their research interests and get a productive feedback from many other research areas.

5262.588 바이오소재공학사과 과목 2-0-4

Current Topics in Biomaterials Engineering

Recent and more novel materials are developed and its processing and application are very important. The rapid development of biotechnology and the intensive investment to the area enable the significant improvement in biomaterials itself, whose application is in question. Through passionate discussion on the latest issue in research, the insight on a novel material and an application of new technology can be gained.

5262.589 5262.591 고분자재료학과 과목 3-3-0

Polymer Rheology

Because rheology is a science of the deformation and flow of matter, we will discuss how a material will deform or flow when subjected to an external force. Topics will cover characteristic behaviors related to elasticity, viscosity, and viscoelasticity of solids fluids, and polymeric materials. Also the methodology to measure the viscoelastic properties of polymeric materials will be introduced. The experimental data from the measurement will be discussed.

M1705.000100 하이드로젤기반생체재료 과목 3-3-0

Hydrogel-based Biomaterials

Hydrogel is one of the most promising materials in biomedicine engineering for its great biocompatibility since its physical and structural properties are very similar to those of soft tissues in living organisms. This class will provide basic principles of crosslinking mechanisms of polymers, strategies in design of hydrogel network structure for specific purposes, and recent research trends. This course would be very helpful to research and experiment of graduate students who are studying in biomaterial engineering field.
Biomaterials for Tissue Engineering

Tissue engineering has been greatly advanced in recent years based on many disciplines such as biology, mechanics, and chemistry. Tissue engineering is not only closely associated with biomedical field but very important in various bio-industries. Especially, the development of materials for cell culture and regulation of physiological behaviors are very important in tissue engineering. A lot of kinds of novel biomaterials have been developed according to the evolution of three-dimensional (3D) cell culture technique. In this class, graduate students will have a deeper understanding of basic properties of tissues and cell culture methods based on culture matrices. Particularly, an introduction of recent 3D cell culture researches and related materials gives a great inspiration to the students for utilizing tissue engineering materials.

Topics in Biomaterials Chemistry

In this lecture, various functional targets for bio-conjugation, cross-linking reactions and bioconjugate reactions will be understood, which are utilized to modify biomaterials such as proteins, polysaccharides, or nucleic acids for their medical or industrial applications. Also, chemical modification methods for other biomaterials such as dendrimers, silanes, or carbon nanostructures will be introduced.
생태조경학전공(Landscape Architecture Major)

5271.515 환경생태론 3-3-0

Theories of Environmental Ecology

조경계획, 설계에 응용하기 위한 기초적인 환경생태계의 원리, 사회 경제적 접근에 관한 연구이다. 도지개발과 환경보전문제, 환경정책의 연구, 경관생태학의 연구를 주로 다룬다.

Basic principles of ecology, environmental issues and socio-economic approaches to solve them are introduced to be applied in landscape planning and design. Environmental degradations caused by land development, environmental policies, the studies of landscape ecology are also discussed.

5271.517 환경미학 3-3-0

Environmental Aesthetics

세미나 형식으로 진행되는 이 과목은 환경미학의 이론적 논제를 탐색하고, 통합적 설계 실천을 위한 환경미학적 접근 방식을 탐색한다. 또한 이 과목은 현대 조경설계와 이론의 미학적 쟁점과 해석하고 현장의 문제에도 중점을 둔다.

This seminar aims to explore theoretical issues of environmental aesthetics and to investigate an aesthetic approach for the integrated design practice. It also focuses on the aesthetic strategies of contemporary landscape architecture and theory.

M1714.000100 현대조경이론 3-3-0

Theories in Contemporary Landscape Architecture

이 과목은 현대 조경 이론과 설계에 대한 이론적 방향이다. 주요 주제와 주요성은 다음과 같다. 맥하그와 조경에서의 환경주의, 생태과학적 이론의 체계와 지속가능성과 생태적 설계, 형태(외관)와 기능(설계)의 문제, 형태 생성과 매체, 랜드스케이프 아티팩트와 대형 공원, 사이트와 프로세스 중심적 설계의 문제를 다룬다.

This course is a theoretical exploration for contemporary landscape architecture theory and design. Main topics and issues are as follows: McHarg and landscape architecture, the environmentalism, the ecological ideas of landscape architecture, the theory of form, performance, function, and process, landscape urbanism and large parks, site matters, and process-oriented design, etc.

5271.522 도시생태학 3-3-0

Urban Ecology

도시 생태환경의 문제점 살펴보고, 도시지역에서의 생물다양성 증진, 환경 문제가 개선, 생태네트워크 구축 등을 위한 이론적 방법론을 살펴보고, 이러한 내용을 실제로 적용하기 위한 사례연구를 실시한다.

The course examines problems in urban ecological environment and reviews theoretical methodologies for promotion of biodiversity, improvement of environmental problems, and building eco-network in urban areas. Then, case studies are conducted to apply the studied methodologies.

5271.523 환경설계와 인간행태 3-3-0

Behavioral Factors in Environmental Design

환경설계의 제 속성 중 환경설계 및 인간행태의 측면을 중점적으로 연구하여 환경설계에 응용할 수 있는 방안을 모색한다. 환경심리학, 환경미학, 문화인류학, 인종기술학, 지리학, 사회학, 인간공학 등 관련분야로부터의 기초이론을 중심으로 연구방법 및 응용사례를 다룬다.

Investigation of the application of the environmental psychology and human behavioral studies to environmental design. Review of the related theories and research methods in environmental psychology, environmental aesthetics, cultural anthropology, ethnography, geography, sociology, and human engineering.

5271.524 도시조경실践론 3-3-0

Theories and Practices in Urban Landscape Design

랜드스케이프에 대한 물리적, 개념적 이해가 어떻게 도시와 임의의 도시이미지를 풍성하게 할 수 있을지에 대한 탐구를 목표로 삼는다. 도시를 복합적이고 유기적인 대상으로 이해하고 새로운 시각으로 읽어내는 태도와 기법에 대한 고찰을 방향한다.

This course aims to explore how the physical and conceptual understanding of landscape can enrich current forms of urban design exercise. With the view of seeing a city as a complex and organic system, students will develop techniques on reading a urban condition with their own attitude.

5271.611 육외공간설계 4-2-4

Urban Open Space Design Studio

본 과목은 생물물리학적, 문화적 영향을 반영하는 설계과정을 살펴보고, 도시조경 설계의 기본적인 원리를 모색하고 보고한다. 특정 공간 구성요소와 도시와 지역을 중점적으로 다루고자 한다.

The aim of this course is to undertake design processes that respond to both biophysical and cultural influences and to examine if there are fundamental principles of urban landscape design. There is an emphasis on open space as a structuring element of urbanizing areas.

5271.615A 전통환경설계론 3-2-2

Theory of Traditional Environmental Design

본 과목에서는 환경계획 및 설계에 대한 한국의 전통적 사고방식 및 이론에 대한 통찰을 가져와, 이들 현대 환경계획 설계과정에 적용하여 미래의 새로운 조경계획 및 설계의 접근방법을 개발한다. 한국 전통적인 방법을 대상지 계획 및 설계에 적용하여 그 효율성을 검토한다.

The course investigates Pungsu and Nujeongwon etc. which are Korean traditional thoughts and theories about environmental planning and design. Students will also learn how to apply the traditional theories to current environment and develop new approaches for environmental planning and design. Students will apply the new approaches to site planning and design.
M1715.000300  4-2-4
Planting Planning and Design

The aim of this course is to research the design characteristics of plants and to apply this to landscape design and documentation. The course will include: Using plants in design: ground-cover, shrubs & grasses, small trees, large trees.

M1715.000200  3-3-0
Procurement and Valuation of Public Open Spaces

This course is a detailed study on techniques of sustainable environmental planning and design. It addresses both theory and application and provides students with a framework within which spatial problems can be identified and solutions generated.

M5271.621  3-3-0
Advanced Environmental Impact Assessment

Advanced Environmental Impact Assessment is a course that introduces students to the rapid expanding field of Geographic Information Systems (GIS). It addresses both theory and application and provides students with a framework within which spatial problems can be identified and solutions generated.

M5271.622  3-2-2
Landscape Information System

Landscape Information System

Landscape Information System is a course that introduces students to the rapid expanding field of Geographic Information Systems (GIS). It addresses both theory and application and provides students with a framework within which spatial problems can be identified and solutions generated.

M5271.623  3-3-0
Studies in Techniques of Sustainable Environmental Planning and Design

Studies in Techniques of Sustainable Environmental Planning and Design is a course that introduces students to the rapid expanding field of Geographic Information Systems (GIS). It addresses both theory and application and provides students with a framework within which spatial problems can be identified and solutions generated.

M5272.502A  3-3-0
New & Renewable Energy Engineering in Agricultural Buildings

New & Renewable Energy Engineering in Agricultural Buildings is a course that introduces students to the rapid expanding field of Geographic Information Systems (GIS). It addresses both theory and application and provides students with a framework within which spatial problems can be identified and solutions generated.
technologies will be conducted. In addition, applying the green technologies could minimize cost thus increase income at the same time revitalize life in the rural areas.

5272.504 수목문모델링 3-3-0
Watershed Hydrologic Modeling

This course offers some principles and mechanism of non-point source (NPS) pollution processes in a field and watershed scale, and their management alternatives. Engineering and scientific principles are to be applied to quantitatively understand the fates of pollutants in natural environments and their interaction with land and water management. Various management strategies to reduce and control NPS pollution are to be explored. Guidelines for NPS pollution control, and the best management practices (BMP) in rural and urban areas are to be covered. This course does not require a prerequisite, but engineering or scientific backgrounds on hydrology and soil erosion are highly recommended. The course consists of lecture and discussion sessions, and oral presentations on special topics related NPS management and control are assigned to help understand the course contents.

5272.505A 지역수유지시스템설계 및 운영 3-3-0
Rural Water Systems Design and Operation

This course will provide the principles necessary for the operation and design of irrigation systems. The class covers variety of topics that are related with irrigation systems design and operation including soil physics, crop water requirement, irrigation system facilities, surface, sprinkler, and micro irrigation system design. The course also includes several topics for irrigation system operation including irrigation scheduling, irrigation systems management and integrated irrigation systems operation. It consists of lecture and discussion sessions, and special topics will be assigned to help understand the course contents better.

5272.507 농업수리구조설계 3-3-0
Design of Agriculture Water Use Structures

This course will provide the principles necessary for the operation and design of irrigation systems. The class covers variety of topics that are related with irrigation systems design and operation including soil physics, crop water requirement, irrigation system facilities, surface, sprinkler, and micro irrigation system design. The course also includes several topics for irrigation system operation including irrigation scheduling, irrigation systems management and integrated irrigation systems operation. It consists of lecture and discussion sessions, and special topics will be assigned to help understand the course contents better.
application of those techniques on real cases, the practical knowledge on the planning, design, construction, operation and maintenance will be taught, as well. Fundamental understandings on the engineering mathematics and structural analysis are essential for this class.

5272.512 **Rural Sanitary Engineering**

Rural Sanitary Engineering

- 3-3-0

In general, airflow can be analyzed using three types of methods: experimental, theoretical, and numerical simulation. While the field experiment has been often shown disadvantages of studying aerodynamics and ventilation, an aerodynamic approach has been successfully applied to predict and control complicated airflow distributions in large agricultural buildings as well as agricultural climatology. This approach uses the technology of aerodynamics, such as wind tunnels, particle image velocimetry (PIV), and computational fluid dynamics (CFD). In this class, those modern technologies including the related theories are taught for the HVAC design of agricultural structures and the study of agricultural climatology. Each groups will perform a project to improve the understanding and application ability of the computational fluid dynamics.

5272.517 **Environmental Biocolloid Engineering**

Environmental Biocolloid Engineering

- 3-3-0

This course will provide the principles necessary for the description of transport of biocolloids such as bacteria, viruses, protozoa cyst in porous media like soils and aquifers to the graduate students major in the water environmental system engineering or to those interested in that subject. The topics covered in the course will include environmental significance of biocolloids, surface properties of biocolloids, characteristics of biocolloid transport mechanisms, attachment and removal of biocolloids, and transport modeling of biocolloids.

5272.601 **Topics in Hydraulic Environment Engineering**

- 3-3-0

This subject deals with the water quality pollution for agriculture and rural environment in specially. And it explains the agricultural nonpoint source pollution and rural waterworks and treat wastewater from a dairy farm. It includes almost knowledges about improving water quality in rural for supplying the fresh water. Fundamental understandings on the Hydraulic Environment Engineering are essential for this class. The course consists of lecture and discussion sessions, and special topics will be assigned to help understand the course contents better.

5272.603 **Nonpoint Source Pollution Modeling**

- 3-3-0

Nonpoint Source Pollution Modeling

- 3-3-0
jor nonpoint source (NPS) pollution problems like sediment, nutrient, pesticide and biological constitutes from paddies and crop lands as well as rural and urban areas, and the factors affecting those processes Various NPS pollution control measures, and their effectiveness are to be explored including the best management practices (BMPs) The well-known NPS models such as WEPP, EPIC, CREAMS, AGNPS, SWAT will be explained for their fundamental concepts and major features Plot and watershed monitoring results associated with NPS pollution control will be discussed. The course consists of lecture and discussion sessions, and special topics will be assigned to help understand the course contents better.

5272.610 Topical Geotechnical Engineering

5272.612 Computational Solution of Continuum Mechanics 1

5272.613 Computational Solution of Continuum Mechanics 2

Computational Solution of Continuum Mechanics 2

Landscape problems are the main source of pollution in the middle of the country, and in rural and urban areas, and the factors affecting those processes are to be explored including the best management practices (BMPs). The well-known NPS models such as WEPP, EPIC, CREAMS, AGNPS, SWAT will be explained for their fundamental concepts and major features. Plot and watershed monitoring results associated with NPS pollution control will be discussed. The course consists of lecture and discussion sessions, and special topics will be assigned to help understand the course contents better.
heterogeneous characteristics. Finite difference analysis uses transforming partial differential equations into simple power series. Classical mathematical methods and finite difference analysis cannot resolve those heterogeneous rural systems equations with irregular boundary values. In this class, variational methods and other fundamental concepts of finite element methods will be lectured as an alternative method. Upon the knowledge, finite element methods will be applied to the realistic rural systems problems. The procedure of development of numerical analysis programs for the resulting description of rural systems will be lectured. Through this class, the fundamental concepts of finite element method and its usage as an basic tool for the analysis and prediction of rural systems will be taught.

5272.616 Water Quality and Environmental Remediation Engineering

This course will provide the principles necessary for environmental remediation technologies and environmental remediation system design for contaminated surface water and groundwater to the graduate students major in the water quality and environmental engineering or to those interested in that subject. The topics covered in the course will include harmful algal bloom and surface water pollution, algal bloom-derived contaminants and treatment technologies, environmental remediation for removal and recovery of dissolved phosphorous, water flow and contaminant transport in soil and groundwater, environmental remediation of contaminated groundwater, hot environmental issues related to water quality, etc.

5272.617 Topics in Rural Resources Information Systems

Rural resources are the important topics in rural systems engineering. Rural resources include land, water resources, green amenity, etc. Since information technology has been proliferated, information systems are doing key roles in managing the rural resources. This class introduces rural resources categories, characteristics and information systems including geographic information systems, database, and decision support system (DSS). Especially basics of web-based system development will be lectured to construct the web-based resources management DSS students themselves for providing practical experiences of information system development.
Atmospheric Environment and Agricultural Structure

This course will provide the principles regarding rural eco-hydraulics, which is the linkages between physical hydraulics processes and ecological response in rivers, estuaries and wetlands to the graduate students in rural areas. The topics covered in the course will include Environmental Flow, Vegetation Resistance, Hydro-geomorphology, Water-quality Modelling, Habitat Hydraulics, and Eco-corridor Hydraulics.

Design of building energy in rural area

This course will provide the principles regarding rural eco-hydraulics, which is the linkages between physical hydraulics processes and ecological response in rivers, estuaries and wetlands to the graduate students in rural areas. The topics covered in the course will include Environmental Flow, Vegetation Resistance, Hydro-geomorphology, Water-quality Modelling, Habitat Hydraulics, and Eco-corridor Hydraulics.

Environmental Processes in Porous Media

This course will provide the principles regarding rural eco-hydraulics, which is the linkages between physical hydraulics processes and ecological response in rivers, estuaries and wetlands to the graduate students in rural areas. The topics covered in the course will include Environmental Flow, Vegetation Resistance, Hydro-geomorphology, Water-quality Modelling, Habitat Hydraulics, and Eco-corridor Hydraulics.

Rural Eco-Hydraulics

This course will provide the principles regarding rural eco-hydraulics, which is the linkages between physical hydraulics processes and ecological response in rivers, estuaries and wetlands to the graduate students in rural areas. The topics covered in the course will include Environmental Flow, Vegetation Resistance, Hydro-geomorphology, Water-quality Modelling, Habitat Hydraulics, and Eco-corridor Hydraulics.

Rural Infra-Construction Materials Engineering

This course will provide the principles regarding rural eco-hydraulics, which is the linkages between physical hydraulics processes and ecological response in rivers, estuaries and wetlands to the graduate students in rural areas. The topics covered in the course will include Environmental Flow, Vegetation Resistance, Hydro-geomorphology, Water-quality Modelling, Habitat Hydraulics, and Eco-corridor Hydraulics.

Rural Eco-Hydraulics

This course will provide the principles regarding rural eco-hydraulics, which is the linkages between physical hydraulics processes and ecological response in rivers, estuaries and wetlands to the graduate students in rural areas. The topics covered in the course will include Environmental Flow, Vegetation Resistance, Hydro-geomorphology, Water-quality Modelling, Habitat Hydraulics, and Eco-corridor Hydraulics.
of recycled materials, and monitoring and management of rural infra-structures.

M1716.000100 글로벌농촌수자원특강 3-3-0

**Topics in Global Agricultural Water Resources**

Recent global water and food problems, such as food shortage, water and soil pollution, have been caused by over-extraction of water resources. In the meantime, global environmental changes and climate change are expected to accelerate these problems. Therefore, it is required that we have clear understanding of water resources and agricultural irrigation systems.

Rural water resources have a quite long history from civilization and each country and region have specific and quite different agricultural water use characteristics. Therefore, it is quite required to understand that the agricultural water use approach developed in different circumstances. This class is designed for providing chances looking at international agricultural water problems. In this class, variety of international agricultural water problem topics will be introduced including international rural water conflicts from trans-boundary rivers, climate change responses and adaptations, global scale agricultural water use characteristics, and irrigation and drainage systems, etc.

**Seminar in Rural Systems Engineering 1**

5272.701 지역시스템공학세미나 1 1-0-2

본 강좌는 <지역시스템공학세미나 1> 강좌와 다소 다른 지역시스템공학전공 대학원생들을 대상으로 개설한 강좌로서, 국내외 각종 학술지에 논문을 제출할 수 있는 능력을 배양하기 위해 연구논문의 기본적인 작성방법에 대해서 설명하며, 각자 연구분야별로 작성된 논문을 바탕으로 논문 발표 방법에 대해서도 강의한다. 또한, 최근 연구동향에 대해서도 소개 할 수 있도록 외국인강사를 초빙하여 영문논문작성법과 영어로 발표하고 토론할 수 있는 능력을 함양토록 하고자 한다.

The Rural Engineering Seminar is open for the graduate students of rural engineering major. This class in intended to enhance the skills and techniques of writing technical research papers in Korean, English or any other foreign language. The presentation preparation and its lecture skill of developed technical papers will be discussed and practiced. Native foreign lecturer will be invited to improve the ability to write research papers, perform fluent presentation, and discuss with foreigners on the researches in foreign language, especially in English. The state-of-the-art of the researches of rural engineering will be discussed, as well.

**Seminar in Rural Systems Engineering 2**

5272.702 지역시스템공학세미나 2 1-0-2

본 강좌는 <지역시스템공학세미나 2> 강좌와 더불어 지역시스템공학전공 대학원생들을 대상으로 개설한 강좌로서, 국내외 각종 학술지에 논문을 제출할 수 있는 능력을 배양하기 위해 연구논문의 기본적인 작성방법에 대해서 설명하며, 각자 연구분야별로 작성된 논문을 바탕으로 논문 발표 방법에 대해서도 강의한다. 또한, 최근 연구동향에 대해서도 소개 할 수 있도록 외국인강사를 초빙하여 영문논문작성법과 영어로 발표하고 토론할 수 있는 능력을 함양토록 하고자 한다.

The Rural Engineering Seminar is open for the graduate students of rural engineering major. This class in intended to enhance the skills and techniques of writing technical research papers in Korean, English or any other foreign language. The presentation preparation and its lecture skill of developed technical papers will be discussed and practiced. Native foreign lecturer will be invited to improve the ability to write research papers, perform fluent presentation, and discuss with foreigners on the researches in foreign language, especially in English. The state-of-the-art of the researches of rural engineering will be discussed, as well.
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이 교과목을 통해 학생들은 개인 또는 그룹으로 수행한 연구 결과 및 학회 논문을 발표하고 참가자들과 이에 대한 토론을 통해 연구작성 및 발표와 토론에 관한 실질적인 능력을 배양한다. 

In this course, students will present the results of individual or group research, propose theses, discuss the presentations, and enhance their practical competence in essay writing, presentations, and discussions in the area of educational and workforce development. In addition, they will be encouraged to communicate information with one another during researches.

이 교과목은 역사연구방법을 이해하고, 이를 응용하여 산업인력개발의 제도, 내용, 사상의 발달에 관한 변천과정을 연구하며, 우리나라는 산업인력개발의 역사적 발전 과정을 탐구하여 앞으로 우리 나라 산업인력개발의 발전 방향을 모색하는 능력을 기르는 데 주 목적이 있다.

This course aims at enhancing students' ability to explore the developmental process of vocational education and workforce development and to propose a vision of educational and workforce development in Korea. Students will examine research methods in history and use them to study the history, contents, and philosophy of vocational education and workforce development systems.

교육공학에 대한 이해를 바탕으로 교육개발과 관련된 이론과 실제를 연구하고, 이를 실제 산업인력개발에 적용한 교육을 개발한다.

In this course, students will study the teaching materials development in vocational education and workforce development. Topics will cover theories and practices of educational technology, teaching materials development models, and theories and practices of teaching materials development. In addition, students will develop a teaching material which can be utilized in practice.
교육 체계와 요구 분석을 통하여 기업교육전문가로서 현장 대응 및 실천능력을 강화 및 기업교육을 전제적으로 조명할 수 있는 종합적인 안목과 사고력을 배양하기 위한 과목이다.

On the basis of the analysis of trends and issues in Corporate Education, students will study the best practices, HRD systems, and needs analysis in industries, enhance their ability to cope with and practice actual problems as HRD professionals, and develop broad perspectives and thinking skills.

514.631A 특수직업교육론 3-3-0

Vocational Education for Special Needs Population

장애인에 대한 기본개념에 대하여 학습하고 이를 통해 인식 전환을 통해 직업교육에서의 발달장애인을 위한 직업교육과정의 개발과 운영에 관하여 실제적인 사례 중심으로 학습하여 장애인의 직업교육을 할 수 있는 능력을 배양하기 위한 과목이다.

In this course, students will learn the concepts of the disabled, how to convert the view of disabilities, review practical cases of developing and managing curriculums in Vocational Education about disabilities, and to develop a comprehensive ability to educate disabilities in vocational fields.

514.632 직업심리학 3-3-0

Vocational Psychology

직업행위의 심리학적 측면을 이해하고, 이와 관련된 이론을 학습하고, 이를 실제 생활에 적용할 수 있는 능력을 기르기 위한 과목이다.

In this course, students will study the psychological aspects of vocational behavior, various related theories, and practical applications to the vocational field.

514.633 국제직업교육론 3-3-0

International Vocational Education

세계 각국의 직업교육의 일반특성과 체계를 이해하고 최근의 이슈 및 동향, 단면과제, 발전방향 및 이들이 우리나라에 주는 시사점에 관하여 수강자가 직접 조사한 발표와 토론을 통하여 국제 직업교육에 관한 체계적인 이해와 연구능력을 배양하기 위한 과목이다.

In this course, students will study the general characteristics and systems of International Vocational Education, the latest international issues, trends, problems, visions, and suggestions for Korea and develop systematic knowledge of and ability to conduct research on International Vocational Education through presentations and discussions.

514.635A 청소년지도특강 3-3-0

Topics in Advanced Adolescent Guidance

이 교과목을 통해 학생들은 청소년의 이론적 조명, 청소년 문화, 국민의 청소년정책, 청소년지도의 이론과 실제 사례에 대하여 학습하고, 실제 청소년지도 기관을 방문하여 현장 감각을 습득하여, 정규 및 비정규 교육기관에서 체계적인 청소년지도를 할 수 있는 능력을 배양하기 위한 과목이다.

In this course, students will study theoretical views on youths, youth culture, national and international youth policies, related theories, and actual cases of youth guidance. In addition, they will visit youth guidance institutions. The course will help students to acquire practical knowledge of the field and enhance their ability to provide systematic guidance in formal and informal institutions.

514.636A 산업인력개발세미나 2 1-0-2

Seminar in Vocational Education & Workforce Development 2

이 교과목을 통해 학생들은 개인 또는 그룹으로 수행한 연구 결과 및 학위 논문을 발표하고, 참여자들과 이에 대한 토론을 통해 학교의 성과 및 발전과 관련된 실무적인 능력을 배양한다. 또한 대학원 학생 간의 정보교환과 전공을 도모한다.

In this course, students will present the results of individual or group research, propose theses, discuss the presentations, and enhance their practical competence in essay writing, presentations, and discussions in the area of vocational education and workforce development. In addition, they will be encouraged to communicate information with one another during researches.

514.640 실과·기술교육론 3-3-0

Practical Arts and Technology Education

고등 직업교육으로서의 초·중등학교 실과(기술·가정)과목의 과목교육학적인 접근을 통한 이론과 실제에 대하여 학습한다.

In this course, students will study the theories and practice of practical arts courses (Technology and Home Economics) in terms of general Vocational Education through a subject-matter educational approach.

514.641A 성인교육특강 3-3-0

Topics in Adult Education

성인교육의 개념과 종류, 성인교육을 위한 원리, 교육과정의 개발, 성인교육 방법, 평가방법 등을 이해하고 실천할 수 있도록 하는 과목이다.

In this course, students will study theoretical and practical knowledge in Adult Education as it relates to concepts, principles, curriculum development, teaching methods and evaluation.

514.642 고등직업교육론 3-3-0

Postsecondary Vocational Education

21세기 고등직업교육에 영향을 미치는 환경 변화와 인력 수급 전망을 고찰하고, 단기 고등직업교육기관로서의 전문대학의 교육목적과 역할, 전문과정, 현황 및 문제점을 이해하며, 전문대학 교육의 과정, 운영 및 최신 동향과 단면과제, 발전 방향을 이해하여 학습자 자녀대로의 전문대학 발전방향을 정립할 수 있도록 교수·학습한다.

In this course, students will examine the highly changeable circumstances of Vocational Education and employment-unemployment expectations. In addition, they will study the purpose, role, history, curriculum, present condition, and problems of community colleges and establish plans for improvement.
514.643A  
**Studies in Vocational Education and Workforce Development Policy**

This course will investigate the concepts, progress, types, contents, methods, duties of superintendents, and problems and improvements in the administration and supervision of vocational education and workforce development.

514.702A  
**Qualitative Research Methods for Vocational Education and Workforce Development**

This course will deal with qualitative research methods which are relevant and valid to inquire any research problem related to the vocational education and workforce development as a discipline. The major contents include selecting a topic, formulating a research problem, designing a research, research planning, conducting a research, and reporting the results.

514.703  
**Job Analysis and Qualification System**

Students will develop abilities required for program development in Vocational Education in relation to the principles and process of occupational analysis, new analysis, verification methods, and DACUM methods required for the development of curricula and programs in Vocational Education.

514.646A  
**Studies in Administration and Supervision of Vocational Education and Workforce Development**

This course covers research methodologies in vocational education and workforce development. It will help students to acquire knowledge and skills in reviewing, understanding, planning, conducting, and managing theses, dissertations, journals, policy researches, and evaluation research projects.

514.649A  
**Research Methodology in Vocational Education and Workforce Development**

This course covers the theoretical and practical knowledge of and trends in Vocational and Adult Educator Education. It will help students to conduct systematic research on Vocational and Adult Educator Education in Korea.
514.666A Statistics in Vocational Education and Workforce Development

This course will provide students with the basic techniques and research methods used in the collection, organization, and analysis of research data on vocational education and workforce development. In addition, they will explore statistical packages for analyzing research data.

M1643.000900 HR Analytics and Performance Management in Vocational Education and Workforce Development

This course focuses on performance management, the 4th component of vocational education and workforce development following individual development, career development, and organizational development. Especially, the course helps students understand job design which is one of the two critical components of performance management (job analysis and job design). Moreover, this course provides opportunities for students to discuss how performance management based on HR analytics could be conducive to development of vocational education and workforce development, which ultimately improves students’ HR analytic skills.

M1643.000200 Labor Market Analysis in Vocational Education and Workforce Development

This course provides a theoretical and practical basis of labor market analysis methods in vocational and workforce development. In the course, students will learn how to identify and analyze of economics of vocational education and workforce development. Especially the course will cover over-education and mismatch in the labor market, returns to skills and vocational education, and labor market forecasting.
This course provides a theoretical basis of occupational research methods in vocational education and workforce development. In this course, students will learn basic techniques and research methods used in the analysis of occupation. Also, they will acquire the basic knowledge of the skills forecasting in the field of vocational education and workforce development. Especially, the course will cover occupational structure, occupational classification, occupational and job mobility, prestige of occupation, and skills forecasting.

M1643.000400 산업인력개발교수학습이론 3-3-0

Theories of Teaching and Learning in Vocational Education and Workforce Development

In this course, students will acquire the basic knowledge of teaching and learning theories in relation to Vocational Education and Workforce Development. The course will help them to apply that knowledge to and conduct research at vocational high schools, colleges, universities, and enterprises.

514.803 대학원논문연구 3-3-0

Reading and Research

In this course, students will develop their ability to plan and carry out research projects. The course will provide them with an opportunity to identify important research problems and to conduct research under supervisor’s directions.
therefore discuss the advantages and disadvantages of in-
vironment-friendly biopesticides. In this course, students will
deterioration due to their residues. One of the strategies to
natural enemies, environmental contamination, and ecosystem
development of pesticide resistance, destruction of beneficial
spread use of synthetic pesticides has brought several un-
cultural technology innovations, variety breeding, and the de-
volution of synthetic organic pesticides. However, the wide-
cultural technology innovations, variety breeding, and the de-
ined in biology. Also examined will be the common principles of mi-
mental pollution as well as pollution from agricultural acti-
cientific determinants in plant pa-
thetic. Molecular mechanisms of the host’s defense and re-
sistance to diseases and pathogen attacks will also be ex-
aminined. This class is an introduction to molecular genetics on vi-
rual, bacterial and fungal plant pathogens. We will study the
molecular aspects of pathogenicity determinants in plant pa-
thetic. Molecular mechanisms of the host’s defense and re-
sistance to diseases and pathogen attacks will also be ex-
aminined. This class is an introduction to molecular genetics on vi-
rual, bacterial and fungal plant pathogens. We will study the
molecular aspects of pathogenicity determinants in plant pa-
thesis.
sitisim, and discuss in depth on the plant's defense mechanisms and herbivore's counter defense strategies. In addition, students will study the relationships between disease vector insects and pathological microorganisms.

**5321.7006 동물유전학특강** 3-3-0

*Topics in Animal Genetics*

Mendel 유전, 연관 분석, 염색체와 염색체 이상 등에 대한 대학원에서의 심화된 부분을 학습하고 유전물질, 전사, 복제, 발현, 유전자 발현 및 조절 등에 포함된 분자 유전학에 대해 공부한다. 특히, 동물의 유전현상과 발현 조절을 심도 있게 학습하며, 유전자의 작용, 유전체 프로젝트, 유전자의 발현, 유전적 유산의 활용 등에 대해 다루어 폭넓은 지식을 경험할 수 있도록 한다.

This course provides the theoretical and experimental deep parts of animal genetics including Mendelian gene transmission, correlation analysis, chromosome genetics, genetic materials, transcription, replication, translation, gene expression, and control. The course will also cover immunogenetics, functional genetics, and transgenesis for animal applications and will provide how to get massive genetic information because genetic phenomenon and expression in animals are deeply correlated with productivity.

**5321.7003 농생명공학콜로퀴엄 1** 1-0-2

*Colloquium in Agricultural Biotechnology 1*

농생명공학분야의 최근 연구과제를 주제로 초청한 외부 연구자 및 교내 교수의 강의를 통한 지식 제공과 논의를 통하여 대학원생으로서 알아야 할 내용을 습득할 수 있도록 한다.

This course will consist of lectures on current research topics in agricultural biotechnology presented by distinguished invited speakers and staff members.

**5321.7004 농생명공학콜로퀴엄 2** 1-0-2

*Colloquium in Agricultural Biotechnology 2*

농생명공학分야의 최근 연구과제를 주제로 초청한 외부 연구자 및 교내 교수의 강의를 통한 지식 제공과 논의를 통하여 대학원생으로서 알아야 할 내용을 습득할 수 있도록 한다.

This course will consist of lectures on current research topics in agricultural biotechnology presented by distinguished invited speakers and staff members.

**5321.5101 근육식품학특강** 3-3-0

*Topics in Unit Processes of Muscle Foods*

この講座では、最近の生物学、分子生物学、細胞生物学においての新たな発見と理解が増えており、細胞内の物質变换とエネルギー供給、また、細胞内の情報伝達システムについての研究が進んでいます。この講座では、これらの分野における最近の発見と理解を紹介し、学生がこれらを理解するための基礎知識を提供することを目的としています。

Recent topics from the Muscle Food Science area are selected and examined in relation to industry and current research trends. Graduate students will then obtain the necessary, current information on these topics through literature surveys as well as presentation and discussions.
세포 신호 전달체계는 현대 생물학에서 매우 중요한 위치를 차지하고 있다. 다양한 종류의 세포들이 다양한 환경에서 기능을 수행할 수 있게 해준다. 이러한 기능은 세포 내의 신호전달물질들에 의해 주어진다. 이는 세포내의 정보를 전달하는 역할을 한다. 

Animal Cell Signaling

세포 내 신호 전달체계는 현대 생물학에서 매우 중요한 위치를 차지하고 있다. 다양성과 복잡성을 특징으로 하는 이러한 기능은 개체 내에서 신호에 대한 반응, 환경의 적응, 그리고 이러한 환경에서의 생존 등 여러 작용을 주관한다. 그러나 이러한 세포 내 신호 전달체계에 대한 기관적인 작용들은 종에 따라 독특하게 나타나는 것도 있지만,]+=한 종류의 신호를 동일한 방식으로 전달하는 것이 주로 발견된다. 기본적인 원칙과 기작은 서로 다른 종에도 유사하게 나타난다는 것을 여러 실험을 통해 확인할 수 있다. 이러한 유사성을 통해 비록 다른 종, 또는 다른 조직의 세포들을 연구하더라도 기존적으로 사용되는 기술들은 거의 동일하다고 할 수 있다. 따라서 세포 신호 전달체계는 단지 정상세포의 기능만을 이해하는 것이 아니라, 비정상적인 세포의 성장과 활동, 특히 적절하지 않은 환경에서도 작용 통해 극적한 변화를 이해하는 데도 중요한 역할을 한다. 예를 들어 암세포의 성장하는 세포의 이러한 비정상적인 성장은 세포 신호 전달체계의 연구를 통해 암세포들을 억제하는 데 도움을 줄 수 있다. 이와 같은 연구는 생물학의 기초와 혁신의 핵심으로, 암 치료나 암 세포의 억제에 대한 연구가 활발히 진행되고 있다.

Cell signaling has become a vital and integral part of modern biology, and has an innate complexity. It controls the inner working of organism, allowing them to respond, adopt and survive. However, the basic workings of cell signaling events are not vastly diverse across different organisms, but rather the regulatory needs of organism’ cells are similar. Principles and mechanisms can be seen to be repeated across the kingdoms of species. With similar mechanism chemistry being used by a wide variety of organisms tissue, and cell, it is of no surprise the techniques used for their study are also similar. Cell signaling is not only important for the understanding of the functioning of a normal cell, but is vital importance to understand the growth and activity of an aberrant cell, or that of a cell that is combating adverse condition. For example, the discovery of oncogenes, genes which cause the uncontrolled growth of cells which may lead to cancerous growths, was heralded as a major breakthrough in the understanding of cancer. The current lecture will be dealing with the basic principles in cell signaling via various molecules including receptors/ ligands, intracellular transduction molecules and responses produced by these signaling. Lectures will be given in English.

5321.5108 동물세포신호전달학 3-3-0

Topics in Animal Industry

본 과목은 동물을 이용하는 산업계의 전문 경영인이 강의에 직접 참여하여 현재 동물산업의 현황과 발전방향에 대해 알아보고 신기술의 산업화 전략에 대하여 토론하는 수업이다.

Topics in Animal Industry is a class lectured by actual CEOs in animal industry and covers topics on the current status and developing plans of animal industry. Also, active discussion of developing strategic plans for the application of novel technology to animal industry will be offered.

5321.5109 동물유전정보학특론 3-3-0

Animal Population Genetics

동물집단유전학에서는 동물집단의 유전적 특성, Hardy-Weinberg 정정, 선발, 돌연변이 및 이주에 의한 유전자반도의 변화, 선발과 돌연변이간 정정, 형질확산체에 유리한 선발, 동물집단의 다양성, 유전자 반도의 분산, 효율집단 크기, 동물집단의 완화, 근교계수, 돌연변이와 돌연변이가 아닌 당연한 확률이 있는 경우의 수등에 대한 학습을 통해 학생들은 다양한 염료의 종에 대한 강의를 제공한다.

The topics covered in this course will include the genetic constitution of populations, the Hardy-Weinberg equilibrium, change of gene frequency by selection, mutation and migration, balance between selection and mutation, selection favoring heterozygotes, polymorphism in animal populations, variance of gene frequency, effective population size, random drifts in animal population, inbreeding coefficients, inbreeding in animal populations, application of population genetics, and principles of the genetic improvement of farm animals.
5321.6103 Rumen Microbial Ecology

Rumen Microbial Ecology

The microbes in the ruminant’s forestomach and those in the hindgut of other animals provide means by which herbivorous animals can digest and obtain nutrients for the production of animal products from vegetation. This course will cover the following topics: the types and characteristics of rumen anaerobic bacteria, protozoa, and fungi; the digestion mechanism of plant components by rumen microbes; microbe-microbe interactions; fermentation manipulation techniques; the genetics of rumen microbes; gene characterization and utilization; and metabolic disorders by rumen microbes. All these topics will provide information necessary for a good understanding of the roles of rumen microbes in animal production.

5321.6104 Physiology of Lactation

Physiology of Lactation

Students will devise practical formulations of feed, considering various factors that may affect the quality of animal feed. In addition, they will study recent topics in the feed industry such as GMOs, organic feed, and functional nutrients for the production of functional products from animals.
sons to being live is that living organisms such as human can resist this invasion. This resistance is due to multiple interlinked defense mechanisms, which is what we are studying in this course, immune system. The immune system is a remarkable defense mechanism, found in its most advanced form in higher vertebrates. Our understanding of the structure and function of the molecular components of immunity has expanded greatly. It provides the means to make rapid, highly specific, and often very protective responses against the myriad potentially pathogenic microorganisms that inhabit the world in which we live. The current course has its goal the authoritative presentation of the basic elements of the immune system; of the means through which the mechanism of immunity act in a wide range of clinical conditions, including recovery from infectious diseases, rejection of tumors, transplantation of tissue and organs, autoimmune and other immunopathologic conditions, and allergy; and how the mechanisms of immunity can be maartialed by vaccination to provide protection against microbial pathogens. Also, the current lecture will be dealing with the interaction of immune cells including cross-talk among immune cells and its signaling mechanism together with interactions and functionality of cellular immune system.

5321.7102 조류유전공학 3-3-0

Avian Genetic Engineering

가금류를 중심으로 한 조류의 초기 배아발달과 부화, 성분화 및 원시생식세포, 조류의 신생기와 내분비, 난란과 달걀 형성기사 등의 기초적인 조류 생리 등에 대해 공부하며, 가금류의 유전자, 유전자 발현과 조절, 유전자 조작, 가금 유전체 프로젝트의 현황과 실용 체험전환 가금을 포함한 조류의 유전자 변형기술과 실용 등에 대해 알아본다. 특히 닭, 메추리, 치마, 친만등 등 가금류에 있어서 생산성 향상을 위한 장강조절, 항병성조절 분야에서의 유전자, 유전자 발현과 조절에 대한 기술적 기반의 공부하고 끝난다.

5321.7103 축산시설환경특강 3-3-0

Topics in Bioenvironmental and Structural System for Livestock

이 과목은 기본적으로 대학원생을 위한 ‘축산시설환경’분야의 유통과목으로 수강대학원생들이 이 분야에 기초적으로 학문적 배경을 갖을 수 있도록 하기 위해 이 과목은 동물정학시설의 적정 환경 관리를 위한 생물학의 기초와 이론이 필요한 학생들에게 학습하게 한다. 이 과목에서 동물정학환경을 최적화하는 데 필요한 생물, 화학, 물리의 기초지식을 우선적으로 다루며, 나아가 환경이 동물의 생식 및 행동에 미치는 영향, 열환경, 공기환경의 해석, 자연 및 기계적 환경시스템, 악취제어, 온습, 통더, 청소, 분뇨관리 등을 다룬다. 이들 중합하여 또한 최근 많이 다루고 있는 실림동물의 환경개선을 언급한다.

In this advanced course, students will study animal facilities and environment. They will be assumed to be familiar with the basic concepts of this field. The course will provide students with an understanding of bioengineering principles and their applications to operational systems for animals. It will begin with the fundamentals of biology, chemistry, and physics. Topics will cover the impact of the environment on animal production and behavior, analysis of thermal and aerodynamic environments of animals, operational systems involving natural and mechanical ventilation, odor control in relation to ventilation systems, feeding, lighting, and manure storage. Environmental control for experimental animal chambers for rats, mice, and others will also be discussed.

5321.7104 축산식품질론 3-3-0

Quality of Livestock Products

축산물 품질의 물리화학적 특성 및 측정 방법 원리와 품질요소별로 공부하고, 생산자가 의도하거나 소비자가 원하는 품질의 축산물을 생산하는 방법에 대해 문헌 조사를 토대로 학문적 기반을 확대하고 할 수준을 과학적으로 이해하게 한다.

In this course, students will study the physicochemical properties of dairy products and how to measure them for every quality attribute. In addition, quality will be understood more in depth and scientifically through a survey of the literature and discussions on how to produce animal products of the quality demanded by producers and consumers.

5321.7105 축산학세미나 1 1-0-2

Seminar in Animal Science 1

본 세미나에서는 동물생명공학 전반에 걸친 분야 중 특정 분야 를 한 학기당 선정하여 그 분야에서의 전문가를 초빙하여 최근 연구동향과 학과 내 연구동향을 소개할 예정이다.

In this course, one specific topic in animal biotechnology will be selected. Invited experts and researchers will introduce students to the latest research trends in the chosen field.

5321.7106 축산학세미나 2 1-0-2

Seminar in Animal Science 2

본 세미나에서는 동물생명공학 전반에 걸친 분야 중 특정 분야 를 한 학기당 선정하여 그 분야에서의 전문가를 초빙하여 최근 연구동향과 학과 내 연구동향을 소개할 예정이다.

In this course, one specific topic in animal biotechnology will be selected. Invited experts and researchers will introduce students to the latest research trends in the chosen field.

51718.000500 동물발생학특강 3-3-0

Topics in Animal Embryology

<동물발생학특강>은 생식과정에서 테이블생성까지 과정 중 조직 및 기관형성과정까지의 발생현상 및 과정을 설명하는 과목이다. 본 강좌에서는 핵심목표와 핵심목표가 다른 학생들에게 맡겨진 잠재력과 학기별 교육, 평가의 발전에 초점을 두는 다양한 주제를 소개한다. 일반 과학과정에 대한 입학 우수한 척도보다는 기초학문적 접근을 통해 동물발생학, 발수학, 유전자학, 동물함성현상, 동물학, 동물발생학에 대한 기초적 이해 및 총정 생명과학의 핵심을 수록할 수 있는 기회를 부여할 것이다.

<Topics in Animal Embryology> is a lecture for basic
anatomy, embryology and developmental biology for developing gameteand developmental biotechnologies. Students majoring in basic and applied sciences in the field of biotechnology will take the knowledge on organogenesis and tissue and system development of the body during fetal development through this lecture, which is important for acquiring fundamental knowledge of animal biotechnology. Major topics are organogenesis, preimplantation development, germinai layer formation and differentiation into the tissues and organs of the body in mammalian species.

Vitamin and Mineral Nutrition

This course deals with the characteristics of individual vitamins and the interrelation between vitamins and other nutrients. Recent research topics on vitamins will be provided to help the students' understanding. Because animals are genetically improved to lean genotypes today, it is necessary to help the students' understanding. Because animals are genetically improved to lean genotypes today, it is necessary to revise the requirements of vitamins, which were established 50 years ago. Students therefore will have a chance to consider problems in current vitamin requirements, how we can reestablish or devise experimental designs of vitamin interactions, migration regulation mechanisms, maturation process, and organs of the body in mammalian species.
students must have taken the prerequisite course, immunology and/or advanced immunology.

5321.5202 구조생물학 3-3-0

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### Mode of Action of Pesticides

Pesticides are bioregulators that control various organisms, such as insects, microorganisms and weed. They can kill, retard or sometimes even enhance the living activity of organisms. This course deals with the comprehensive understanding of the action mechanism of pesticides, including insecticide, fungicide, herbicide, growth regulator, and biocide, to provide knowledge necessary for the future development of low-toxic, environmentally friendly pesticides.

5321.5204 농약작용기작론 3-3-0

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### Metabolic Engineering

The course will examine the manipulations of metabolic pathways to enhance or block accumulation of a metabolite through genetic and physiological modification of an organism.

5321.5207 식물생태화학 3-3-0

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### Plant Ecological Chemistry

This course studies the interactions between more highly developed plants with other plants, microbes, and insects. Emphasis will be placed on the chemical, biochemical, and molecular biological aspects of such interactions.
will be introduced. In addition, bioinformatic principles and tools to create various useful products by illustrating the basic concepts of experimental results and methodological strategies. This course will cover the following concepts at an advanced level through the professor’s lectures and students’ presentations and discussions of selected papers, with an emphasis on plant physiology and biochemistry:

- The uptake, movements, and metabolism of plant nutrients
- The uptake and movements of water in higher plants
- Plant-microbe interactions in terms of plant nutrition including photosynthesis as a strategy to uptake solar energy and to fix CO₂ in higher plants
- Plant respiration
- The roles, biochemistry, and modes of action of phytohormones
- Photomorphogenesis and photoperiodism
- Environmental stress and plant physiology
- Plant nutrition and biotechnology

5321.6202 유전공학 3-3-0

Genetic Engineering

유전공학은 유전자의 개조 및 외래유전자 이식발현을 통해 유전 앙호의 제조과정으로부터 생명의 특성을 바람직한 형태로 효과적으로 전환시키는 것을 목적으로 한다. 따라서 분자생물학, 세포생물학, 미생물학 및 생화학 등 다양한 분야의 학문적 지식이 요구되며, 이 과목은 유전자의 구조, 복제 및 발현 원리에 대한 일반적 이론, 유전자 재조합 및 생명체 전입을 통한 절연생물의 특성 및 이용에 대한 실례를 통한 강의로 구성된다.

At the beginning of this course, students will be presented with the principles and applications of molecular biotechnology on the basis of the transfer of specific units of genetic information from one organism to another. The course will introduce and explain what molecular biotechnology is, how research in the field is conducted, and how this technology may realistically impact on our lives in the future. It will also emphasize how recombinant DNA technology can be used to create various useful products by illustrating the basic concepts of experimental results and methodological strategies.

5321.6203 유전체 및 생물정보학 3-3-0

Genomics and Bioinformatics

생명현상의 정보를 담고 있는 유전체의 구조와 유전 정보가 사 람을 포함한 주요 분자, 미생물 등에서 최근 발전하고 사라져서 유전체를 구성하는 유전자의 기능에 대한 연구가 21세기 생명과학의 핵심으로 등장하고 있다. 따라서 구조의 유전체학 및 기능 성 유전체학의 결합을 위한 생명정보의 집적 및 효과적인 활용을 다룬다.

This course will cover the structural and functional genomics of various organisms including human beings, plants, and microbes. In addition, bioinformatic principles and tools will be introduced.

5321.6204 천연물화학 3-3-0

Natural Products Chemistry

천연물의 정의와 생태화학적 의미를 살펴보고, 생합성에 따른 분류와 생합성 연구기술과 구조분석기술 등을 강의한다.

In this course, various topics in natural products chemistry such as the definition and role of chemical ecology, biosynthesis, classification, techniques in biosynthetic studies, and structural analysis will be presented.

5321.6205 토양물리학 3-3-0

Soil Physics

이 과목에서는 토양의 다양한 물리적 성질을 공부하고, 이에 연관 된 밀도, 공극률, 수분 함량 및 포태성 관점에서 토양 수분의 상 대를 정량하고, 토양에서 일어나는 일, 수분 및 기체의 수송현상을 적정한 모형과 함께 다루면서, 수자원 보호 및 관리, 토양 및 수 질 오염 방지, 토양 복원과정 및 식물의 수분상태 등 여러 현안 문제를 해결하는 데 토양물리학을 적용하고자 한다.

In this course, students will: study the physical properties of soil; quantify the physical state of the soil water system in terms of density, porosity, water content, and water potential; discuss the dynamic processes of heat, water, and gas flow in soil, and use appropriate models for the description of these processes; and apply the science of soil physics to the solution of contemporary problems in water conservation, water management, prevention of soil and ground water contamination, remediation of contaminated soils and the management of plant water status.

5321.6206 토양화학특강 3-3-0

Topics in Soil Chemistry

이 과목에서는 토양, 지구, 환경, 자연 및 농업과학을 전공하는 대학원생을 위해 토양화학에 관한 보다 많은 지식과 정보를 소개 한다. 이 과정에서는 토양이 지닌 다양한 화학적 성질에 의해 나타나는 문제를 소개하고 이를 해결하는 데 토양화학 이론을 적용하여 학생들에게 하여금 토양화학을 보다 잘 이해하도록 한다.

This course provides students of soil, earth, environmental, natural, and agricultural sciences with advanced knowledge and information on soil chemistry. It will also apply the science of soil chemistry to the solution of contemporary agricultural and environmental problems associated with the chemical dynamics of the soil, thus helping students to better understand it.

5321.6208 미생물화학특강 3-3-0

Topics in Microbial Chemistry

미생물의 화학적특성을 그 분부한 생산성에 의해 다양한 화합 물 및 활성인자를 만들어 내는데 있다. 본 과목은 이러한 다양한 대사과정의 화학구조, 화학적 및 생합성학적 성장, 생합성학적 작업에 기여할, 생합성에 관한 기능을 다루고 유용자원으로서의 가치 및 최근의 연구동향에 관한다.

Microbes are exceptionally rich and diverse sources of new metabolites. These metabolites vary enormously in structural complexity and biological activity. This course will introduce advanced concepts related to the chemical diversity of microorganisms, biological activity and mode of action of various compounds, and biosynthesis of secondary meta-
Topics in RNA Metabolism

This course focuses on topics related to the biogenesis and function of small RNAs and the mechanism of mRNA processing (such as transcription, splicing, and 3'-end formation of mRNA). The course will cover the general aspects of gene expression regulation in eukaryotes. In addition, the genomics and targeting of microRNAs will be covered in the class.

In this course, students will be expected to develop skills for the critical analysis of data and for the design of experiments to address fundamental questions in the field.

Topics in Nucleic Acid Biochemistry

This course focuses on understanding the roles of RNAs and proteins in the regulation of gene expression in eukaryotes. The course will focus on topics related to the biogenesis and function of small RNAs and the mechanism of mRNA processing (such as transcription, splicing, and 3'-end formation of mRNA). During the course, students will be expected to develop skills for the critical analysis of data and for the design of experiments to address fundamental questions in the field.

Soil Environmental Microbiology & Biochemistry

This course will introduce advanced concepts related to the transformation of various chemical compounds in the environment by microbes including carbons, nitrogen, phosphorus, sulphur, iron, and xenobiotic compounds.
disciplines. Reviews on recent developments in these fields and student presentations on related papers are integral parts of this course. Research tools and approaches as well as various methodologies for critical analyses are introduced. Students are expected to actively participate in critical evaluation and discussion on recent progress in the field. This course, therefore, will aim to help graduate students gain a comprehensive understanding and interpretation of their research topics in pursuit of academic excellence.

M1718.001500 분자구조해석특강 3-3-0

Topics in Molecular Structure Analysis

이 강의는 유기화합물의 구조분석에 동원되는 각종 기기분석 (Elemental analysis, IR spectroscopy, NMR spectroscopy, Mass spectrometry, UV/VIS spectroscopy, X-ray crystallography)를 거쳐 기본 원리와 기기의 구조, 응용과 분석결과의 해석방법을 익혀 미지의 유기 화합물 구조를 동정할 수 있는 능력을 습득한다.

Elemental analysis, IR spectroscopy, NMR spectroscopy, Mass spectrometry, UV/VIS spectroscopy, and X-ray crystallography are the most important instruments used for molecular structure determination of organic compounds. This course covers the principles, instrumentation and interpretation of results using such instruments, so that students can obtain the ability to determine the structure of unknown organic molecules.

식물미생물학전공(Plant Microbiology Major)

5321.5301 기주기생체생리형태학 3-3-0

Host-Parasite Physiology and Anatomy

이 과목은 식물병균과 기주의 상호작용에 관한 생리학적 및 형태학적 현상을 다룬다. 특히 식물병균균이 생성하는 독소와 효소의 식물체에 대한 공격 메커니즘을 탐구하며 식물체는 병원균에 끼치는 phytoalexin의 생산성 경로와 유도지향성의 원리를 다루게 될 것이다.

This course covers physiological and morphological aspects of a plant-parasite interactions. The students will come to understand the attacking mechanisms of toxins, enzymes that plant pathogens produce, as well as induced resistance and defense mechanisms such as phytoalexin production Morphological changes will also be reviewed in diseased plants.

5321.5302 농업미생물생태학 3-3-0

Microbial Ecology in Agriculture

토양미생물의 분포, 기능, 활동성 등에 대하여 포괄적으로 공부하고, 토양에서의 미생물과 농작물의 상호작용을 분석, 이해하며 농업분야에서 응용되고 있는 미생물을 이용한 biotechnology를 공부한다.

This course examines the current state of soil microbiology and microbial ecological methodology. The class will consist of lectures, readings from various literature concerning these areas, and student presentations. Special emphasis will be on the functional roles, ecology, and population dynamics of soil microorganisms.

5321.5303 농업미생물유전학 3-3-0

Microbial Genetics in Agriculture

바테리아의 유전물질과 유전현상을 다루는 학문으로서, 핵산의 복제, 유전자의 구조, 유전자 간, 유전자 발현의 조절기전, 자화산과 화학물질에 의해 손상된 핵산물질의 교정기작 등을 중점적으로 공부하고, 생물공학기법에 자주 사용되는 여러 가지 분자생물학적 방법과 원리에 대하여 알아본다.

This course examines the current state of microbial genetics. Emphasis will be placed on the genetic fundamentals and processes of diverse microorganisms.

5321.5304 생물조직 및 미세구조연구기술 2-1-2

Methods in Histological and Ultrastructural Research

이 과정에서는 광학현미경, 공중정주사현미경, 전자현미경을 이용하여 생포와 조직의 구조를 연구하는 기술을 습득한다. 강의는 현미경의 원리, 이미지 형성, 시료준비에 대하여 이루어지며, 학생들은 자신의 시료를 이용하여 심을 수확하여야 하며, 그 결과를 학교당에 제출하여야 한다.

In this class, students will be encouraged to develop new methods and techniques for the study of cell and tissue, structure, using light microscopy, confocal laser scanning microscopy, and electron microscopy. Lectures will focus on principles of microscopy, image formation, and sample preparation. Using their own research materials, students will experience the whole microtechnical process from the beginning. They will also submit results from their microscopic research at the end of the semester.

5321.5305 수영학 및 실험 3-2-2

Forest Pathology & Lab

수목병의 원인, 방병법, 진단 및 치료 등 수목병의 일반적 특성을 이해하고, 생물적 요인과 비생물적 요인에 의한 각각의 수목병의 원인과 방병 및 치료법을 숙지하여 실제적인 수목병에 대한 이해를 도모한다.

This course is for students who are interested in understanding forest pathology. It provides a general etiology of forest diseases and pathogenesis. Students will also study diagnosis as well as management and control. They will then put their knowledge to practical use by performing diagnoses and controls of various forest diseases.

5321.5306 식물균병학 및 실험 3-2-2

Fungus Disease of Plants & Lab.

식물에 병을 일으키는 곰팡이의 특성을 이해하고 이들이 일으키는 식물병들에 대한 지식을 습득한다. 구체적으로는 식물병균 곰팡이의 종류 및 생리, 유전학적 특성을 살펴보고 곰팡이의 특성에 따른 병병을 이해하는 곰팡이의 종류에 따라 비교한다. 경우적으로 손상이 큰 주요 작물에 발생하는 곰팡이병에 중점을 둔 식물병의 진단, 방병방법의 피로학적 방법에 대한 내용을 수학한다. 강의를 통해 습득한 내용들을 직접 실험을 통해 확인한다.

This class is an introduction to plant diseases caused by fungal pathogens. Emphasis will be on diagnosis, taxonomy, physiology, and genetics of fungal pathogens. Molecular and pathological understanding of infection and defense mecha-
nisms during pathogenesis will be studied on model patho-
systems. Laboratory exercise will include isolation and char-
acterization of fungal pathogens from diseased plant samples, as well as Koch’s postulate. In addition, novel approaches to
total fungal plant diseases will be examined.

**5321.5307 식물바이러스병학 및 실험 3-2-2**

**Plant Virology & Lab.**

This course provides knowledge of the general characteristics
of plant nematodes such as morphology, physiology, reproduction, genetics and ecology, classification and identifi-
cation, pathogenesis, and control. Also, the course will cov-
er specific nematode diseases to promote the students’ under-
standing of plant parasitic nematodes and their basic capa-
bility to conduct research in this area. Laboratory sessions
will consist of the morphology, physiology, reproduction, genetics and ecology, classification and identification of plant nematodes.

**5321.6304 식물병학원리 3-3-0**

**Principles of Plant Pathology**

이 과정은 학생들로 하여금 학부과정에서 배운 식물병학총론
그 과정과 결합적으로 취득한 실제적인 병의 특성을 이해하여 실
제의 차원에서 식물병학원리에 대한 지식 함양을 목적으로 한다. 병
원체와 동물, 식물의 질병, 이 두 가지의 영향을 미치는 환경 요
인을 구체적인 예를 들어 공부하며 식물병의 유전, 방제 원리에
대한 정보를 공유하여 식물병 연구에 해맞을 갖도록 유도한다.

**5321.6305 식물생리학특강 3-3-0**

**Topics in Plant Physiology**

이 강의에서는 주로 식물의 대사를 다루게 될 것이다. 즉 광합
성의 일반학 및 중종성의 베이커니즘과 식물의 질소고정과 질소동화
의 원리를 강요한다. 또한 식물 분화에 대한 최근 연구 동향도 아
울리 토의한다.

This course will deal with plant metabolism including the
light and dark reactions of photosynthesis, nitrogen fixation,
and assimilation in plants. Recent research trends in plant
development will also be discussed.

**5321.6306 식물선충병학 및 실험 3-2-2**

**Plant Nematology & Lab.**

식물선충의 특성(형태, 생리, 생식, 유전, 생태), 분류 및 동정,
병발생, 방제 등 일반적인 식물선충의 지식을 함양하고 중요 식물
선충병의 각론을 숙지하여 식물선충에 대한 이해와 이를 연구할
수 있는 기초 능력을 배양한다. 실험에서는 선충의 형태, 분류 및
분화와 동정을 집중 강요한다.

**5321.6307 식물병학실험법 2-1-2**

**Research Methods in Plant Pathology**

식물병의 발생원인 및 방병 메카니즘에 대한 연구를 실행하는
데 있어서 최근의 식물병학 연구에 적용할 수 있도록 각종 실험
기법에 대한 연구를 어떻게 수행하는지를 심화학습하여
연구기법의 적용능력을 향상시킬 것이다. 다양한 연구기법을
이용하여 주로 병원체 관련 유전자 및 식물체의 방어 관련 유전자
에 대한 연구를 어떻게 수행하는데에 대한 내용을 심화학습하여
연구기법의 적용능력을 향상시킬 것이다.

The class will emphasize on diverse experimental techni-
ques applicable for plant pathology recent molecular biology
and cell biology techniques to research about understanding of molecular mechanisms on pathogenesis in plants. The application of the molecular and cell biology techniques to the application about genes determining pathogenicity of pathogens and involved in defense of plants against pathogen attacks will make the applicability improved.

5321.7301 식물세균병학 및 실험
Phytobacteriology & Lab.

This course will focus on the general features of plant bacteria, bacterial disease diagnosis, and control measures.

5321.7302 응용균학 및 실험
Applied Mycology & Lab.

This course will focus on the general features of plant bacteria, bacterial disease diagnosis, and control measures.

5321.7303 진균독소학 3-3-0
Mycotoxicology

Mycotoxicology deals with fugal secondary metabolites, which are toxic to mainly animals and human beings. Filamentous fungi including Aspergillus, Penicillium, Fusarium, Alternaria Stachybotrys, Myrothecium 등 사상관에 의해 생성되는 독소의 독성, 자연발생, 생합성 메카니즘, 독성 균주의 유전적 다양성 및 독소의 제어방법 등을 강의한다.

5321.7310 식물미생물학세미나 1 1-0-2
Seminar in Plant Microbiology 1

<식물미생물학세미나 1>는 외부 연구 초청에 의한 강연과 토의 그리고 대학원생들에 의한 특별 주제발표나 연구 진행 또는 결과보고 등의 두 가지 형태로 진행된다. 식물미생물학 분야의 모든 연구분야를 중심으로 주로 최근에 많이 논의되는 연구결과와 성과 등을 발표하고 토의하여 대학원생에게 연구주제를 선택하고 연구과정을 계획하는 능력을 취득하게 할 것이다.

In this course, seminars will be held every week for graduate students in the MS and Ph D programs in Plant Microbiology. Students will present and discuss current literature in Biology. Topics on any area of plant pathology and environmental microbiology will be discussed and presented. The course will provide students with an opportunity to develop their ability to select proper research topic and plan their research process.

M1718.001200 농업환경미생물학특강 3-3-0
Topics in Environmental Microbiology in Agriculture

본 과목은 농업환경과정에서 사용되는 비료와 농약에 의한 농업환경오염의 본질과 원인을 분석하고, 이러한 오염물질을 제거하고 농업환경을 정화하는데 중요한 역할을 수행하고 있는 농약분해 미생물의 생태와 기능, 오염물질 분해효과와 환경, 군집학적, 군집간의 상호작용, 환경요소의 영향 등에 관하여 공부한다.

This course will examine environmental pollution problems of fertilizers and pesticides used in agriculture and study ecology and functions of pesticide-degrading microorganisms, biodegradative pathway and fate of pesticides, microbial populations dynamics and interactions, and effects of environmental factors on pesticide-degrading microorganisms.

M1718.001300 식물바이러스학특강 3-3-0
Topics in Plant Virology

본 과목은 식물바이러스학 및 실험을 기 수강한 대학원생들을 대상으로 분자 식물바이러스학 분야에 대한 전문적 지식을 제공함을 목표로 한다. 학기 중에 강의를 통하여 식물바이러스학 과학의 현황, 연구진행, 연구결과 및 그 적용성을 및 바이러스학 분야의 특성, 연구방법, 바이러스의 생리 및 생화학적 속성에 대한 특징, 바이러스의 유전학적 특성 등에 대하여 토론하고 식물바이러스학의 생명공학적 활용에 대하여 논의한다. 본 강좌는 주제별로 토론 형식으로 진행되며, 발표는 수강생의 강의를 위해 선수과목인 식물바이러스학 및 실험을 반드시 수강한 대학원생들만 신청할 수 있다.

This course discusses the recent trends and/or findings in molecular plant virology and requires plant virology and lab class as mandatory prerequisite class. Lecture topics will address plant virus-host interactions with special emphasis on
understanding host's resistance responses as well as viral disease progresses. Emphasis will also be on conceptual aspects of virus transmission through specific interactions between plant virus and vectors, virus adaptation and evolution, and application of plant viruses in biotechnology and in solving field problems. Since this class will discuss and ask presentations for each topic with recent research progresses, this course is geared for plant microbiology majors, but is only open to students who already took plant virology and lab class.

Topics in Physiological Plant Pathology

‘식물병생리학’은 생리학, 화학, 생화학 및 분자생물학 수준에서 기주식물과 관련된 상호작용을 이해하기 위한 학문이다. 이 과목은 식물과 벌인균의 상호작용과정과 이 과정에 관여하는 분비효소나 미생물독소 등 벌인균이 생리학적 요인에 대해 주제별 심화 토론 형태로 진행된다. 따라서 학생은 성공한 강의 진행을 위해 이 과목의 수강대상자는 식물생리학특강과 진균독소학을 선행 수강한 대학원생으로 정한다.

‘Physiological Plant Pathology’ is a coordinated attempt to define interactions of host plant and pathogen at the level of physiology, chemistry, biochemistry, and/or molecular biology. This course is for students who want to study about how plants and pathogens interact each other and what physiological factors of pathogens such as extracellular enzymes or microbial toxins are involved in these processes. Therefore, background knowledge on plant pathology, plant physiology, and mycotoxicology are necessary for the students of this course.

곤충학전공(Entomology Major)

5321.5403 곤충생리학 및 실험 3-2-2
Insect Physiology & Lab.

이 과목에서는 곤충의 종은 약 1백만 종으로 다른 어떤 생물 종류의 생물보다도 다양한 종 구성을 보여주고 있다. 따라서 무척 주목할 만한 과목이다. 곤충의 위치는 척추동물에서의 인간의 위치와 잘 대비될 수 있을 것이다. 곤충의 유기성과 기생성은 우리 생활에 필수적인 임무를 수행하며, 특히 이 과목의 수강생들은 곤충학 연구를 위한 기본적인 지식을 얻게 될 것이다.

In this course, students will study general ideas on how and why plants and pathogens interact each other and what physiological factors of pathogens such as extracellular enzymes or microbial toxins are involved in these processes. Therefore, background knowledge on plant pathology, plant physiology, and mycotoxicology are necessary for the students of this course.

5321.5404 곤충생태학 및 실험 3-2-2
Insect Ecology & Lab.

이 과목에서는 곤충생태학의 주요 개념들을 배운다. 예를 들어, 생태계 개념, 곤충과 기상, 식물과 식성 곤충과의 관계, 포식자와 피식자 상호작용 및 개체군동태, 곤충생태학 전략, 곤충동태, 종내경쟁 및 종간경쟁, 나체 개념, 곤충군집, 다양성과 안정성 등 다룬다.

In this course, students will study the major concepts of insect ecology. Topics will cover ecosystem concepts, insects and climate, plant and insect herbivore relationships, interactions between prey and predator, predator-prey population dynamics, insect life history strategies, insect behavior, intra- and inter-specific competition, niche concepts, insect communities, diversity, and stability.

5321.5406 생태독성학 및 실험 3-2-2
Ecotoxicology & Lab.

유기합성물질은 농산물 증수와 인류보건 양상에 크게 기여하였으나, 농약의 연용과 납품은 인체에 대한 독성, 환경오염, 생태계 파괴, 아연독성물질에 대한 악영향, 유해물질의 탈색, 식품 및 약물 전류 등의 부작용을 야기시켰으며, 이러한 부작용은 농약의 성질 그 자체에도 문제가 있었으나 그 성질에 대해 이해 부족으로 문제는 더욱 심각하게 되었다. 또한 공장 및 자동차에서 배출되는 오염물질은 자국 환경 생태에서 심각한 영향을 미치고 있는 상황에 있다. 본 과목은 오염물질의 성격을 파악하고 아울러 이들 물질이 생물학적 및 환경적 요인에 미치는 영향을 식물 생화학적 측면에서 연구함으로써 부적절한 환경에 조정하는 것을 목표로 한다. 이 과목에서는 생명체에 대한 다양한 관찰과 검증을 통해 외부에 대한 응답이 필요하며 학부에서 식물학, 곤충학, 미생물학, 동물학, 화학, 생화학 등에 대한 수강이 요구된다.

Despite their benefits to agricultural productivity and the improvement of human health, synthetic organic pesticides have resulted in various side effects including toxicity to man and animals, environmental contamination, destruction of the ecosystem, killing of useful organisms, and residues in foods and crops. These side effects have been aggravated mostly by a lack of understanding of the properties of pesticides. In addition, pollutants from automobiles and industries have produced a serious problem on the earth's environment. In this course, students will study contaminants and pollutants and their physiological and biochemical effects on biotic and abiotic factors, thereby working to establish a system for the preservation of a healthy environment. The course requires the students’ keen interest in organisms and good background knowledge of organic substances. Pre-requisites include undergraduate courses on botany, entomology, microbiology, animal science, organic chemistry, and biochemistry.

5321.5407 곤충분자생물학 및 실험 3-2-2
Insect Molecular Biology & Lab.

본 과목에서는 분자생물학, 분자유전학 및 생명공학의 이론 및 기술들이 곤충학 연구를 위해 어떻게 활용될 수 있는지에 대해 배운다. 곤충의 전반부에는 세포학, 분자생물학 등의 기초 개념을 생물생물학적 분자생물학적 기술과 함께 소개하며 후반부에서는 분화, 생식, 곤충형질전환 등의 곤충학 연구에 시도되는 다양한 분자생물학적 접근법에 초점을 맞추게 된다.

In this course, students will study general ideas on how the principles and techniques of molecular biology, molecular genetics, and biotechnology can be applied to the study of insects. The first part of the course will cover the basic concepts of cellular and molecular biology as well as an introduction to various biotechnological and molecular techniques. The latter part will focus on various molecular ap-
proaches to entomological research on fields including systems-
tematics, ecology, evolution, and insect transgenesis.

5321.6408 곤충분류·형태학 및 실험 3-2-2
Insect Taxonomy/Morphology and Lab.

곤충과 다른 생물, 특히 식물과 곤충, 간에 화합물을 매개로 일어나는 생태학으로 곤충생태학에서는 곤충과 식물 및 곤충들간의 상호작용에 대하여 중심적으로 다룬다. 예를 들면 식물을 먹이

5321.6404 곤충생태연구방법론 3-3-0
Methodology in Insect Ecology

본 과목에서는 곤충생태 연구에 필요한 방법론을 배운다. 예를 들어, 곤충생명표 작성 및 분석방법, 해충방제 의사결정에 중요한 곤충생물조사방법, 축자료조사방법, 이량표본조사방법, 곤충개체군동태

5321.6407 곤충화학생태학 3-3-0
Insect Chemical Ecology

곤충과 다른 생물, 특히 식물과 곤충, 간에 화합물을 매개로 일어나는 생태학으로 곤충생태학에서는 곤충과 식물 및 곤충들간의 상호작용에 대하여 중심적으로 다룬다. 예를 들면 식물을 먹이

5321.6406 곤충생리활성천연물 3-3-0
Insect Bioactive Substances

식물성 식품의 변화, 스트레스 증가 및 환경오염 등으로 인하여

5321.6405 곤충생물학 3-3-0
Insect Microbiology

이 과목에서는 곤충과 미생물들의 특성에 관한 현대적인 내용을 배운다. 예를 들어, 곤충과 미생물의 분류, 동정, 생리, 생태, 유전 등에 관한 지식을 습득하고, 곤충 미생물의 산업적 이용을 위한

5321.6403 곤충발육 및 내분비론 3-3-0
Insect Development & Endocrinology

곤충의 발육과 여러 가지 생리현상들을 내분비 호르몬과 신경

Student in entomology should know the overall diversity of insect in the world which is more than 70% of total animal species. Insect taxonomy is based on the external and internal morphology of each taxa, from which we can understand the evolutionary and systematic relationship of each group.
examine how plants evolve self-defensive strategies in terms of a secondary metabolism against phytophagous insects and how those insects try to counterattack such plants in terms of toxin metabolism and the utilization of plant toxins as their own defensive chemicals and/or attractants. A similar situation will be discussed between insect preys and their natural enemies. Other interesting related topics include: the chemical communication system between individuals of the same insect species; and what kind of information is exchanged, how such information is perceived, and how that information affects the behavior and physiology of recipient insects.

5321.6408 Insect Pest Management

This course provides the theory and practice of insect pest management. For example, the concepts of integrated pest management, insect sampling methods for decision-making in IPM, sequential sampling, binomial sampling, biological control, insect sampling methods for decision-making in management. For example, the concepts of integrated pest management, insect sampling methods for decision-making in management.

5321.6409 Insect Evolutionary Physiology

The aim of this course is to overview the physiological and behavioral adaptations of insects to changing biotic or abiotic environment, within the context of a newly emerging field of evolutionary physiology. Upon completion of the course, students are expected to understand the principal concepts of evolutionary biology, some basic tools for analysing quantitative genetic data, and the importance of genetic and environmental contributions to the recurring phenotypic variations of physiological traits in insects. Students will be also guided to the recent topics and methodological developments in the field of insect evolutionary physiology, with particular emphasis on the role played by environmental factors (e.g., temperature, feeding ecology, disease, etc.) in shaping the evolution of various mechanisms that regulate biological homeostasis in insects (e.g., immunity, nutrition, water balance, thermoregulation, endocrinology, etc.).

5321.7401 Environmental and Resource Entomology

In this course, students will study the importance of insects as sources of current uses of insects as biological indicators of environmental conditions, honeybees and apicultural products, crop pollinators, natural enemies against pests, and industrial and medicinal insects will be introduced in addition to forensic entomology and insect rearing methods.

5321.7402 Seminar in Entomology 1

This course will consist of readings of recently published research articles with a focus on new trends and movements in applied entomology. In addition, the course will emphasize the improvement of students’ skills in data organization, editing, and presentation.

5321.7403 Seminar in Entomology 2

This course will consist of readings of recently published research articles with a focus on new trends and movements in applied entomology. In addition, the course will emphasize the improvement of students’ skills in data organization, editing, and presentation.

5321.7404 Medical Entomology and Lab

Diseases transmitted by arthropods including insects cause considerable public health problems of humans and animals worldwide. This course was mainly designed to convey practical knowledges on the control of disease—transmitting arthropods and disease prevention as well as the basic biological information such as taxonomy, ecology, physiology, behavior, pathogen—vector interaction, disease transmission dynamics, etc.
수출ające의 지표가 되는 수출곤충(화두사기, 조사사, 강도래, 날도래, 노란채, 박정벌레 등)은 유충 또는 유충+양충 모두가 수출생 활을 하며 각각의 수출 환경관리에 따라 적응정보를 담아진다. 특히 물속의 응온산소 또는 식물조직 등을 이용해 호흡을 하므로 독 이한 환경/생태적 특성이 있고, 수중생태계 내에서 대화, 포식 자료와의 가장 큰 영향을 하고 있다. 따라서 수계의 형태에 따른 수출곤충은 많은 특이성을 보이고, 특히 환경오염과 관련된 이 름의 적응정보가 예민하며, 수출환경오염에 대한 환경조절로 보고 중요하다. 본 과정에서는 이를 수출곤충의 전반적 응 감은 물론 각 종들의 생활사 및 환경조절생물로서의 이용방 법 등에 대해 습득한다.

The fauna of aquatic insects, such as mayflies, dragonflies, stoneflies, water bugs and water beetles is variable and de-pends on the environmental condition of each underwater ecosystem. Students in this class will understand how the aquatic insects are important in underwater environment as predators, scavengers, and decomposer of organic wastes. Students will also learn the identification and life cycle of these aquatic insects, and how to apply them as the environmental indicators.

본 과정의 주제는 곤충군집생태학, 곤충생명공학특강, 곤충군개체군유전학, 곤충군집생태학, 수서곤충학, 응용곤충학특강, 곤충생물학특강, 곤충군집생태학, 곤
대학원(Graduate School)  ··농생명공학부(Dept. of Agricultural Biotechnology)

5321.5506 식품공학특강 3-3-0

**Topics in Food Engineering**

식품공학의 선학술 발전 방향, 식품학의 연구 동향 등을 주제로 학습한다.

In this course, the latest developments in food process technologies including research trends will be discussed.

5321.5507 식품단백질 3-3-0

**Food Protein**

식품을 구성하는 주요 단백질의 구조, 화학반응, 물리화학적 특성 및 기능성, 구조-기능성의 상관, 가공, 이용에 따른 특성의 변화를 강술한다.

This course is a survey of the structures and chemical reactions of major food proteins. Topics will include physicochemical characteristics, food functionality, structure-functionality relations, and changes during processing and utilization.

5321.5509 식품물성학특강 3-3-0

**Topics in Food Rheology**

식품 레올로지의 기본원리와 기술을 이해하기 위해 식품 물리화학, 콜로이드 특성, 에멀젼 및 레올로지 기초원리와 식품성분과의 관계를 다룬다.

To better understand the fundamental principles and techniques of rheology science, students will study the basic concepts of physical chemistry of foods, colloidal properties, emulsion, and rheology related to the components of food products.

5321.6501 식품미생물대사공학 3-3-0

**Metabolic Engineering in Food Microbiology**

미생물 대사작용으로 생산되는 여러 가지 산물의 생산효율을 높이기 위하여 미생물 대사를 인위적으로 조정할 수 있는 방법에 대하여 논의한다. 미생물 생리와 분자생물학적 방법론을 다루고, 생물공학적으로 적용할 수 있는 방법을 논의한다.

In this course, methods to engineer metabolic pathways for the maximum production of important products in the food industry will be discussed. Topics will cover various approaches including microbial physiology, molecular biology, and biochemical engineering.

5321.6502 식품분자미생물학 3-3-0

**Molecular Food Microbiology**

유전공학을 식품이 생물 분야에 적용하는 데 필수적인 분자미생물학 기반 지식을 습득한다. 미생물의 유전자 발현과 조절기작의 근본 원리, 분자생물학에 쓰이는 여러 가지 technique의 기본 원리, 유전자를 cloning하고 원하는 단백질을 overexpression시키는 대 고려해야 할 기본사항 등을 식품미생물학 분야에 응용된 사례를 중심으로 소개한다.

In this course, the basic principles of molecular biology important for the application of genetic engineering to food microbiology will be covered. The regulation of gene expression in microbiology, the basics of molecular biological techniques, and concepts of foreign gene overexpression in various hosts will be discussed in relation to specific cases applied to food microbiology.

5321.6503 식품탄수화물 3-3-0

**Food Carbohydrates**

식품의 주요 식물성 탄수화물의 물리화학적 및 기능적 성질, 분석법, 가공, 저장, 이용 중의 특성 변화, 기능성 탄수화물 식품 소재의 제조 원리와 방법을 강술하고, 관련 학술논문을 조사, 평가함으로써 최근 연구 동향을 파악하도록 한다.

This course will provide students with an understanding of the physicochemical and functional properties of food carbohydrates, basic principles and methodologies of carbohydrate determination, changes during processing and utilization, and principles and methods of the preparation of functional carbohydrate ingredients.

5321.6504 식품포장학 3-3-0

**Food Packaging**

식품 포장의 기능에 대한 기본원리와 식품의 품질, 포장재료의 특성, 포장 방법에 대하여 강술한다.

In this course, students will discuss the protective functions of packaging, with a focus on factors associated with the quality of products, the nature of packaging materials, and the types of package construction.

5321.6506 식품화학특강 3-3-0

**Topics in Food Chemistry**

식품가공 중 일어나는 단백질, 지질, 탄수화물, 비타민 등 영양소의 변화반응, 기작, 식품의 영양 등 강술하고 기타 식품이나 각종 식품에서의 성분변화를 발표와 토의에 의해 학습한다.

In this course, the reactions, mechanisms, and effects of changes in proteins, lipids, carbohydrates, and vitamins that occur during food processing will be discussed. Changes in cereals, fruits, vegetables, dairy foods, meats, marine foods, beverages, and fermented foods during processing will be presented and discussed.

5321.7501 식품효소학 3-3-0

**Food Enzymes**

이 과목은 효소단백질의 생화학적 특성, 효소의 분리정제 기술, 단백질공학에 의한 특성개량 등 식품공학에 필요한 기초 및 응용에 대하여 강의한다.

This course deals with the fundamental areas of enzymology that food scientists should master. Emphasis will be placed on the nature of proteins, purification techniques of enzymes, important parameters that affect enzyme activities, and basic knowledge of enzyme kinetics, with illustrative examples of enzymes important to food science.

5321.7503 식품공학세미나 1 1-0-2

**Seminar in Food Science 1**

식품과학의 기초 번역을 공학적으로 이해하고 식품과학 전공에 대한 기초를 제공한다.

In this course, students will practice their presentation...
Food biotechnology is the application of technology to modify genes of animals, plants, and microorganisms to create new species which have desired production, marketing, or nutrition related properties. This lecture deals with the principle and application of food biotechnology, focusing on the proteins used in the modern food industries. Moreover, protein sources, purification, characterization, and large-scale purification methods will be also covered. In this lecture we also learn the techniques for the production and application of various specific proteins that are widely used in food industries, such as starch-converting industry, brewing industry, and food additive production industry.

**M1718.000700 식품고분자분석학 3-3-0**

**Food Macromolecular Analysis**

Food contains the various biomacromolecules. This course deals with the indepth principles for various approaches to structural determination of biomacromolecules in food, including electron microscopy, X-ray based analyses and NMR. The interpretation of three dimensional structure and its application to food sciences will be also discussed.

**M1718.000600 조류, 발생에서 형질전환까지 3-3-0**

**Gene and Function**

DNA-RNA-Protein으로 구성된 Central Dogma에 관련된 다양한 유전학적·분자생물학적 이벤트를 소개하고, 이를 활용한 의학 및 생명공학 취달기술 개발현황 및 향후 발전방향에 대한 식견을 제공한다.

The course is to teach the genetical and molecular biological events related to the central dogma (DNA-RNA-Protein) and provide insights for the newest medical and biotechnological findings as well as other possibilities of future growth in this area.

**5321.7504 식품과학세미나 2 1-0-2**

**Seminar in Food Science 2**

In this course, students will practice their presentation techniques and be provided with the latest information on lipids and the technology of processing edible fat on the physicochemical properties of fat and oils. The chemical analysis, and isolation of lipids in foods, with a focus discussed also.

**5321.7507 유지식품학 3-3-0**

**Topics in Functional Foods**

In this course, students will study the importance, structural analysis, and isolation of lipids in foods, with a focus on the physicochemical properties of fats and oils. The chemistry of lipids and the technology of processing edible fats and oils including refining, recovery, modification, and new biotechnology will be discussed in relation to specific cases applied to lipid industry.

**5321.7508 기능성식품학특강 3-3-0**

**Advanced Protein Food Engineering**

Advanced Food Protein Engineering

Advanced Food Protein Engineering
5321.6603 과충과 바이오모듈레이션 3-3-0
**The Insects and Biomodulation**
생체기능 조절의 이해 및 개발기술에 필수적으로 이용되는 과충의 다양한 특성을 학습하고, 질환/생리모델로서 곤충의 활용방안에 대한 다양한 식견 및 새로운 활용기술에 대한 전문지식을 교수한다.
This course is to help the students find the various characteristics and vital functions of insects as a model system that can be used to understand the basis for a physiological model of diseases. This course provides contemporary new applications and techniques utilizing insect models.

5321.6604 식품과 바이오모듈레이션 3-3-0
**Food and Biomodulation**
생체기능 조절의 이해 및 개발기술에 필수적으로 이용되는 과충의 다양한 특성을 학습하고, 질환/생리모델로서 곤충의 활용방안에 대한 다양한 식견 및 새로운 활용기술에 대한 전문지식을 교수한다.
This course is to help the students find the various characteristics and vital functions of insects as a model system that can be used to understand the basis for a physiological model of diseases. This course provides contemporary new applications and techniques utilizing insect models.

5321.6605 내분비 기능 및 시고날 3-3-0
**Endocrine Function and Signal**
본 강의는 생체기능조절에 필수적인 내분비물질 및 다양한 호르몬의 기능에 관하여 교수하며, 호르몬 작용과 연관된 다양한 세포, 조직, 작용기제의 지식을 제공한다. 또한 내분비질환 치료 및 이와 연관된 다양한 생리학적 현상에 대하여 교수하며, 간호과 동물에서 발생하는 내분비질환의 사례 및 생리학적 영향 및 치료-예방기대에 대한 지식을 제공한다.
This course is to discuss the endocrine functions and various hormone secretions essential for bioregulation and cellular signalling mechanisms involved with hormone reactions. This course also provides insights into endocrine-related disease and physiological reactions and the social and economic consequences caused by endocrine-related disease for treatment and prevention in both animals and humans.

5321.6606 바이오모듈레이션과 단백질 3-3-0
**Biomodulation and Protein**
본 강의에서는 단백질 화학에 대한 기초 지식을 익히고, 생체 내에서 단백질이 합성되어 소비되는 과정 및 효소 반응에 대하여 배운다. 먼저 아미노산 및 단백질의 물리화학적 성질 및 구조적 특성, 그리고 이들에 대한 반응을 이해하고, 뿐만 아니라 단백질의 생합성, 전달, 및 소화에 대하여, 마지막으로 단백질 상호 작용 및 그 연구 방법과 효소 반응의 기본 원리를 배운다.
This course provides a general background in protein chemistry, biogenesis, and reactions. First part deals with physicochemical and structural properties of individual amino acids as well as folded proteins. Second part covers protein biosynthesis, modification, and degradation. Last part describes methods to study protein interactions and the principle of enzyme reactions.

5321.6607 세포와 종양 3-3-0
**Cell and Cancer**
본 강의는 세포사멸, 기능회복, 전능성 및 분화, 그리고 종양에 이르는 다양한 세포학적 특성에 대하여 교수하며, 특히 최근의 임상적 가치가 커지고 있는 축적세포, 다항능-전능성세포와 종양과 관련된 생화학적 기전 및 치료기술 개발에 필요한 세포학적 기초에 대해서도 교육한다.
This course is to explain and discuss the cytological characteristics of apoptosis, regeneration, pluripotency and differentiation with emphasis on clinically important stem cell research and its association with tumor biology, mechanisms that trigger carcinogenesis and cytogenetic markers for assessing advancements in anti-cancer treatments.

5321.6608 질환중심연구 3-3-0
**Disease-based Research**
본 강의는 다학제적 융합연구 및 다양한 질환연구에 관련된 최근 연구동향 및 식견을 소개한다. 특히 각 질환별 특징적인 연구방법의 소개 및 관련된 연구분야와 침범 연구 수행의 방법에 대한 다양한 융합연구의 내용을 다각적으로 교육함으로써 치료목적으로 선택된 질환에 대한 최신 연구들략을 학습한다.
This course is to introduce recent advances in knowledge from multidisciplinary research required for enhancing recovery from diseases, with a focus on advanced research specific to targeted diseases.

5321.6609 바이오모듈레이션을 위한 세포제어학 3-3-0
**Control of Cell Function for Biomodulation**
생명 현상이 어떻게 유지되고 조절되는지 이해하기 위하여, 세포를 구성하는 생체고분자의 생리학적, 구조적 특성을 파악하고 그들의 상호작용을 통해 연구가 대단히 중요하다. 이 강좌에서는 세포 내 생체고분자들의 기본 성질을 이해하고 이들의 상호 작용을 통해 다양한 세포 기능의 제어 방법에 대하여 배운다. 또한 이들 연구를 위하여 개발된 방법의 원리를 이해하고 최신 기술을 익힌다.
To understand the robust and delicate regulation of life, it is important to study the physiological and structural properties of a living cell, as well as molecular interaction between the macromolecular components. This course outlines general properties of macromolecules in cell and describes how their molecular interactions translate into the fine control of various cell functions. Relevant methods and technological advancement will be discussed in terms of their principle and application.

5321.6610 핵자기공명 분광학 및 실습 3-2-2
**Nuclear Magnetic Resonance Spectroscopy**
핵자기공명 분광학은 생명 분자에 대한 구조 정보뿐 아니라, 생명 분자 내의 다양한 반응을 포함한 동물학 정보를 제공한다. 이 강좌에서는 핵자기공명 기본 지식과 자본자 및 고분자 구조 결정 방법, 상호 작용 및 반응 속도 분석, in vivo NMR 등 다양한 기법의 원리와 최신 동향을 익힌다.
Nuclear magnetic resonance provides not only structural...
information of biological molecules, but also dynamics information of biological reactions such as kinetic and thermodynamic constants. This course provides general principle and recent progress in various techniques of nuclear magnetic resonance spectroscopy, that include the structure determination of small and large molecules, the molecular interaction and reaction dynamics, in vivo NMR, etc.

5321.6611 생리활성물질합성론 3-3-0
Development of Natural Product Based Bioactive Substances
주요 성인병의 종류 및 그 원인을 파악하고, 이들 질병의 예방 및 치료를 위한 천연 유래 약물의, 동물(어류 포함)약물, 기능성 식품 및 화장품 개발에 필요한 지식을 핵심적으로 학습하여 관련 산업 발전에 기여하도록 한다.

In this course, the students examine the causes and types of common geriatric disease and learn about the development of natural health products, animal derivatives, functional food supplements or cosmetics for treatment and prevention, and promotion of industrial development.

5321.5601 생물모델발굴 4-4-0
Biomodel Development
본 강좌는 기초의학연구, 생명공학 기술개발 및 첨단 치료기법 개발에 필수적인 생물모델에 관한 다양한 식견을 소개한다. 특히 동물, 조류, 곤충, 유전자 및 세포를 포함한 생물 전 분야의 모델 활용 가능성을 파악하여 학습하며, 최근 중요시되고 있는 모델연구 현황에 대한 연구적지식을 소개한다.

This course is to provide various concepts relevant to developing biological models (biomodels) that are critical to basic medical science, development of biotechnology and advanced therapeutic treatments. This course will also help students learn the application of information derived from studies of biomodels that include avian, mammalian, and insect species to the disciplines of genetics and cellular biology, as well as introduce current advances and discoveries in biomodel research.

5321.5602 신생물소재 및 생활성조절 4-4-0
Neobiomaterials and Bioregulation
본 강좌에서는 새로운 필요성이 부각되고 있는 생체 유해 물질의 생활성, 분리 및 추출에 관한 다양한 식견을 소개한다. 특히 생체내 생리학적 조절을 통해 생리 환경물질 생산기술에 대한 다양한 지식을 소개하며 효과적인 생활성 조절을 위하여 개발된 기술에 대하여 교수한다.

This course is to explain the formulation and extraction of new biological derivatives and the necessity to examine emerging production technologies that ensure expected bioactivities of these derivatives. There will also be discussion of regulatory issues related to bringing such biological derivatives to the marketplace.

5321.5604 실험디자인과 논문작성 2-2-0
Experimental Design and Scientific Writing
논문작성에 필수적인 실험디자인, 연구방법 데이터처리 및 논문 기술방법에 필수적으로 요구되는 생활을 소개한다. 또한 생명공학 분야에서 필수적으로 요구되는 과학윤리에 대하여 학습함으로서 연구윤리 및 학문수준의 향상을 도모한다.

This course is designed to give the students a chance to learn the experimental design, method of research, justification of data and techniques essential to thesis writing and learn the ethics involved in the research of biotechnology to improve the integrity of academic research papers.

5321.5605 학위논문세미나 1-0-2
Thesis Seminar
본 강좌는 바이오모듈레이션 전공 대학원생이 현재 수행하고 있는 연구 및 이를 기초로 한 학위논문 다이렉트 및 내용에 대하여 세미나를 진행한다. 또한 학위논문 작성 및 내용에 대한 다각적인 토론을 통하여 학위논문의 질적 향상을 위한 학문의 구성원으로서 상호간 이해를 증진하도록 한다.

The purpose of this course is to both unify a broader context of knowledge about the field of biomodulation gained throughout the graduate years, and provide an effective way to write thesis/dissertation. As a seminar, this class requires regular preparation and participation by all students. The instructor will serve as a convener and facilitator rather than lecturer. The course necessities that students assume a more active, responsible role in learning than has been possible in previous classes.

5321.7601 바이오과학과 산업 2-2-0
Bioscience and Industry
의료기술개발, 제약, 및 생명공학 분야의 기업운영을 초청하여 최근의 연구개발 현황 및 산업 동향 등에 대한 정보를 소개하며, 극적적으로 산학협력을 위한 기반프레임을 조성한다. 특히 최근 생명공학산업분야의 발전방향을 학생들에게 소개함으로써 학문의 응용을 배울 수 있게 한다.

This course is designed to give the students a chance to examine the current practices and recent advances in the biological, medical, pharmaceutical and engineering fields, and provide various aspects of these industries through guest lecturers currently working or employed in the related area. The purpose of this course is to promote basic infrastructure for academic and industrial cooperation for the long term.

★M1718.000200 바이오모듈레이션 특강 1-1-0
Topics in Biomodulation
바이오모듈레이션 특강은 바이오모듈레이션 관련 모든 연구 분야를 중심으로 최신 연구결과 및 동향을 강의하고 토의하여, 대학원생에게 연구를 논리적으로 설계하고 이끌어가는 능력을 취득하게 한다. 본 강의에서는 국내외 석학교수를 초청하여 의학생물학, 동물생명공학, 생명과학 및 세포생명학, 마우스 피노타입, 의생명공학 모델링 등 다양한 기초 의과학 및 동물실험에 대한 최근 동향과 식견을 제공하고, 이를 유기적으로 연계하는 중개 학문을 이해하게 된다.

Topics in Biomodulation provides recent research progress and current topics in biomodulation, and trains graduate students to design their own research and achieve their goals. International and domestic distinguished scholars are invited to open this course. The topics include but are not limited to medical reproductive biology, animal biotechnology, biochemistry and cell biology, mouse phenotyping, biomedical modeling. Trends in diverse medical biology and animal
Advanced Mucosal Immunology

The mucosal surface is the largest route through which pathogens enter the human and animal body. To control the outbreak of mucosal infectious diseases, we must use our knowledge of the mucosal immune system to create strategy including development of vaccines that elicit protective mucosal and systemic immunity. This course is to discuss the development of mucosal tissues (intestinal system, airway and ocular surfaces, and so on), the cellular constituents of the mucosal immune system and their function in mucosal homeostasis. Commensal microbiota that forms the symbiotic relationship of the hundreds of microbial species with the host requires a tuned response that prevents host damage, e.g. inflammation, while tolerating the presence of the potentially beneficial microbes. This again must balance with protective immune responses at mucosal region against various pathogens. The course is to understand host-microbe relationship and, therefore, to provide a strategy (1) to overcome problem with inflammatory diseases and infection by microbial pathogens and (2) to develop new therapeutic opportunities.

동물도 사람과 마찬가지로 대부분의 병원균이 점막을 통해 감염된다. 이런 점막 감염 질병을 예제하기 위해서는 점막과 전신 면역체계의 방어능력을 강화시키는 백신 개발 전략에 대해 알아야 한다. 본 강의의 점막기관(장관계, 기도[airway], 안구 표면 등)의 발달, 세포 구성, 점막 항상성 기능 및 장내 미생물과의 관계에 대해 교수한다. 또한 장내 미생물과 호스트의 공생관계(유익균 정착 및 과도한 염증 억제 등)와 병원균에 대한 면역반응 유도 기전에 대해 지식을 제공하고자 한다. 나아가 숙주-미생물 관계에 대한 이해를 바탕으로 (1) 염증성 질병 및 병원균 감염 극복; (2) 새로운 치료 방법 개발에 대한 지식을 제공한다.
대학원(Graduate School) :: 협동과정 농업생물공학전공(Program in Agricultural Biotechnology)

531.511 농업생물공학세미나 1-0-2

Seminars on Agricultural Biotechnology

본 교과목은 학생들의 발표능력을 함양하기 위하여 분야관련 최근 논문이나 자신의 학위논문 결과를 발표하도록 한다. 본 교과목을 수강한 학생들은 연구결과 뿐 아니라 토론까지를 포함하는 발표 전반적인 능력을 함양할 것으로 기대된다.

In this course, each student will present a recent article or own thesis work focusing the acquisition of the knowledge on the area of agricultural biotechnology. The students are expected to acquire skills for the comprehensive presentation of research activities.

531.512 농업생물공학콜로퀴엄 1-0-2

Colloquium on Agricultural Biotechnology

본 교과목은 학생들의 발표능력을 함양하기 위하여 분야관련 최근 논문이나 자신의 학위논문 결과를 발표하도록 한다. 본 교과목을 수강한 학생들은 연구결과 뿐 아니라 토론까지를 포함하는 발표 전반적인 능력을 함양할 것으로 기대된다.

This course will be held weekly basis for graduate students (M. Sc. and Ph. D. candidates) and discuss special topics concerning the area of agricultural biotechnology. The experts could be invited as a guest speaker, who will introduce the latest trends and interest in the academic, scientific and/or industrial fields of biotechnology.

531.502 단백질공학 3-3-0

Protein Engineering

단백질의 구조를 이해하고 환경에 의한 변화나 생산 공정의 과학적 부분을 이해하여 단백질 생산 및 효율을 극대화하는 방법 등을 강의한다.

The main focus of this course is on protein structures. Students will study the basic skills for engineering protein sequences to improve protein efficiency.

531.513 농업분자시스템생물학 3-3-0

Agricultural Molecular Systems Biology

유전체 분석이 이루어진 주요 농업생물의 유전자 조절 기작과 구성요소간의 상호작용을 분자시스템적 관점에서 이해하도록 한다. 유전체의 구성을 이해하고 기능유전체학(functional genomics), 후생물학(epigenomics), 그리고 RNA유전체학(RNA genomics) 수준에서의 유전체 분석 및 조절 시스템을 공부한다. 또한 이들 학습을 통해 사용할 수 있는 이론적 배경을 공부하며, 농업생물의 주요 생명현상에 적용하여 전체적인 유전자의 조절 원리와 상호 작용에 대한 이해를 높이고자 한다.

This course helps students to understand the gene regulatory mechanisms in crops and livestock at the molecular system level. Genome structure will be studied in conjunction with diverse analytical approaches including functional genomics, epigenomics, and RNA genomics. Methods for developing computational models based on these informations will be studied. By applying the knowledge to several intriguing biological phenomena in agricultural species, students are guided to understand the overall gene regulatory systems and networks.

531.514 식품유전체학 3-3-0

Genomics for Food

유전체 연구의 발전을 식품 관련 연구에 활용할 수 있는 방법 위한 방법에 대한 소개를 한다. 특히, 영양소가 인체 유전체 수준에 미치는 영향, 식품과 관련한 질병과 관련되는 유전자, 이를 활용한 치료재료 등을 통해 관련 분야 이해를 높인다.

This course deals with genomics related with food system. Related topics such as effects of nutritional components on regulation of human gene expression and genes causing various diseases in human will be discussed. Methods to apply the knowledge to develop efficient ways to prevent various diseases will be discussed. Genomics of microorganisms that can influence human health will also be discussed.

531.515 진핵미생물유전체학 3-3-0

Genomics of Eukaryotic Microorganism

최근 급속히 발전하고 있는 유전체 연구는 생명학에서 중요한 한 부분으로 인식되고 있다. 그러나 진핵미생물은 인류생활에 매우 중요한 역할을 하고 있으며, 이를 연구에 대한 전반적인 내용을 다루는 강의는 매우 미진한 편이다. 본 과목에서는 진핵미생물의 유전체 연구에 대한 소개와 농업을 포함한 산업적 활용에 대한 전반적인 내용을 다룬다. 특히 기능유전체 및 차세대 염기서열 분석법을 이용한 비교유전체 연구에 대한 연구방법론 및 최근 연구결과를 발표 및 토론을 통하여 심화한다.

Recently tremendous progress has been made in the area of genomic research in eukaryotes. This class will cover the general introduction of genomics and its application on industry including agriculture. In addition, recent achievements in functional and comparative genomics will also be discussed.

학점구조는 "학점수-주당 강의시간-주당 실습시간"을 표시한다. 한 학기는 15주로 구성됨. (The first number means "credits"; the second number means "lecture hours per week"; and the final number means "laboratory hours per week. 15 weeks make one semester.)
539.501 Agricultural and Forest Meteorology

Agricultural and Forest Meteorology

The course focuses on understanding of the interactions between natural ecosystems and various processes in meteorology, agronomy, and forestry. Lectures on basic science and applied research deal with practical issues in vegetation, soil science, ecology, and biogeochemistry associated with changes in weather and environment. Major topics include the exchange of energy, matter and information between agroforest ecosystems and the atmosphere, micro-meteorological measurements (radiation, canopy turbulence, evapotranspiration, flux and concentration), biometeorology (crop production, light & water use efficiency, phenology, and disturbance), aerobiology (pollen, spore, dispersion of insects and pesticides), forest fire meteorology, interactions between vegetation and changes in weather and environment.

539.503 Biometeorological Measurement

Biometeorological Measurement

The course provides theoretical consideration and practices in the laboratory and field settings on experimental design, principles and calibrations in instrumentation, operation and maintenance, data processing, and quality assurance and control in the context of meteorological/climatological, ecological, biogeochemical perspectives.

539.505 Experimental Design and Scientific Writing

Experimental Design and Scientific Writing

The course provides students with essential skills required for the preparation of science proposals such as logical experimental design, research methodology, and scientific writing. Students will also learn the ethics related to the practice of science and research in the pursuit of enhanced learning.
The course provides the lectures on the kinds of potential disease and the environmental conditions for their outbreak due to damages by veterinary sources, blight, and harmful insects. Lessons are learned by examining the case studies in the past to project future possibility of such outbreak and risks. Students learn the related basic and applied sciences such as veterinary science, pathology, environmental engineering and information technology to effectively cope with such diseases and the consequent damages.

539.707A
Seminar in Agricultural and Forest Meteorology 2

The course aims to enhance students’ ability to identify problems, to establish hypothesis, to design appropriate experiment, to select proper methodology, to interpret results logically, to draw right conclusion, and to present and effectively communicate the highlights by preparing reports related to the topics in agricultural and forest meteorology, practicing presentation, and experiencing discussion in various settings.

539.611
Internship 1 in Agricultural and Forest Meteorology

The minimum 80 hours of internship is required for the fulfillment of master’s program to obtain practical experience and in-depth knowledge under domestic and/or international organizations associated with agricultural and forest meteorology.

539.701A
Responsibility, Justice and Sustainability Science

539.607A
Seminar in Agricultural and Forest Meteorology 1

The course encourages students to shape the holistic paradigm with complexity, uncertainty, and managing for sustainability. The “Ecosystem Approach” is introduced to deal with the topics in agricultural and forest meteorology, practicing presentation, and experiencing discussion in various settings.

539.703A
Disease and Insect Pests Management in Agricultural and Forest Ecosystems

Students are challenged to frame and describe the fundamental framework in ecological-societal systems. A new paradigm, the “Ecosystem Approach” is introduced to deal with complexity, uncertainty, and managing for sustainability. The class encourages students to shape the holistic paradigm shift away from Newtonian into a complexity mode, thereby learning the bridging of science and values; the challenge of governance, management and monitoring in complex systems; and the role of cultural diversity toward global sustainability.

The course provides the lectures on the kinds of potential disease and the environmental conditions for their outbreak due to damages by veterinary sources, blight, and harmful insects. Lessons are learned by examining the case studies in the past to project future possibility of such outbreak and risks. Students learn the related basic and applied sciences such as veterinary science, pathology, environmental engineering and information technology to effectively cope with such diseases and the consequent damages.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
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<tbody>
<tr>
<td>539.803</td>
<td>Dissertation Research</td>
<td>3-3-0</td>
<td>This is an independent study to prepare creative and quality thesis in agricultural and forest meteorology by selecting pertinent topics under the supervision of the individual’s thesis advisor. Student meets on a regular basis with his/her thesis advisor to share the results, synopsis, and implications of the related literature review to make progress in thesis preparation.</td>
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<tr>
<td>539.811</td>
<td>Internship 2 in Agricultural and Forest Meteorology</td>
<td>3-0-8</td>
<td>The minimum 120 hours of internship is required for the fulfillment of doctoral program to obtain practical experience and in-depth knowledge under domestic and/or international organizations associated with agricultural and forest meteorology.</td>
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</tbody>
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대학원(Graduate School)  ∴ 협동과정 농생명유전체학전공(Program in Agricultural Genomics)

학점구조는 "학점수-주당 강의시간-주당 실습시간"을 표시한다. 한 학기는 15주로 구성됨. (The first number means "credits"; the second number means "lecture hours" per week; and the final number means "laboratory hours" per week. 15 weeks make one semester.)

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<tr>
<th>541.501</th>
<th>농생명유전체학세미나 1-0-2</th>
<th>541.502</th>
<th>농생명유전체학 콜로퀴엄 1-0-2</th>
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<tbody>
<tr>
<td><strong>Seminars on Agricultural Genomics</strong></td>
<td><strong>Colloquium on Agricultural Genomics</strong></td>
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학생들의 발표능력을 향상하기 위하여문어 관련 최근논문이나 자신의 학위논문결과를 발표하도록 한다. 본 교과목을 수강한 학생들은 연구결과 뿐 아니라 토론까지를 포함하는 발표 전반적인 능력을 향상할 것으로 기대된다.

In this course, each student will present a recent article or own thesis work focusing the acquisition of the knowledge on the area of agricultural biotechnology. The students are expected to acquire skills for the comprehensive presentation of research activities.

본 교과목은 학생들의 논문 분석 능력을 향상하기 위하여 관련 최근논문을 분석하고 발표하도록 한다. 본 교과목을 수강한 학생들은 연구결과 뿐 아니라 논문을 분석하여 발표하는 전반적인 능력이 향상할 것으로 기대된다.

This course will be held weekly basis for graduate students (M. Sc. and Ph. D. candidates) and discuss special topics concerning the area of agricultural biotechnology. The experts could be invited as a guest speaker, who will introduce the latest trends and interest in the academic, scientific and/or industrial fields of biotechnology.
This course will concentrate on history of Modern and Contemporary Korean art. The social and political changes will be closely examined, and the influences of Japanese and European art will be analyzed in order to understand the process of foreign cultures’ assimilation and transformation within Korean art. Class discussion and studio will help students to understand and establish Korea’s Contemporary art’s identity, and its future directions.

**600.703** 아시아현대미술작품분석연구  3-3-0

**Studies in Contemporary Asian Art**

This course examines the contemporary Asian art of China, Japan, India, and Southeast Asia. Artistic production in these countries in the 20th century and the transformation of the social function of art as an influence of modernism will be explored. The course discuss new social and political ideologies, and investigate the institutional history of art schools, exhibitions, and art markets.
tional aesthetics and the historical milieu in which selected works were produced. The first half of the course will be an overview of the selected topic, and the second half will mostly focus on individual presentations by students of a topic of their interest.

Project & Presentation Workshop

This course is a subject that can be completed in one semester and it is to develop for the project and presentation through practicals. Students study to classify their work into concept, material and condition and learn to show their project and procedure, method and medium for presentation.
동양화전공(Oriental Painting Major)
601.617 일본미술사연구 3-3-0

Studies in History of Japanese Art

일본 미술과 관련된 주제를 학기별로 설정하여 집중적으로 분석한다. 전반부는 강의 형식으로 진행하고 후반부는 학생들이 주제를 선정하여 발표한다. 전반부의 주제별 분석 수업에서는, 일본 미술사의 대표적인 작품들이 제작된 전통 조형원리와 시대적 문화적 배경을 알아본다. 이 기간 동안 학생들은 자신이 발표할 주제 및 각 작품을 선정하여 자료를 수집한다. 후반부의 주제 발표가 끝나면 보고서를 제출한다.

Selected topics related to Japanese art are examined in this course. The course will help students explore the traditional aesthetics and the historical milieu in which the selected works were produced. The first half of the course will be an overview of the selected topic, and the second half will mostly focus on individual presentations by students of a topic of their interest.

601.619 중국미술사특강 3-3-0

Topics on History of Chinese Art

중국미술과 관련된 주제를 학기별로 설정하여 집중적으로 분석한다. 전반부는 강의 형식으로 진행하고 후반부는 학생들이 주제를 선정하여 발표한다. 전반부의 주제별 분석 수업에서는, 중국 미술사의 대표적인 작품들이 제작된 전통 조형원리와 시대적 문화적 배경을 알아본다. 이 기간 동안 학생들은 자신이 발표할 주제 및 각 작품을 선정하여 자료를 수집한다. 후반부의 주제 발표가 끝나면 보고서를 제출한다.

Selected topics related to Chinese art will be examined in this course. The course will help students explore the traditional aesthetics and the historical milieu in which the selected works were produced. The first half of the course will be an overview of the selected topic, and the second half will mostly focus on individual presentations by students of a topic of their interest.

6101.502 전통화화기법의 활용 3-2-2

Application of Traditional Painting Technique

동양의 전통적 화화기법들이 현대의 다원적 시각문화의 구조 속에서 어떻게 활용되어질 수 있는 방안을 모색한다. 전통적 인 시각표현형식의 기술적인 여러 측면에 대한 연구와 함께 전통화화기법이 설치공간, 영상매체, 출판매체 등 현대의 다양한 매체들에 광범위하게 적용되어질 수 있도록 실습한다. 규정한국학 연구원의 소장품을 모사하는 기회를 갖는다.

Students in this course will investigate various methods for bringing traditional techniques of painting into contemporary expression. They will experiment with contemporary media such as installations, video, and digital processes. Students will be encouraged to reproduce the masterpieces of Kyujanggak Institute for Korean Studies.

6101.503 창작서예와 전각 3-2-2

Creative Calligraphy and Seal Carving

전통적 서체의 운필과 전각기법이 현대미술의 조형요소로서 적극적으로 활용되어질 수 있도록 하는 데 본 과목과정의 목적이 있다. 이를 위하여 운필과 각법 수련을 심화시키고 그 조형원리들을 제독하도록 하며 현대미술에서의 문자의 의미와 효용성을, 그 활용방안 등에 대하여 다방면으로 연구하도록 한다. 아울러 현대문인화에서 세예와 전각기법이 조형요계 활용되어질 수 있는 방안도 모색하도록 한다.

The purpose of this course is to encourage the students to apply the aesthetic and technical elements of traditional calligraphy and seal carving into their own creative work. Through intensive practice students are expected to learn and understand the essence of the literati tradition.

6101.529A 조형론연구 1 3-3-0

Seminar in Theory of Painting Art 1

한국, 중국, 일본을 중심으로 하여 동양 삼국에서 전개되었던 전통조형미술의 다양한 양상을 살펴보며, 이를 가능하게 한 역사, 문화적 배경, 전통적 사유방식, 철학적 배경 등과 연관된 조형적 사유방식과 그 조형원리 등을 연구한다. 이와 관련하여 예술적 배경을 해석하는데 필요한 다양한 방법론과 이론적 관점들, 조형이론, 분야별 조형론의 도상학적 의미 등을 연구하도록 한다. 구제적으론 보편적 조형론의 맥락 속에서 전통 조형론의 정체성을 파악하고 그 방향성으로 추구하는 조형적 이론을 가르치게 되는 실천적 이론 연구를 가르친다.

This course compares East Asian art of the past in terms of technical and theoretical aesthetic language. Students will explore the development of traditional painting in Korea, China and Japan, investigating the connection between formative historical, cultural, traditional, and philosophical contexts and principles. The use of materials and techniques as well as symbolism will be studied in depth. Students are encouraged to grasp the identity and essence of the theory of traditional painting within common painting theory with the aim of leading students to connect this development to their own studio work.

6101.530 조형론연구 2 3-3-0

Seminar in Theory of Painting Art 2

한국, 중국, 일본을 중심으로 하여 동양 삼국에서 전개되었던 전통조형미술의 다양한 양상을 살펴보며, 이를 가능하게 한 역사적, 문화적 배경, 전통적 사유방식, 철학적 배경 등과 연관된 조형적 사유방식과 그 조형원리 등을 연구한다. 이와 관련하여 예술적 배경을 해석하는데 필요한 다양한 방법론과 이론적 관점들, 조형이론, 분야별 조형론의 도상학적 의미 등을 연구하도록 한다. 구제적으론 보편적 조형론의 맥락 속에서 전통 조형론의 정체성을 파악하고 그 방향성으로 추구하는 조형적 이론을 가르치게 되는 실천적 이론 연구를 가르친다.

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6101.531A  

Studies in Mural Painting

The course is designed to introduce students to the basic skills of restoring murals. Students will be asked to research formative traditional art, techniques of traditional paper, brush and ink, current issues in contemporary art, and experiment with various media to enrich their subjects and means of expression.

6101.532A  

Space and Painting

This course focuses on the organic and mutual relationship between painting and architectural space. The space inside and outside an architectural structure will be understood as an aesthetic expression of human lifestyle. Large-scale projects are possible in this class, and blueprint production, modeling, and computer simulation practiced to systematically plan pictorial space. Problems concerning open and closed space will be considered from an ecological point of view.

6101.534A  

Practice in Art Conservation

This course will study the method of restoration and conservation of art works. The course will be conducted as studio project where each student is expected to select a topic and present the result in written assignments. The course will also help students to understand the traditional medium and apply in their own work.

6101.601  

Graduate Studio Seminar 1-1

The purpose of this course is to analyze, examine, and develop the themes and forms of expression in student’s works-in-progress through class discussion. Students will be asked to research formative traditional art, techniques of traditional paper, brush and ink, current issues in contemporary art, and experiment with various media to enrich their subjects and means of expression.

6101.602  

Graduate Studio Seminar 1-2

The purpose of this course is to analyze, examine, and develop the themes and forms of expression in student’s works-in-progress through class discussion. Students will be asked to research formative traditional art, techniques of traditional paper, brush and ink, current issues in contemporary art, and experiment with various media to enrich their subjects and means of expression.

6101.603  

Graduate Studio Seminar 1-3

This course enables the students to form a close connection between art theory and their work by examining their work objectively through systematic and logical analysis. The aim of this process is for students to deepen their thinking and expand the expressiveness of their work. Studio work will be carried on in parallel with research on theory, technical training, and the use of diverse media to develop the creativity of students.

6101.604  

Graduate Studio Seminar 1-4

This course enables the students to form a close connection between art theory and their work by examining their work objectively through systematic and logical analysis. The aim of this process is for students to deepen their thinking and expand the expressiveness of their work. Studio work will be carried on in parallel with research on theory, technical training, and the use of diverse media to develop the creativity of students.
The purpose of this course is to deepen and develop the students’ thinking of the artist and expand their expression. This course enables students to analyze theory while working on their own works-in-progress. Theoretical research and technical aspects are emphasized. This course is designed to develop creative application of traditional painting materials and methods. The focus is on mural techniques, paper making, and other traditional techniques fused with the latest and popular media such as photography, video art, computer graphics, 3-D modeling, etc., to expand the possibilities of creative expression in the work of students. This course stays within the limits of fine art, and differs from Application of Traditional Painting Techniques.

- **6101.705**  
  統合メディア研究 3-2-2  
  Studies in Collective Media

This course examines the methods of connoisseurship of East Asian art. The materials and techniques of art works will be closely examined through scientific and historical study. Students will work on an individual or group project and accumulate data to develop criteria for connoisseurship, and applied in the restoration and conservation of art works.

- **6101.617**  
 작품감정론 2 3-3-0  
  Studies in Connoisseurship 2

This course examines the methods of connoisseurship of East Asian art. The materials and techniques of art works will be closely examined through scientific and historical study. Students will work on an individual or group project and accumulate data to develop criteria for connoisseurship, and applied in the restoration and conservation of art works.

- **6101.702A**  
  한국미술비평세미나 3-3-0  
  Seminar in Critical Theory of Korean Art

This course explores the history of Korean art from the prehistoric era to the present. Students are encouraged to an intense subject-based study of the history and style of each period. The course will help students to define the historical continuity between past and present, East and West, and lead students to investigate traditional Korean aesthetics for possibilities for their own studio work.

- **6101.705**  
  통합매체연구 3-2-2  
  Studies in Collective Media

This course enables students to analyze theory while working on their own works-in-progress. Theoretical research and technical aspects are emphasized. This course is designed to develop creative application of traditional painting materials and methods. The focus is on mural techniques, paper making, and other traditional techniques fused with the latest and popular media such as photography, video art, computer graphics, 3-D modeling, etc., to expand the possibilities of creative expression in the work of students. This course stays within the limits of fine art, and differs from Application of Traditional Painting Techniques.

- **6101.617**  
  작품감정론 2 3-3-0  
  Studies in Connoisseurship 2

This course examines the methods of connoisseurship of East Asian art. The materials and techniques of art works will be closely examined through scientific and historical study. Students will work on an individual or group project and accumulate data to develop criteria for connoisseurship, and applied in the restoration and conservation of art works.

- **6101.702A**  
  한국미술비평세미나 3-3-0  
  Seminar in Critical Theory of Korean Art

This course explores the history of Korean art from the prehistoric era to the present. Students are encouraged to an intense subject-based study of the history and style of each period. The course will help students to define the historical continuity between past and present, East and West, and lead students to investigate traditional Korean aesthetics for possibilities for their own studio work.
6102.603 작품발표 3-2-2

Presentation

작가에게 있어 작품을 기획, 제작하고, 일정한 규모를 갖추는 과정에 대한 설명을 할 수는 없으나, 전시의 방향 설정, 관객조사, 발표장소 선정, 작품선별 및 설치(디스플레이), 홍보, 전시관리 혹은 안내문 제작, 모니터링, 결과분석 등의 실질적인 내용을 포함한다.

The manner in which artworks are presented currently is more important than ever. This course focuses on developing presentation skills. The direction and theme of exhibitions, analysis of the viewers, selection of artworks and sites, display of art, public relations, preparing a catalogue, and monitoring the viewer responses are examined through case studies.

602.5135 작품연구스튜디오 2-1 3-2-2

Graduate Studio Seminar 2-1

교수와 학생이 작업에 관하여 보다 전문적이고 밀접한 대화가 가능한 반담 수업으로 작업이나 기타 여러 사안에 관하여 학기 동안 전임 교수와 수업을 진행한다. 이 수업을 통해서 학생은 학기 동안과 학기初期에 수업을 진행하게 된다. 이 수업을 통해서 학생들은 학과 대화와 대화하면서 문제점을 해결할 수 있게 된다. 그리고 작업 이외의 개인적 문제나 의문점, 학술적 문제 등을 교수와 상의하여 발전적인 해결점을 찾을 수 있다.

This course provides students with an opportunity to have professional and in-depth dialogue with their professors about their work to find solutions to their questions, and/or address difficulties concerning their work, academics, or personal issues.

602.613작품연구 3-3-0

Studies in Graduate Thesis

논문의 형식연구와 창작과정을 객관적으로 검증하여 견실한 학위논문을 구성에 이해한다. 작품의 이미지와 개념, 조형 및 형식과 표현결과를 개념화함으로써 창작의 학술적 근거를 마련한다.

In this course individual projects are undertaken with the consultation and guidance of the instructor. It is aimed at students working towards completing their degree requirements.

602.803대학원논문연구 3-3-0

Reading and Research

학위취득과 밀접한 대화가 가능한 면담 수업으로 학습과 학술의 발전적 기회를 마련한다. 학생의 취득과 밀접한 대화가 가능한 면담 수업으로 학습과 학문의 발전적 기회를 마련한다.

Students will conduct research and write their theory under the guidance of their instructor.

6102.512B 서양화전공세미나 3-2-2

Major Seminar in Painting

석사학위과정을 위한 개인별 설계 세미나수업으로서 평판학회의 기준에 따라 내용과 학시의 재문서를 다양한 과목에서 검증한다. 소재와 주제, 방향성과 주요, 학문과 기법 등의 재문서를 다자원으로 분석하며 학위의 학문과 학문의 발전적 기회를 마련한다. 이 수업은 학생의 취득과 밀접한 대화가 가능한 면담 수업으로 학습과 학문의 발전적 기회를 마련한다.

This is an individual project for students in the Master’s program. The seminar stresses the analysis of materials and themes, ideas and intentions, as well as styles and techniques as means for investigating the content and style of fundamental concepts in two-dimensional art forms.

6102.5136 작품연구스튜디오 2-2 3-2-2

Graduate Studio Seminar 2-2

교수와 학생이 작업에 관하여 보다 전문적이고 밀접한 대화가 가능한 반담 수업으로 작업이나 기타 여러 사안에 관하여 학기 동안 전임 교수와 수업을 진행한다. 이 수업을 통해서 학생은 학기 동안과 학기初期에 수업을 진행하게 된다. 이 수업을 통해서 학생들은 학과 대화와 대화하면서 문제점을 해결할 수 있게 된다. 그리고 작업 이외의 개인적 문제나 의문점, 학술적 문제 등을 교수와 상의하여 발전적인 해결점을 찾을 수 있다.

This course provides students with an opportunity to have professional and in-depth dialogue with their professors about their work to find solutions to their questions, and/or address difficulties concerning their work, academics, or personal issues.

6102.5137 작품연구스튜디오 2-3 3-2-2

Graduate Studio Seminar 2-3

교수와 학생이 작업에 관하여 보다 전문적이고 밀접한 대화가 가능한 반담 수업으로 작업이나 기타 여러 사안에 관하여 학기 동안 전임 교수와 수업을 진행한다. 이 수업을 통해서 학생은 학기 동안과 학기初期에 수업을 진행하게 된다. 이 수업을 통해서 학생들은 학과 대화와 대화하면서 문제점을 해결할 수 있게 된다. 그리고 작업 이외의 개인적 문제나 의문점, 학술적 문제 등을 교수와 상의하여 발전적인 해결점을 찾을 수 있다.

This course provides students with an opportunity to have professional and in-depth dialogue with their professors about their work to find solutions to their questions, and/or address difficulties concerning their work, academics, or personal issues.

6102.5138 작품연구스튜디오 2-4 3-2-2

Graduate Studio Seminar 2-4

교수와 학생이 작업에 관하여 보다 전문적이고 밀접한 대화가 가능한 반담 수업으로 작업이나 기타 여러 사안에 관하여 학기 동안 전임 교수와 수업을 진행한다. 이 수업을 통해서 학생은 학기 동안과 학기初期에 수업을 진행하게 된다. 이 수업을 통해서 학생들은 학과 대화와 대화하면서 문제점을 해결할 수 있게 된다. 그리고 작업 이외의 개인적 문제나 의문점, 학술적 문제 등을 교수와 상의하여 발전적인 해결점을 찾을 수 있다.

This course provides students with an opportunity to have professional and in-depth dialogue with their professors about their work to find solutions to their questions, and/or address difficulties concerning their work, academics, or personal issues.
6102.5139 작용연구스튜디오 2-5 3-2-2

Graduate Studio Seminar 2-5

교수와 학생이 작업에 관하여 보다 전문적이고 밀접한 대화가 가능한 면담 수업으로 작업이나 기타 여러 사안에 관하여 한 학기 동안 전임 교수와 수업을 진행한다. 이 수업은 통해서 작품을 진 행하는데 있어 여러 방법으로 교수와 대화하면서 문제점이나 애로점을 해결할 수 있다. 그리고 작업 이외의 개인적 문제나 의문점, 학술적 문제 등을 교수와 상의하여 발전적인 해결점을 찾을 수 있다.

이 프로그램은 수업이 학습자들을 교수와 대화를 통해 학습하는 전반적 학습중심 수업으로 설계되며, 학생들의 학문적 성장과 협동적 학습을 통한 학문적 성장을 목표로 한다.

6102.5140 작용연구스튜디오 2-6 3-2-2

Graduate Studio Seminar 2-6

교수와 학생이 작업에 관하여 보다 전문적이고 밀접한 대화가 가능한 면담 수업으로 작업이나 기타 여러 사안에 관하여 한 학기 동안 전임 교수와 수업을 진행한다. 이 수업은 통해서 작품을 진행하는데 있어 여러 방법으로 교수와 대화하면서 문제점이나 애로점을 해결할 수 있다. 그리고 작업 이외의 개인적 문제나 의문점, 학술적 문제 등을 교수와 상의하여 발전적인 해결점을 찾을 수 있다.

이 프로그램은 수업이 학습자들을 교수와 대화를 통해 학습하는 전반적 학습중심 수업으로 설계되며, 학생들의 학문적 성장과 협동적 학습을 통한 학문적 성장을 목표로 한다.

6102.5141 근현대한국미술의 전쟁 3-3-0

Issues on Modern and Contemporary Korean Art

본 과목에서는 우리나라의 서양미술이 우리나라 미술가들에 의해 도입된 시기부터 최근까지 한국 현대미술의 흐름과 그 전개 양상을 각 시대 국내의 정치적 상황과 외국의 미술 경향과 연관시키며 분석한다. 한국의 근현대 미술은 일본에 의한 서양미술의 영향을 포함한 현대미술의 흐름과 함께 전래한 전통의 영향을 통한 형식적 특성과 특유한 문화적 특성, 새로운 매체와 기법의 발전을 통해 현대의 미술관점을 도출하고 있다.

이 프로그램은 수업이 학습자들을 교수와 대화를 통해 학습하는 전반적 학습중심 수업으로 설계되며, 학생들의 학문적 성장과 협동적 학습을 통한 학문적 성장을 목표로 한다.

6102.5143 연구작품세미나 2-2 3-2-2

Seminar in Advanced Project

심층과 세미나를 통하여 실험한 작품을 제작한다. 토론과 평가를 통해 완성된 작품의 주제와 기법, 개인의 작품론 등을 점검하여 나아가며 작업과정의 논리적인 배경을 형성시킨다. 또한 개인이 제시한 개별적 관심(issuе)과 실제 작업의 문제에 대해 폭넓고 심도 있는 비판적 강점을 시도한다. 이를 통해 독창적이고 분명한 관점의 형성은 물론 계통화의 기반을 제공한다. 작품에서 세미나가 이야기하는 미술어론과 미적 개념, 그리고 실제의 다양한 작업적 측면을 함께 연구하여 이론과 실제의 균형있는 발전을 도모한다.

Students will produce paintings and through discussions and critiques reflect on the themes and techniques of their work. They will articulate their thoughts on art and develop a logical framework for the process of their work. This seminar provides students with a channel to critique and review the wider contexts of the processes and critique of their own work. The focus of the seminar is to develop the writing skills required for student to articulate a statement and review the theoretical background that supports their statement. Aesthetic and art theory and critical discourse will be discussed in class.

6102.5144 판화전공세미나 3-3-0

Seminar in Printmaking

동판화, 석판화, 목판화, 폴란화, Collagraphy 등 다양한 기법을 개별적으로 소개하고, 구체적인 실습·연구의 과정을 가정으로 하는 독창적 기법을 모색한다. 그리고 주관적 발상, 제작, 개념의 개념과 등 다양한 작업 및 토론과정에서 관찰할 복합적인 개념을 점검함으로써 발전적 작품제작의 기초를 마련한다. 또한 전통과 현대의 사회적, 기법적 특성을 나름대로 소화하여 실질적인 해결점을 가진 작품을 제작한다. 토론과 세미나를 통해 관찰의 개념을 발전시키며 논리적으로 분석하는 능력을 배양한다. 그리고 계속적인 토론과 평가를 통해 완성된 작품의 주제와 기법, 개인의 작품론 등을 점검하여 나가야 한다.

This course provides an overview of diverse techniques in copper plate printing, lithography, woodblock printing, stencil, and collagraphy. The aim of the course is to develop original techniques through concrete experimentation and research. Students are encouraged to take advantage of the social and technical characteristics of traditional and modern printmaking to create experimental artistic prints. These different kinds of printmaking are examined in discussions, seminars, and production.
조소전공(Sculpture Major)

※ 작품연구스튜디오 3-1/ 3-2/ 3-3/ 3-4/ 3-5/ 3-6 과목은 반복이수 8회 가능함

6103.610* 개발작품연구 1  3-2-2
Developing Individual Project 1

본 교과는 옵상 형태의 세미나 수업으로 개별 대학원생과 모든 전임교수들 간에 작품제작과 전시방식 등에 관련한 의견을 나누면서 진행된다. 모든 학생들은 자신의 작품을 전시하기 위한 다양한 방식을 개발하고 이를 토대로 실제 작품을 제작하여 개인적 형태의 결과물을 제시해야 한다.

This course opens an opportunity for students to have regular individual meetings with professors to discuss their work. Through several critiques and academic interactions, student will develop their own way of presenting their work. At the end of the semester students are required to introduce their final work in an exhibition.

6103.611* 개발작품연구 2 3-2-2
Developing Individual Project 2

본 교과는 옵상 형태의 세미나 수업으로 개별 대학원생과 모든 전임교수들 간에 작품제작과 전시방식 등에 관한 의견을 나누면서 진행된다. 모든 학생들은 자신의 작품을 전시하기 위한 다양한 방식을 개발하고 이를 토대로 실제 작품을 제작하여 개인적 형태의 결과물로 제시해야 한다.

This course opens provides students with the opportunity to have regular individual meetings with professors to discuss their work. Through several critiques and academic interactions, student will develop their own way of presenting work. At the end of the semester students are required to introduce their final work in an exhibition.

6103.601 작품연구스튜디오 3-1 3-2-2 (8회 반복이수 가능)
Graduate Studio Seminar 3-1

현대의 조형예술은 문화의 여러 측면을 함축하고 표현한다. 다양 한 형태로 나타나는 조형예술의 전반적 관점을 분석, 토론하는 과 정을 통해 주제를 선택하고 독창적으로 해석하여 작품을 제작한다.

Contemporary art signifies various aspects of culture. Through continuous analysis and discussions about how contemporary sculpture is interpreted differently and expressed, students will develop their own way of presenting their work. At the end of the semester students are required to introduce their final work in an exhibition.

6103.602 작품연구스튜디오 3-2 3-2-2 (8회 반복이수 가능)
Graduate Studio Seminar 3-2

본 교과목에서는 1) 학기 중에 제작한 작품에 대해 개별 면담 과 그룹토론을 진행하고 2) 작품제작과 전시방식에 관한 의견을 나누며 진행된다. 모든 학생들은 자신의 작품을 전시하기 위한 다양한 방식을 개발하고 이를 토대로 실제 작품을 제작하여 개인적 형태의 결과물을 제시해야 한다.

In this course students are expected to develop a new work that will be discussed on a one-on-one basis and in group critiques. They will produce and examine writings and resources about how to make the object. The aim of these exercises is to help students better understand their personal visual language. Writing in any form -- descriptions of the artistic process, poetry, fiction, autobiographical essays, art criticism, meta-criticism, etc. -- will be reviewed and discussed. The earlier work of students, including doodles and diaries from childhood, paraphernalia, and collections, can also be examined as resources for their art making.

6103.603 작품연구스튜디오 3-3 3-2-2 (8회 반복이수 가능)
Graduate Studio Seminar 3-3

형상에 비중을 두 현대예술에 관하여 중점적으로 분석하고, 작품제작과 관련한 기법을 본문 및 실험하고 표현 방법을 연구 한다.

Contemporary art places a great deal of weight on plastic. In this course students will learn different techniques of working with plastic through trial and error, analysis through practice, and examining various methods of representation.

6103.604 작품연구스튜디오 3-4 3-2-2 (8회 반복이수 가능)
Graduate Studio Seminar 3-4

후기 산업사회의 전자, 전기공학이 인간의 문화적 조건까지도 변화시키고 있다. 이러한 사회적 상황에 대한 분석을 근거로 조형언어와의 관련성을 연구하며 작품을 제작하고 그 발전적 가능성을 제시한다.

Electronic and electrical materials in post-industrial society have been transforming the conditions of human culture. This course explores relationship between these changes and sculptural language, and simultaneously encourages students to develop the potentials of their own way of working.

6103.605 작품연구스튜디오 3-5 3-2-2 (8회 반복이수 가능)
Graduate Studio Seminar 3-5

본 강좌는 조각적 제재와 기능, 그것의 개발에 관하여 수업으로, 학생들은 구상조각에 관한 표현에 있어서 자신의 독특한 방법을 찾는데 의를 두고 있다. 또한 그들은 현대미술의 장 안에서 작가적 태도를 가지고 자신의 작업을 진행하게 될 것이다.

This course examines the specific features of sculptural material and their techniques and development. Students will be encouraged to find their own form expression through a practical body of work, and locate and present their practice of sculpture within the larger framework of contemporary art.

6103.606 작품연구스튜디오 3-6 3-2-2 (8회 반복이수 가능)
Graduate Studio Seminar 3-6

작품 제작에 있어 형상의 구조적 원리(시간성, 존재성, 공간성)와 조형언어의 관련성을 비교 분석하고 연구한다.

In this course, students will examine the relationship between the structural principle of forms (time, existence, and space) and plastic language. Studio work will be required.

6103.503A 시간・공간・질서연구 1 3-2-2
Studies in Time, Space and Order 1
호상과 독자적인 질서감에서 오는 작품의 실제감은 시공간의 여러 면에서, 즉 철학적 역사적 비평적 접근을 요구한다.

It is possible to express recollection, negation, and "now-here" by subjective and objective perception of time and space. A sense of reality in art work which can be achieved through various periods. In other words, philosophical, historical, and critical approaches will be examined.

The evolution of culture through time is based on particular points of view about nature. Religion, philosophy, and art in different countries and periods were the result of changing relationships between nature and humans. In this course students will be exposed to extensive knowledge of the relationship between nature and culture with the aim of helping students to develop their own work using contemporary technology in a post-industrial society.

This course is designed to provide an analysis of the aesthetic characteristics of Korean sculpture as a response to the epoch and cultural context.

This course explores history of Oriental sculpture and its relation to Korean art.

This course investigates trends in Western sculpture through various periods.

This course offers students a forum for time, space, and order. Those concerns common to sculpture, painting and architecture will be examined as well. Emphasis is placed on group approach through the integration of aesthetic, philosophical and regional aspects. Students are required to structure their own sculptural direction. There will be group critiques at the end of the semester.

6103.504B 자연·문화·조각연구 1 3-2-2
Studies in Nature, Culture and Sculpture 1

6103.506 한국조각사특강 3-3-0
Topics in History of Korean Sculpture

6103.507 동양조각사특강 3-3-0
Topics in History of Oriental Sculpture

6103.508 서양조각사특강 3-3-0
Topics in History of Western Sculpture

6103.510 시간·공간·질서연구 2 3-2-2
Studies in Time, Space and Order 2

6103.511A 자연·문화·조각연 구 2 3-2-2
Studies in Nature, Culture and Sculpture 2

6103.514 현대조각특론 3-3-0
Theories and Criticisms of Modern and Postmodern Art

M0000.011700 현대조각담론 3-3-0
Issues on Contemporary Sculpture
includes lectures and lectures by invited artists, group discussions, and visits to galleries.

<table>
<thead>
<tr>
<th>603.803</th>
<th>대학원논문연구</th>
<th>3-3-0</th>
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Reading and Research

논문연구주제의 설정방법, 전개 그리고 종결을 지도교수와 협의 하여 진행한다.

Thesis research in this class, students discuss topics of thesis, development and conclusion with tutoring profess.
주요한 디자인 연구의 흐름을 연구한다. 현재와 근미래 디자인 연구의 근간을 이루는
디자인 가이드라인, 인도자 등의 다양한 이론과 함께 사례를 통과하여 연구한다. 또한 새로운 시대와 지
역에 적합한 국가, 단체, 기업의 디자인정책과 차별화할 수 있는
구체적인 전략과 방법을 배열해 함께 연구한다.

This course provides students with an opportunity to ex-
amine and analyze the influence of hierarchy on how design-
ers and their products function in society. The course under-
takes to foster an understanding of the role that designers
and their creative concepts play in their respective commu-
nities. Students will be given the opportunity to eval-
uate how environment and local influences have a bearing
on respective design concepts, processes, and solutions.

611.7012 디자인과 인간학(공학, 인사) 연구  3-3-0
Studies in Design and Human Factors

디자인에 필요한 인지적, 물리적 요구를 인간의 관점에서 연구
한다. 인간의 물리적, 심리적, 감각적 관계를 이론과 함께 사례를
통과하여 연구한다. 또한 제품과 영양의 디자인이 관련된 인간의 인
지모델, 디자인 가이드라인, 연구조사 방법론 등의 다양한 이론을
계절적으로 연구한다.

This course provides students with an opportunity to ex-
amine how sensory and cognitive factors relate to respective
design applications. Through examining case studies, recog-
nition models, and guidelines, students will be helped to dis-
seminate their research and implementation.

611.7016 고급디자인스튜디오 1  3-3-0
Advanced Design Studio 1

박사과정을 위한 수업으로 탄생교수의 연구분야를 중심으로 그
내용과 형식은 대 학기 강의를 진행하는 교수의 계획에 따라 결정
한다. 또한 학문적 재문은 하이도 별도로 학습이 안정되어 여러 학기를
거치 탄생교수의 연구분야와 그 내용을 같이 접할 수 있
다. 사례형 강의의 내용은 해당학기에 분할될 수 있다.

The format and content of this course for PhD students is
based on the particular research focus of the professor.
Students may take this course more than once, for credit to learn a professor's research methods in depth. For further details, please contact the Design Department.

611.7017 고급디자인스튜디오 2 3-3-0
Advanced Design Studio 2

The format and content of this course for PhD students is based on the particular research focus of the professor. Students may take this course more than once, for credit, to learn a professor's research methods in depth. For further details, please contact the Design Department.

611.7015 디자인역사와 비평 3-3-0
History of Design and Criticism

This course is based upon an objective examination of the characteristics of different genres of art and design, the similarities and differences between them globally. It will investigate how time and events have affected changes within the disciplines, and provide students with the opportunity to have a more thorough understanding of design. Students will examine how design criticism has shaped thinking about the subject historically and in the present. They will be expected to enter into constructive debates and discussion about chosen themes and develop their own critical values and judgment.

시각디자인전공(Visual Communication Design Major)

611.5301A 디자인스튜디오 91 3-2-2
Design Studio 91

In this course students will create projects for communicating with consumers and the public in the context of our rapidly changing market-oriented surroundings.

611.5304 아이덴티티디자인연구 3-3-0
Studies in Identity Design

In this course students will create projects for communicating with consumers and the public in the context of our rapidly changing market-oriented surroundings.

611.5305 광고디자인연구 3-3-0
Studies in Advertising Design

In this course students will create projects for communicating with consumers and the public in the context of our rapidly changing market-oriented surroundings.

611.5306 시각디자인마케팅론 3-3-0
Topics in Visual Communication Design Marketing

This empirical research course on design and marketing will teach students how to apply the analysis and evaluation of advertising and marketing to various media.

611.5309A 디자인스튜디오 41 3-2-2
Design Studio 41

In this course students will acquire planning skills and technical expertise by working on small projects such as television titles and commercials, and music videos.

611.5310A 디자인스튜디오 42 3-2-2
Design Studio 42

In this course students will acquire planning skills and technical expertise by working on small projects such as television titles and commercials, and music videos.

611.5311A 디자인스튜디오 71 3-2-2
Design Studio 71

In this course students will acquire planning skills and technical expertise by working on small projects such as television titles and commercials, and music videos.
This course provides students with the opportunity to examine the theoretical basis of information and its architecture. They will study how to itemize, order, and visualize informative material through different media options currently available and under development, and investigate how the tools of contemporary information design can be applied to a design problem identified by each student.

This course provides an opportunity for students to analyze the salient factors behind branding and brand development including a rigorous examination of the inter-relation between a brand and its market. It will focus on particular cases, tracking their design history, effectiveness, and potential for development.

This course presents an opportunity for in-depth analysis of imagery used within a multimedia context. By examining the whole spectrum of image generation photography, film, video, computer graphics, drawn animation etc., students can expect to improve and develop their creative skill for the realization and presentation of their concepts. Studies will be supported by a series of lectures by eminent practitioners working within the Multimedia industry.
대학원(Graduate School)  
디자인학부(Dept. of Crafts and Design)

대하여 의견을 나눈다.

The subject of this course is the harmony between digital technology and multimedia art by encompassing new media methodology, examining historical developments, current applications of programs, and state-of-the-art innovations emerging from various media. The role of the multimedia designer in society, and the ethical implications of these media art forms are reviewed and discussed.

공업디자인전공(Industrial Design Major)

현재 인간생활에 요구되는 산업제품 및 시스템을 대상으로 새로운 디자인해결을 제시하기 위한 디자인 프로젝트중심 연구과목으로, 산학연과 인한 다양한 주제를 학계간에 공통으로 진행함으로써, 실체적이고 종합적인 차원의 디자인해결을 체험하도록 한다.

In this course students will design new solutions to industrial products and systems demanded by modern life. Through an interdisciplinary approach and collaborating with industry students will engage in practical and comprehensive problem-solving.

디자인개발을 위한 기획 및 전략설정에 요구되는 제반기술을 연구한다. 사회성과 공공성이 높은 공간을 주제로 하여 도시사회학적 관점과 사회경제적 관점에서 연구하며, 환경미학적 관점과 더불어 공간의 문화적 가치인지에 높이, 유통공간, 전시공간, 공공공간 등을 연구의 대상으로 하여 효과적이고 촉진적인 유통환경의 조건과 구상방법을 연구한다.

In this course students will study the comprehensive analysis of programming space and the space design process. Through working on specific research topics, students will experience the complete process of space design. At each stage, they will augment their capacities for logical reasoning and verbal and visual expression through new media.

디자인기획전략연구  3-3-0

Studies in Design Planning and Strategy

디자인개발을 위한 기획 및 전략설정에 요구되는 제반기술을 연구한다. 사회성과 공공성이 높은 공간을 주제로 하여 도시사회학적 관점과 사회경제적 관점에서 연구하며, 환경미학적 관점과 더불어 공간의 문화적 가치인지에 높이, 유통공간, 전시공간, 공공공간 등을 연구의 대상으로 하여 효과적이고 촉진적인 유통환경의 조건과 구상방법을 연구한다.

In this course students will study various techniques for strategy-setting and design development. Topics will include the analysis of developments in markets, competition, society, producing and evaluating innovative design concepts. Students will learn to write strategies and plans through case studies by research themes.

공간행태론  3-3-0

Space and Human Behavior

공간이미지와 인간행태를 통해 인간의 공간 선호조건과 혐오조건을 밝힌다. 공간과 그 구성을 이해하는 데 도움을 주고, 공간의 인간에 적합한 구성을 설계하는 데 기여하는 데 목표를 두고 한다.

In this course students will focus on the identification of people's
preferences and dislikes through spatial images and human behavior. Students will identify the relationship between behavioral devices and spaces, and develop verbal and programmatic techniques by studying the organization and characteristics of space units.

**Design Studio 61**

기적적 충격에서 흐름과 미래디자인을 동반하기 위한 종합적 인 지식을 습득하기 위하여 신체적디자인의 개념, 가정, 그리고 조 형과 관련된 주제들, 즉 디자인과 사회, 경제, 기술, 인간, 문화, 환경 등을 다 학제적인 관점에서 연구한다. 주제별 대화와 경험학 습이 장조로, 이를 위하여 이들 각 분야를 이끄는 신도적인 전문가 및 디자이너들을 초청하여 주제별 세미나, 워크숍 및 토론의 기회를 갖는다.

This course examines issues pertaining to design and society, economy, technology, humans, culture, and environments from multi-disciplinary point of view in order to have a perspective of design in the present and future. Students will acquire new information, understand the value of design function and form-related concepts, participate in group discussions and experience-based learning. Experts and designers from various fields will be invited to seminars, workshops, discussions.

**Design Studio 62**

소비행동의 가치기준과 평가기준이 이성에서 감성으로 비증이 옮겨가고 있는 시대이다. 이 과목을 통해 인간의 감성요소를 명확히 파악, 분석하여 조형역학이나 변화시각によ는 감성의 디자인 프로세스를 수행할 수 있는 능력을 함양한다. 이를 위해서는 감성공학, 인지과학, 심리학 등의 주반 학문분야와 함께 다학적 전통적에서 새로운 디자인 문제 해결방안을 학습한다.

In a context where society is in a position to comprehensively monitor human behavior, this course investigates how recognized scientific procedures, emotional technology, cognitive science, psychology, etc. fosters a better understanding of human interaction and the evolution of products.

**Design Studio 11**

새로운 신소재의 등장에 대한 리서치와 이미 기존에 있는 소재들 을 면밀히 검토하여 디자인에 새롭게 도입 가능한 소재와 이를 통해 얻을 수 있는 디자인에 대하여 연구한다. 제품디자인 및 인테리 어의 신소재와 신기술을 분석하고 그 프로세스와 적용의 내용과 인식이 되어 있음을 보여주는 다양한 예제와 참조 포괄적 분석 및 가용성의 중요성을 파악하고 설계·산업을 통하여 그 사용과 표현 방법들을 적극적으로 활용해야 할 필요성과 관심을 갖고 있음을 한다.

By researching the newly created materials and accurately investigating the existing matters, it studies the materials which can be possibly introduced to design and the design which can be developed through these matters. This course is about analyzing the new materials and technologies of product design and interior and it understands the various materials and analysis on color palette and the way to manufacture. By utilizing the experiment practices it teaches the application of the use and the way to express them.

**Design Studio 12**

디자인연구 과목은 디자인과의 연구분야를 중심으로 그 내용과 형식은 매 학기 교육의 계획에 따라 결정된다. 또한 반복수강을 하여도 별도로 학점이 인정되어 여러 학기 를 거쳐 디자인과의 연구사를 그 내용을 잡아서 접할 수 있다. 자세한 강의 내용은 해당학과에 문의할 수 있다.

The content and format of this course focuses on the research interests and methods of the professor. In order to learn the professor's research in depth, students may take this course more than once and receive credit for it. For further details, please contact the Design Department.

**Design Studio 51**

디자인역사문화 스튜디오 / 디자인의 역사적 지식과 이론을 연구하고 디자인문화 형성을 위한 실천담론을 생산한다. 역사연구는 한국 및 서구와 동아시아 디자인의 역사적 역학을 조사하고, 문화 연구는 동시대 정치, 경제, 사회, 과학기술, 예술 등이 형성하는 문화 영향 속에서 제반 디자인 현상과 이론에 주목하는 학계적 연구를 수행한다.

Studio for Design History and Culture / The purpose of this studio is to study the historical knowledges and theories of design and to produce the practical discourse of formulating design culture. The historical research examines the topics of historical contexts in Korea, Western, and Asian design. The cultural studies focuses on an interdisciplinary research of the cultural scope out of politics, economics, society, science and technology, and art etc.
Studio for Design Aesthetics and Culture / This studio focuses on the development of an interface between design aesthetics and culture. The research examines the various topics and theories of contemporary aesthetics of design as a social existence. For this, not only the variety of theories and concepts of design aesthetics but also current issues of public aesthetics of design are discussed and developed.

611.7406A 
Studio in Product Design Culture

611.7407 
Topics in Space Design

611.7408A 
Advanced Studies in Space Design

sorial aesthetics of our built environments.
Design Research Methodology 1

This course aims to improve the practical research abilities and to examine the question, "What is research in design?" Students will be exposed to mainly qualitative research methodologies and discuss issues pertaining to constructing interview questionnaires, survey techniques, and coding and analysis methods. They will be expected to prepare a bibliography and literature review, and write a proposal for their thesis or dissertation.

Design Research Methodology 2

This course aims to improve the design research abilities and to examine the question, "What is unique in design research and how to conduct?" Students will be exposed to different research methodologies such as qualitative and quantitative research, simulation and modeling research, logical argumentation, case studies, and discuss issues pertaining to constructing user research scenarios, survey techniques, and coding and analysis methods. Students will write a full-length paper for presentation at a conference as part of their graduation requirements.

Introduction to Design History and Culture Studies

This introductory course to design history and culture studies. This course offers the fundamentals of systematic inquiry in a wide range of domains which consist of interdisciplinary networks out of Design history, social philosophy, visual culture, cognitive science, and cultural policy etc. More particularly, the course introduces students to the variety of perspectives from which research subjects may be studied, as well as the various theory and methodology for the practical approaches. This leads students to develop their own preliminary inquiry for proposing the subject and method in order to cultivate the practical capability for individual study.

Studies in History of East Asian Design Culture

1876년 개항 이후 형성된 한국 근현대디자인의 전개를 역사적 차원에서 고찰한다. 이 강좌는 기존 산업사회의 근대화 이데올로기와 생산자 중심의 디자이너 연구의 한계를 넘어 기역과 시간뿐만 아니라 수용자 삶의 문제까지 포함하는 다평판 문화의 핵심주제로서 한국 디자인문화의 역사적 탐구에 초점을 둔다. 학생들은 한국 디자인과 일상 삶과의 문화적 차원에서 독해하고, 논의하고, 비평적 분석을 시도한다. 경우에 따라 답사를 통해 사례연구를 진행할 기회가 제공된다.

Examine the history of Korean modern and contemporary design culture since the opening of a port in 1876. This course focuses on the historical investigation of Korean design culture as a core subject of the Korean cultural history including not only the issue of memory and time but also consumers and their everyday life, which is beyond the limits of existing studies in describing design history based upon the ideology of modernization for industrial society. The course leads students to do reading, discussing, and analyzing the selected issues in the domain of culture history of Korean design and daily life. In some cases, chances to have a field trip and case studies are offered.
This course conducts comparative research to appreciate and understand issue of historical identity in East Asian design culture. The work of the course includes reading, discussion, and critical analysis through a literature review, phenomenological materials and a survey of the essence of Asian design culture in daily life. By analyzing the conditions and local trends in Asian design culture, this course examines and constructs a scientific foundation of the future of design in Korean products and content of the Korean Wave (Hallyu).

19세기 산업혁명 때 서구 근대 디자인의 전개과정과 주된 변화를 탐구한다. 이 강좌는 그동안 서구디자인의 역사가 주로 20세기 산업사회와 대두세도를 이어가며 성인화가 진행된 한계를 넘어서 문화적 차원에 초점을 둔다. 이로써 서구디자인의 역사 및 특성은 기존 생산자 중심의 시각으로부터 소비자와 일상 삶의 영역에 대한 이해와 성찰로 인식을 확장시킨다. 수수께끼가 선정된 문헌연구에 기초해 독해, 토론, 비평적 분석 등의 과정으로 진행된다.

Explores the developmental processes and principal changes in the Western modern and contemporary design culture since the Industrial Revolution in 19th century. This course focuses on the historical investigation of Western design culture as a core subject of the cultural history, which is beyond the limits of existing studies in describing design history based upon the ideology of modernization for industrial society in the 20th century. Proceed with reading, discussion, and critical analysis through the literature review of selected works, phenomenological materials etc.

1960년대 디지털 컴퓨터의 개발부터 시작된 모바일 아플리케이션까지 디지털 디자인문화를 연구한다. 1940년대에 컴퓨터가 처음 만들어졌을 때 그것은 단지 공학계산을 위한 도구에 불과했으나, 그 후 컴퓨터를 이용한 다양한 문화적 행위와 콘텐츠가 생성되었다. 사용자 인터페이스, 인터렉션 디자인, 가상현실, 컴퓨터 게임, 컴퓨터 매개 커뮤니케이션, 모바일 아플리케이션 등의 발전은 디자인의 개체 및 변화방식을 다룬다. 이 강좌는 이러한 역사적 과정에서 디자이너가 디지털 콘텐츠를 어떻게 다루는지에 대해 다룬다. 디자인의 형식적 발전에 따라 이러한 발전의 과정을 다룬다. 또한 디자인의 이러한 변화는 오늘날 현대사회와 시각문화에 어떠한 영향을 끼치고 있는지에 대해 다룬다.

This course examines digital design culture from the early development of digital computers in 1960s to recent mobile applications. When the first computers appeared in 1940s, they were only used for the purpose of scientific calculation. In the 1980s the computer moved into the daily life of people with the emergence of the personal computer, which led to various digital cultural activities and the creation of digital content. The emergence of user interfaces, interactive media, virtual worlds, computer games, computer-mediated communication, and mobile applications has changed the object of design. This course examines how design has dealt with digital content from various angles, how design has changed with advances, and how our society and visual culture have been affected by the evolution of digital design.

The theoretical discourse of the role played by design language in contemporary society and visual culture is the subject of this course. Design is a form of text that mediates between visual culture - as the nonverbal languages like space, object, sign - and action. Since the 20th century, the function and role of visual culture has dramatically expanded through its interaction with text that depends on typographic text, such as literature etc. This course will leave students with an understanding of the visual relationship between contemporary visual culture and various forms of text and the opportunity to examine the new academic fusion and new possibilities of this intertextuality.
The aim of the course is to study the theoretical background, concepts, practical process of design administration for design culture which elevates the standard of living in the public domain. Based on the concept of publicity, the course offers the theoretical foundations of design administration in government’s organization. The variety of administrative concepts in organization, process, domains, laws and regulations etc. are emphasized.

The purpose of this course is to provide students of Design History and Culture with diverse practical experiences at selected fields such as art and design museums. Student should learn the different skills for exhibition proposal and design which are required to become a design curator or researcher.

This class will theoretically support graduate research process and lead students to develop a concrete thesis. In addition, help practice course students to logically develop their thesis topic and research on theoretical background information in their work process.

This class will research on general, technological ways in ceramic mass production system. By using one of various aspects of craft which is, the possibility of mass production, craft could reach to more people and share the excitement.

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이 강좌의 목적은 디자인역사문화 전공자들을 위해 디자인 미술관 등과 같은 선정된 현장에서 실무 경험을 제공하는데 목적이 있다. 학생들은 디자인 연구자 또는 큐레이터가 되기 위한 다양한 현장 경험을 학습함으로써, 향후 박물관 및 미술관 등에서 필요한 전시기획 및 전시 디자인의 실무 환경과 체계를 현장에서 학습하고 체험한다.

This course will deal with the creation of experimental works that combine expert techniques and aesthetic sense to realize new values in ceramic art.

이 수업에서는 그러한 공예의 사회, 문화적 가치에 대해 논의한다.

This seminar will look into the cultural aspects in craft and the reality of craft process. This class will help practice course students to logically develop their thesis topic and research on theoretical background information in their work process.
현대 도예세미나 1 
Seminar in Contemporary Ceramics 1
현대 도예의 성립과 그 발전 과정을 이해하고 그 안에서 자신이 작업이 차지하는 위치를 파악함으로써, 이후 전개되는 작업이 방향성을 가질 수 있도록 돕는다. 이론적 심미를 병행함으로써 기술이나 방법론에 펼蟆되는 것을 피하고 종합적인 분석력을 가진 도예가가 되도록 한다.
By understanding the establishment of modern ceramics, the development process and the location of their work, students could determine the direction of their work. By combining theory and practice, students are able to become ceramists with analytical skills.

현대 도예세미나 2 
Seminar in Contemporary Ceramics 2
현대 도예세미나 1의 심화과정으로 실제 작업의 비중을 점점 높여 작업 결과물이 결과 완성도를 성취할 수 있도록 한다. 이어서 자신의 작품과 함께 동료들의 작품을 서로 분석, 비평함으로써 도예에 대한 평가기준을 공유하고 작업의 수준을 판단하는 안목을 기르도록 한다.
The intensified process in Modern Craft Seminar 1 will help give higher standards in the final work. In addition, students will share each other's work and by analyzing, critiquing one another, students will gain a better perspective in judging ceramics.

금속공예전공(Metalsmithing Major)

611.5201 
금속공예스튜디오 1 3-2-2
Metalsmithing Studio 1
다양한 금속소재와 기법을 바탕으로 창의적 감각의 형태를 제작 연구한다.
In this course, students will create aesthetic works using various metals and methods.

611.5202 
금속공예스튜디오 2 3-2-2
Metalsmithing Studio 2
숙련된 제작기술과 미적 감수성을 바탕으로 금속공예의 새로운 가치를 실현하기 위한 독창적이고 실험적인 작품을 제작한다.
In this course, students will create experimental works that combine expert techniques and aesthetic sense to realize new values in metalsm Smithing.

611.5203 
금속공예스튜디오 3 3-2-2
Metalsmithing Studio 3
새로운 소재와 기법을 개발하고 그 내용이 실제적인 작품 제작의 바탕으로 내포될 수 있는 가능성을 연구한다.
In this course, students will develop new materials and techniques and apply them to actual pieces that embody functionality.

전통금속공예연구 3-2-2
Studies in Korean Traditional Metalsmithing
전통금속공예문화의 본질을 이해하고 전통의 다양한 소재와 기법을 연구하여 현대적 감각의 작품을 제작하는 데에 적극 활용한다.
In this course, students will study the essence of traditional metalsmithing and explore ways of utilizing traditional materials and techniques in contemporary works.

611.5206A 
금속공예현장사례연구 3-3-0
Directed Field Survey and Research in Metalsmithing
금속공예산업 및 문화와 관련하는 분야 및 개인을 연구하여 현장에 대한 적응력을 높이고 금속공예가로서의 아이덴티티를 확립한다.
In this course, students will study the metalsmithing industry and metalsmithing culture, together with associated fields and individuals. The course will help students to establish their identities as metalsmiths and teach them the practical adaptability needed for artists.

대학원논문연구 3-3-0
Reading and Research
대학원 학위논문 과정으로 개별 주제에 대해 연구한다.
This course will consist of individual research for the graduate thesis.

개별주제연구 3-2-2
영문별영
개인적으로 연구주제를 설정하여 작품의 개발 과정 및 완성을 경험하며, 각 과제마다 요구되는 논리적 사고력, 언어적 및 사서적 표현력 등을 증진시킨다.
In this course, students will pursue independent study with their own research topics. The course will allow them to experience the complete process of creation from planning to finishing a piece. At each stage, students will augment their capacity for logical reasoning and verbal and visual expression.
614.501  
**Introduction to Art Administration**

Introduction to the role of a curator and the responsibilities of a museum director.

Courses in fundraising and management.

614.502  
**Management Strategy for the Arts**

Overview of arts administration and related issues.

Courses in management and strategic planning.

614.503  
**Principles of Accounting for Non-Profit Organizations**

Basic financial statements and reports Financing of operations and growth

Cash flow management
Budgeting for planning and control

614.507A  
**Marketing Management for Non-Profit Organizations**

Marketing and sales, media relations, and other successful marketing tools.

614.509A  
**Development and Fund Raising for Arts**

Study of diverse channels of fund raising and their applicabilities to specific institutions.
tory of understanding aesthetic - nature of sensibility, sense of beauty, and art - from ancient time to present.

614.677 미술경영과 법 3-3-0
Seminar in Contemporary Art Criticism

현대미술 작품들에 대한 전문 비평가들의 견해를 해당 미술 작
품들의 경제적 가치와 비교하여 검토한다.

Examining contemporary art works by comparing their
economic values and interpretations which was made by var-
dious professional art critics.

614.803 연구논문연구 3-3-0

Master's Essay

학위취득의 필수 요건인 학술논문의 연구를 지도교수의 지도하
에 진행하고 논문을 작성한다.

Master’s essay will be prepared under the supervision of
student’s advisor.

614.606 미술공급과 방법론 3-3-0
Studies in Connoisseurship and Appraisal

이 과정은 미술공급과 방법론을 가르치다. 미술품을 평가
할 수 있는 능력의 배양이 주요 목표이며, 해당 분야의 법
• 윤리 - 학문적 측면에서의 접근이 함께 이루어진다.

The course provides the scholarly approach of art apprais-
al within the framework of law and ethics as well.

614.516A 미술시장론 3-3-0
Seminar in Art Market

국내외 미술 시장의 현황에 대해 총체적으로 살펴보고, 국내
시장 현황학습을 통해 실태를 익힌다.

It will examine the current state of the domestic and ex-
ternal art markets in general, and learn practical tasks
through field study of the domestic market.

614.508A 예술문화정책세미나 3-3-0
Law and the Art

저작권, 문화유산, 고풍풍, 표절, 상표권, 착복, 프라이버시, 명
예훼손, 계약의 위반, 작품의 진위 여부 등 미술품 관리에 필요한
법 전반을 다룬다.

Law and the Arts will concentrate on the artists manager’s
need to identify and resolve the legal issues which may arise
in visual and performing arts organizations. The course’s
specific subject matter will include: organizational/corporate
legal issues, basic contracts of the verbal and written, em-
ployee relations: full-time regular employees, independent
contractors, copyright and ownership: obligations, waivers

614.609 Case Studies in Intellectual Property
Contract of Art

정보산업 발달과 더불어 저작권에 대한 관심이 더욱 높아지고
있으며, 더불어 이와 관련된 많은 법적 분쟁들이 발생하고 있다.
이에 따라 이 강좌는 저작권법이 법체계에서 가운데 위치를 인식
하고, 저작권법 전반에 걸친 체제적, 저작권금지, 저작권전송, 저작권
법 전반을 다룬다.

Applications of law in areas drawn from copyright law,
unfair competition, trademark law, misappropriation, interfer-
ence with contract, and problems relating to authenticity of
art works.

614.206 예술문화정책세미나 3-3-0
Seminar in Art and Cultural Policy

이 과목은 세가지 기본 목적을 가지고 있다. 첫째는 정책연구에
필요한 이론과 도구를 공부하는 것이고 둘째는 문화정책의 이해,
평가, 설계에 필요한 과제와 검토를 공부하는 것이며, 곧으로 이리
한 과정을 실제 정책에 적용하는 경험을 쌓는 것이다. 이 목적들
의 바탕은 학생들은 요구에 따라 결정할 것이다.

정책연구는 정책 형성과 집행에 대한 이론을 중심으로 진행될
것이며, 문화정책의 분석은 국가, 도시, 지역 단위의 정책 중 일부
를 다루게 될 것이다. 이와 더불어 문화정책의 성격 연구는 문화
정책 연구, 문화 다양성, 문화 기관의 민영화 등에 초점을 두게
될 것이다. 이 과정은 다양한 가지 주제를 학생의 수업을 따라
다루게 될 것이다. 실제로 학생들은 더욱 두 가지 다른 교과 내
용이 준비되어 있다. 이 과목은 전문 학자와 교수의 영향을 둔
문화예술 분야의 실효성을 위한 과목이며, 전문 배경과 상관없이
수강할 수 있다.

The objectives of this course are (1) to help students to
acquire a solid grounding in the literature on policy studies
and to obtain theories and research skills essential for policy
analysis; (2) to acquaint students with key issues and prob-
lems in the design and evaluation of cultural policy; and (3)
to provide students with an opportunity to apply theories and
methods to cultural policy issues.

In pursuit of the first objective, the readings begin with
focuses on basic theories and methods in the study of public
policy formation, implementation, and evaluation. We move
on to next to theoretical discussions of cultural policy at two
different levels; national and regional/ urban, which will be
followed by an examination of corresponding case studies.
The third section deals with a number of policy topics that
are of particular interest in the current debates on cultural
policy, including privatization of cultural institutions, cultural
diversity, tax system for cultural policy, screen quotas, glob-
alization, and so on.

This course is for both aspiring academics and admin-
istrators in the arts.

M1874.000100 미술경영의 사회심리학 3-3-0
Social Psychology of Art Management

미술경영은 다양한 미술활동에 관여하는 사람들의 상호작용 속
에서 이루어지며 사회심리학적 접근이 매우 유용하다. 이 강좌
는 미술경영의 제작, 전시, 감상, 판매, 수집 및 판매관 운영을 포
함하는 미술경영 활동을 사회심리학을 통한 분석하고 관련
 연구들을 살펴봄으로써 미술경영에 대한 심리학적 이해를 높임
과 동시에 장차 경험적 연구를 설계하고 실제 미술경영에서 응용할
수 있는 지식과 방법론을 제공하고자 한다.

Social psychological approach to art management is very
useful since art management consists of the interaction of those persons who are engaged in various art activities. In this course we intend to analyze art management activities including production, exhibition, appreciation, sales and collection of art products and also management of art galleries through social psychological understanding of art management and provide knowledge and methods for the design of empirical studies and also for the actual management of art.

This seminar will make the students understand the flow of Korean art history and provide them to train themselves opportunities to analyze art works of diverse genres and media such as painting, sculpture, photography, installation, video etc..

Seminar in Korean Art

Seminar in Western Art
기초법전공(Basic Law Major)

270.501 법철학기본연구 3-3-0
Fundamentals of Legal Philosophy

법의 문제는 종종적으로 정의의 문제로 귀착한다고 할 수 있다. 이러한 의미에서 정의의 다양한 의미와 그 기준을 탐구하는 것은 본 법학의 근본문제를 다루는 것이라고 할 수 있다. 이 과목에서 는 이러한 법학의 근본문제라고 할 수 있는 정의의 의미와 그 기준에 대한 원론적 논의를 시도한다.

The study of law naturally leads to the question of justice (righteousness) in law. This course offers an intensive study on the various definitions and measures of justice (righteousness) and covers the most fundamental issues in legal studies.

270.502 법철학특수연구 3-3-0
Special Topics in Legal Philosophy

법학의 근본문제라고 할 수 있는 정의의 의미와 그 기준을 탐색하는 것을 바탕으로 하여 <법철학특수연구>에서는법철학을 제도적 학문으로서의 법학과의 접목의 목적을 시도한다. 법철학이 제도를 구현함에 목적이 있는 법학에서 이러한 기능을 수행하며 어떠한 방향을 제시하는데 있어서 논의하는 것을 주목적으로 한다.

This course studies the ways and means of applying the philosophical ideals of law to reality. The distinctive characteristics of legal studies lie in their basic nature which purports the systematization in the real world.

270.503 법학방법론연구 3-3-0
Methodology of Legal Science

법현상을 파악하는 도구로서의 법학방법론을 구체적으로 탐구한다. 법학의 궁극적 목적은 이론적 논의를 넘어 구체적인 사안의 해결에 있기 때문에 이러한 구체적 사안의 해결방법을 체계적으로 연구하는 방법론이 필요하다. 그러한 법학방법론을 상세하고 사안에 따른 적절한 방법론을 정립하고자 한다.

Legal methodologies as a tool for appreciating the legal phenomenon are to be closely examined in this course. The study of law ultimately purports for building up the theoretical system of resolving the conflicts, making the study of legal methodology most essential.

270.504 법가치론특수연구 3-3-0
Problems of Values in Law

법의 존재론적 논의에서 출발하여 시대적 상황에 따라 대두했던 자연법의 다양한 정의와 현대적 의미에 이르기까지 자연법의 체계적 연구를 수행한다.

Starting from the ontological approach, we will analyze the definitions and ranges of natural law and its implications in respective eras and societies.

270.505 자연법연구 3-3-0
Studies in Natural Law

한국법제사 전공자를 위한 예비강좌로, 한국법제사의 기초적인 사료, 예컨대 법전, 연대기, 고문서, 사례 등에 이르기까지 연구법별론

학점구조는 "lecture hours" per week: and the final number means "laboratory hours" per week. 15 weeks make one semester.)

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270.506 법사상사연구 3-3-0
Studies in History of Legal Thoughts

역사적 변천을 통해 발전되어온 법제도와 법학의 사상적 기초를 탐구한다. 필요한 법령 내에서 법철학, 법사회학, 법제도 등 인접 내지는 혼합적 법령에 관한 연구도 병행한다.

In this course, we will examine the ideological foundations of the legal system and legal study. Adjacent or overlapping areas of law, such as jurisprudence, legal philosophy, law and society, and legal history if necessary.

270.507 법사상사특수연구 3-3-0
Special Topics in History of Legal Thoughts

법사상사의 기초적 이해를 바탕으로 구체적 법령이나 사안을 소재로 하여 현대의 제도법에 구현된 법사상사의 구체적 모습과 의미를 탐구한다.

This is an advanced and applied course of 270.507. With the intellectual deposits acquired through 270.507, this course sharpens the analytical power of detecting the legal ideology within specific legal principles and cases.

270.508 근대법사상사연구 3-3-0
Studies in Modern Legal Thoughts

근대 법사상의 흐름을 개관하고 인류사 전체에서 근대 법사상사가 가지는 의미를 새기고, 한국의 법사상사의 흐름도 함께 살펴본다. 근대 법학의 기저를 이루고 있는 근대법사상을 이해함으로써 근대 법학의 이해를 돕고 나아가 근대 법학이 나라가야 할 방향에 대해 심층 논의한다.

This course is a general survey on the trends of modern Western legal theories. Studies of the Korean legal theories will be accompanied. The ultimate goal is to nurture students' ability to develop a balanced intellect on law.

270.513 로마법연구 3-3-0
Studies in Roman Law

외국법에 대한 연구 방법의 모음을 주도 목표로 한다. 특히 우리 법학과 관련이 있는 러시아, 프랑스나 독일의 법과 판례를 조사하는 방법과 분석, 그리고 우리 법학의 연구에서 자료를 사용하는 방법에 대해 탐구한다.

This course aims at understanding the methodologies of studying legal systems of countries that have a major influence on Korea. Special attention will be paid to the methods of researching and analyzing the law of America, France, and Germany. Studies on foreign law will be ultimately used to study Korean law.

270.514 한국법제사연구 3-3-0
Studies in Korean Legal History

한국법제사 전공자를 위한 예비강좌로, 한국법제사의 기초적인 사료, 예컨대 법전, 연대기, 고문서, 사례 등에 이르기까지 연구법발론

학점구조는 "lecture hours" per week: and the final number means "laboratory hours" per week. 15 weeks make one semester.)
에 대한 내용이 강조의 중심 내용이다. 기초서적에 대한 해석과 연구, 연구자 검토 및 이에 대한 접근방법을 다룬다.

This seminar is established for students who intend to major the legal history of Korea. In this seminar, we deal with fundamental historical materials, such as codes, annuals, historical archives, cases, and methods of legal history. We will discuss, translate, and interpret the fundamental historical materials and studies related to Korean history and others.

270.515 서법의재구성연구 3-3-0
Studies in European Legal History

로마 이후 서양의 법과 법학의 발전과정을 특히 제도사적인 측면과 법학사적인 측면을 중첩하여 현대에 이르기까지 추적한다. 다양한 법률과 법전, 다양한 문헌 및 국가들의 법률발전을 고찰함으로써 우리나라의 법과 법학에 대한 역사적 이해의 시각과 안목을 제공하는 데 목표를 둔다.

This course examines the evolution of the legal system and the theory and practice in Western societies. Students will be provided with a background knowledge and broader perspective on the historical development of law and founding of the modern legal system.

270.517 동양법제사연구 3-3-0
Studies in Oriental Legal History

중국을 중심으로 하는 동아시아 한자문화권 국가의 법제사를 연구하여 우리 법의 문화적 풍태를 규명하는 작업을 수행한다. '동아시아 common law'의 가능성, 법, 인권 개념의발전 등을 집중적으로 다룬다. 베트남, 대만, 미얀마 등 불교국가에서의 법률과의 상황과 역할을 주목한다. 인도를 중심으로 하는 힌두세계와 중앙아시아의 근본이념과 이슈를 비롯한 법도 보도적으로 연구한다.

The legal histories of the East Asian countries (China, Japan, Korea) are reviewed to consider the plausibility of the "East Asian Common Law." Conceptual distinctions among key words such as (Confucian) ethics, law, and human rights are scrutinized as well as their historical and sociological origins. The development processes of the rule of law in Buddhist, Hindu and Islamic countries of this region are also examined.

270.518 한국법제사특수연구 3-3-0
Topics in Korean Legal History

특정주제나 구체적으로 제도를 중심으로 한국법제사의 발전과정을 집중적으로 탐구한다. 특히 경제 이후 우리 법학의 발전에 독자적 영향을 미친 현대법과의 전개음에 주목함에 현대 우리법제사의 바탕을 제계적으로 이해하는 데 주목한다.

An advanced version of 270.514. This course explores the specific legal topic or area in Korean legal history. We will focus on the post-1945 developments of Korean law and its relationship with the legal heritage of Japan.

270.522A 사법사비교연구 3-3-0
Comparative Studies in History of Private Law

사법(私法)의 역사(私法史)는 한 발공제독 내지는 발전사의 사법의 변모를 통시적으로 고찰하는 학문분야이다. 이것은 사법의 합법성을 포괄하기 위하여 역사적 배경의 전도, 특히 경제적, 사회적, 문화적, 정치적 제반사상의 변화가 사법에 어떻게 반영되고, 역으로 사법의 변화는 이들 생활양식에 어떻게 작용하였는가를 밝히는 작업이다. 이러한 과정을 공시적으로 확대하여 여러 법공제독 내지는 발전사의 사법사를 비교・연구하는 것이 이 과목의 목적이다. 이를 통하여 사법에 형성된 각 발전사의 그리고 다음을 밝히고, 전지구적으로 사법이 통합되어가는 과정에서 우리 법건의 원리를 확인하고 나아가 재해석할 할 보다 협동적인 도구로 가는 데 목표를 둔다.

This course provides a basic understanding on Roman law. The course overviews the fundamental legal system. It takes into consideration all the legal orders of the world; practical focus, however, is to be laid on such legal orders as stand directly or indirectly in close relationship with Korean legal order. They encompass above all European states and European Union, North America, Japan and China. The Historical-Comparative Study may be formed as an overall comparative history (e.g. as a comparison between legal families or various states), or as a historical comparison of legal institutions (e.g. contract, securities, etc.), or as a study focused on the history of legal science in a global dimension.
Studies in History of Modern Private Law

This course studies the evolution of Continental law through the first and second reception of Roman law and the development of the modern public law with a special reference to the codification of modern Continental law and its background.

Studies in History of Modern Public Law

This course explores the original backgrounds and development of the modern public law with a special reference to the contribution of public law to the development of society.

Studies in Legal Theory

This course primarily explores on the discrepancies that arise in the course of applying legal Dogmatik in actual disputes. The philosophical foundations underlying the disputes will be dissected by studying various sources.

Studies in Modern Korean Legal History

This course takes up the 19th century and the 20th century, focusing on the legal history of Korea. It examines the development of law in Korea and its influences on the modern legal system.

Special Topics in Sociology of Law

This course will scrutinize the origin and backgrounds of the major theories in the study of law and society. Their implications in Korean society will also be considered.

Readings in Foreign Law

This course studies the evolution of Continental law through the first and second reception of Roman law and the development of the modern public law with a special reference to the codification of modern Continental law and its background.

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ability. The course ultimately explores law as process, and the inter-relationship between the law and the sociocultural environment.

M2172.000700  법인류학특수연구 3-3-0  
Special Studies in Anthropology of Law

본 강좌는 법인류학의 세부주제에 관해 기존의 연구성과들을 검토하고 한국사회에 연구가능한 주제들을 발굴하는 것을 목표로 한다. 법인류학의, 제한에 대한 접근방법, 법률과 집단에 대한 분석과 범죄성, 세계화와 민법 등의 주제들을 한국사회와관련하여연구한다. 법인류학에 관한 이론, 방법론을 집중탐구하고 주요 사례를 통해 학생들의 연구능력을 향상시킨다.

This course aims at reviewing several topic areas in the anthropology of law and exploring potential research areas in Korea. It focuses on the legal pluralism, qualitative approaches to the judicial behavior, the legal profession, legal consciousness, and the globalization. Major theories and methodologies are reviewed, and students are expected enhance the research ability.

헌법전공(Constitutional Law Major)

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Freedom of Speech

Policy Science of Law

Topics in Policy Science in Law

Introduction to Korean Constitutional Law

Studies in Human Rights Law

Studies in English Private Law

Studies in American Private Law
대학원(Graduate School)  법학과(Dept. of Law)

American private law, having its origin in English common law, has developed into an independent system of private law during the last 200 years. This course focuses on the law of contracts and torts as reflected in the Uniform Commercial Code. Each student is expected to make a presentation and participate in class discussions.

사법일반이론  3-3-0
General Theory of Private Law

사법일반에 내재된 기본원리, 가령 법률행위, 대리, 소멸시효, 신의성실의 원칙, 권리면허규제의 원칙 등을 수강생들이 연구하여 발표하고 집중적으로 토론을 거치면서 사법의 이해를 돕는 것을 목표로 하는 세미나 형식의 강좌이다.

This course offers an understanding of private law through student presentations and discussions on the fundamental principles of private law. Subjects of such presentations may include, for example, juridical act, agency, statute of limitations, principle of good faith, and principle against abuse of rights.

채권법연구  3-3-0
Studies in Law of Contracts and Torts

사람과 사람간의 관계를 규율하는 채권관계에 있어서 나타나는 여러 가지 특수한 문제들을 수강생들에 맞게 소주제로 분담하여 연구한 후 발표하고 토론하는 세미나 형식의 강좌이다.

In this seminar, students are assigned a specific issue that arises in a contractual relationship between persons. Each student is expected to make a presentation and participate in class discussions.

가족법연구  3-3-0
Studies in Family Law

본 강좌는 가족을 중심으로 하는 가족법에 있어서 친족관계와 혼인, 자녀양육, 사후 재산 분배 등에 있어서 근본적인 문제점을 탐구하는 과목이다.

This is an advanced seminar on family law. Possibles topics include marriage, divorce, child support, and other issues in the parent-child relationship, and succession.

재산법판례연구  3-3-0
Case Studies in Law of Property and Obligation

본 강좌는 재산법에 관한 사항, 물권, 재무법의사건에 관한 사항, 계약, 불법행위, 담보 등으로 세분화하여, 각 분야의 판례를 집중적으로 분석함으로써 각 분야별 심도 있는 문제점을 고찰하는 것을 목표로 하는 과목이다.

This course aims to study important issues in the law of property and obligation, especially contracts, torts, and security. We will analyze the case law in these areas.

민사소송법연구  3-3-0
Studies in Civil Procedure

이 과목은 수강생이 민사소송법 전체에 대하여 깊이 이해하고 문제점에 대한 인식을 갖도록 하는 것을 목표로 한다. 민사소송법의 전 분야에 걸쳐 중요한 주제나 사례상이 있는 주제를 선발하여 각 수강생이 연구한 결과를 발표하고 토론하는 세미나형식의 강좌이다.

This course is designed to provide students with a deeper understanding of civil procedures. Students will be assigned to specific presentation topics of importance or current debates.

사법특수연구  3-3-0
Topics in Private Law

본 강좌는 사법의 특수분야, 가령 채무불이행, 부동산, 계약이론, 시효이론, 조합 등에 있어서 근본적인 문제점을 탐구하는 과목이다.

This course deals with several specific sub-areas of private law, such as nonperformance of an obligation, real property, organizations, and theories on contracts and statute of limitations.

비교사법연구  3-3-0
Comparative Study of Private Law

본 강좌는 대륙법계와 영미법계로 대별되는 각국의 사법체계를 사안별, 특히 계약법과 불법행위법에 대하여 비교⋅검토함으로써 우리 민법에의 시사점을 찾는데 목적을 두는 과목이다.

This course provides students with insights on studying Korea civil law through a comparative study with Continental and Anglo-American private law systems. Specific subjects will be chosen, especially in the law of contracts and torts.

민사소송법특수연구  3-3-0
Topics in Civil Procedure

이 과목은 학기별로 민사소송법의 각 부분(민사소송법사, 당사자, 민사법원제도, 소송행위론, 소송요건론, 민사증거법, 심리방식론, 판결효력론, 상소제도)에 관한 수강생이 심층적인 이해와 문제점을 인식하도록 하는 것을 목표로 한다. 위 각 부분 중 하나를 특정하여 그와 관련된 여러 주제에 관한 종합적으로 연구, 발표를 하는 세미나 형식의 강좌이다.

This course aims further the students’ understanding of legal issues and problems in each sub-areas of civil procedure, such as history of the law of civil procedure, parties, civil courts, procedural acts, procedural requirements, evidence, trial proceedings, effect of judgments, and appeals. Each student is expected to choose a subject and make a presentation in the presence of fellow students.

물권법특수연구  3-3-0
Topics in Law of Property

본 강좌는 물권법, 부동산등기, 소유권, 용역물권, 담보물권 등 특수분야로 세분화한 후 소재법으로 나누어서 수강생이 이를 연구하여 발표하는 세미나형식의 강좌이다.

This seminar is designed to study the law of property focusing on several sub-areas, such as changes in real estates rights, registration of rights in real estates, ownership, case-
ments, and other proprietary rights. Each student is expected to make a presentation on one of such topics in the presence of fellow students.

270.631 채권법특별연구 3-3-0
Topics in Law of Contracts and Torts

본 강좌는 채권법의 특수분야, 즉 매매계약, 리스계약, 도급계약, 보증, 특수소송법규, 손해배상, 약관 등의 세분화된 분야를 집중적으로 탐구하는 과목이다.

This course is designed to guide students to study the law of obligations, focusing on several specific sub-areas, such as sales contracts, lease contracts, contracts with an independent contractor, guaranty, specialized categories of torts, damages, and general conditions of contract.

270.632 가족법특별연구 3-3-0
Topics in Family Law

본 강좌는 가족법의 특수분야, 즉 혼인, 상속, 속속, 가족 제도 등에 관하여 집중적으로 연구하고 발표하는 세미나형식의 강좌이다.

This seminar is designed to have students study family law, focusing on several specific sub-areas, such as marriage, parent-child relationship, wills, succession, and other issues of domestic relations. Each student is expected to make a presentation on one of such topics in the presence of fellow students.

270.633 부당이득⋅불법행위연구 3-3-0
Studies in Law of Torts and Unjust Enrichment

본 강좌는 민법 중 부당이득과 불법행위에 관한 특수한 문제점들을 다시 구체적으로 세분한 후 이를 집중적으로 연구하고 발표하는 세미나형식의 강좌이다.

This course is designed as a seminar focused on unjust enrichment and torts. Specific issues in these areas will be identified and assigned to students as presentation topics.

270.634 민사소송법특별연구 3-3-0
Case Studies in Civil Procedure

이 과목은 관련연구를 통하여 이론으로 배운 민사소송법의 실제 적용 사례를 연구하고 관계가 가지는 의의 및 문제점을 인식하도록 하며, 민사소송법 분야의 중요 관계를 정하여 푼다는 세미나 형식의 강좌이다. 관계의 전망은 최근의 중요 관계를 중심으로 하거나, 역사적인 의의가 있는 중요 관계를 중심으로 할 수 있다.

This seminar focuses on student research on the applications of the law of civil procedure in the real world. This process will enable students to understand the meaning and problems of each precedent. In this seminar, each student will be assigned an important case in civil procedure as a presentation topic.

270.637 가족법특별연구 3-3-0
Case Studies in Family Law

본 강좌는 가족법 전반에 걸쳐 판례가 취하는 입장들을 관계의 변천과 아울러 연구한 후 이를 발표하고 토론하는 세미나형식의 강좌이다.

This seminar is designed to enable students to research case laws in family law and make presentations in the presence of fellow students.

270.639 파산법연구 3-3-0
Studies in Law of Bankruptcy

파산법을 비교적 비해 의사당, 회의법 등 도산법 분야에 대한 이해를 증진하고 이 제도를 상호관계의 관계뿐만 아니라, 민법, 상법, 민사집행법과의 관계, 각 제도의 문제점 등을 연구, 분석하는 것을 목표로 한다. 이러한 법분야에 대한 이해를 돕는 강독 또는 문제를 통해하는 세미나 형식의 강좌이다.

This seminar aims at an advanced understanding of insolvency law, such as bankruptcy act, corporate reorganization act, and conciliation act. Students are expected to research the relationship between these institutions themselves, and also between them and execution of judgments. Students will generally be expected to carefully read and translate foreign legal texts in class.

270.640 담보물권법연구 3-3-0
Studies in Law of Secured Property

본 강좌는 유치권, 절권, 장권이라는 담보물권만을 대상으로 다시 소주제별로 분류한 후 이를 집중적으로 연구하고 발표하는 세미나형식의 강좌이다.

This seminar is designed to study specific issues in the law of pledge, lien, and mortgage. Each student is expected to make a presentation to fellow students.

270.642 독일법연구 3-3-0
Studies in German Private Law

본 강좌는 독일법법에 있어서 계약, 불법행위, 물권, 가족⋅상속, 사법사에 관하여 분야별로 탐구하는 것을 대상으로 한다.

This course aims to further an understanding of German law and civil procedure through a comparison with the laws of other countries. We will conduct a comparative study on foreign institutions of civil procedure, especially those of German, Anglo-American, French, and Islamic legal traditions. The legal systems of Asia and North Korea will also be areas of research. This course may alternatively focus on a comparative study of procedures in other areas of law, such as administrative litigation, patent litigation, and
litigations in domestic relations.

270.646
강제집행법판례연구  3-3-0

Case Studies in Law of Enforcement of Judgment

이 과목은 민사집행법에 관한 판례를 통하여 강제집행에서 현실적으로 일어나는 문제들에 관하여 이해하도록 하는 것을 목표로 한다. 강제집행 분야의 주요 판례를 선정하여 평석하는 세미나 형식의 강의이다.

This seminar aims to develop an understanding of concrete issues in executing judgments by analyzing important cases in this area.

270.647
국제민사소송법연구  3-3-0

Studies in International Civil Procedure

이 과목은 외국의 법에서 생기는 국제민사소송에서 발생하는 여러 문제들을 이해하고 연구하는 것을 목표로 한다. 이러한 문제들을 이해하는 강독 또는 검토하는 세미나 형식의 강의이다.

This seminar deals with various issues in international civil litigations. Students will be expected to translate assigned readings in class. Important issues will be the subject of class discussions.

270.648
재판의불법해결절차연구  3-3-0

Studies in Alternative Dispute Resolution

중재, 조정, 화해 등 법원의 재판을 통하지 않은 분쟁해결방법을 이해하고 그들의 운용성, 장·단점, 개선방안 등을 연구, 검토하는 것을 목표로 한다. 각 분쟁해결절차에 관한 강독 또는 세미나 형식의 강의이다.

This is a seminar that aims to develop an understanding of alternative dispute resolution mechanisms, such as arbitrations, mediation, and reconciliation. Students will be expected to evaluate the functions and relative merits of each ADR mechanism, and propose improvements for each mechanism.

270.649
가사소송법연구  3-3-0

Studies in Domestic Relations Adjudication Law

본 강좌는 가사소송절차, 특히 이혼절차, 상속절차 등에 관하여 탐구하는 것을 내용으로 한다. This course concerns procedural aspects of domestic relations, especially issues regarding divorce and succession.

270.717
국제소백상정먼위연구  3-3-0

Topics in Conflict of Laws

본 강좌는 국제법을 분야별로 나누어 집중적으로 탐구하는 것을 내용으로 하는 과목이다. 가령 국제사법법, 국제사법법의 일반 원칙, 통관·채권·상속의 준거법, 어음수표의 준거법, 국제민사소송절차 등에 관하여 탐구한다.

This course aims at an advanced study of sub-divided issues in private international law, focusing on the history of private international law, general principles of private international law, international civil procedure, and choice of law in properties, obligations, successions and commercial instruments.

M2172.000100
의료법연구  3-3-0

Study of Health Law

270.549
과학기술과 법연구  3-3-0

Science, Technology and Law

과학기술의 잘못된 사용을 규제하고, 과학기술의 발전을 촉진하기 위한 법 제도를 연구한다. 과학기술의 보호근거법, 생명공학기술, 에너지와 환경, 의약기술 등으로 분류하고 이들 개별 기술과 법과의 관계를 각 기술의 특성에 따라 강의한다.

The purpose of this course is to study effective legal systems to encourage the development of science and technology and prevent the misuse of them. The relationship between technology and law will be lectured in the light of the characteristics of each technology, eg. information and telecommunications, biotechnology, energy and environment, and medicine.

270.651
상법기본연구  3-3-0

Principles of Commercial Law

이 수업은 상법분야 전체에 관한 기본이론을 보다 심층적으로 탐구하는 것을 목적으로 한다.

This is an advanced level course that examines various principal legal theories in the field of commercial law.

270.652
회사법연구  3-3-0

Studies in Corporations

이 수업은 회사법의 주요내용과 기업 조직 및 활동과 관련된 회사 이해관계자들 간의 이해충돌을 합리적으로 조정하는 방법을 모색하는 것을 목적으로 한다. 이 수업은 구체적으로 회사법이 체제하고 있는 개념과 다양한 이해정구를 전면에 토론방식으로 진행된다.

This seminar is intended to provide students with the fundamentals of corporation law and generate interest on conflict resolution between corporate constituency. We will concentrate on practical fundamentals that underlie in the modern business world. We will also discuss the practice of corporation law, and the concepts and tools that address the relationship between theory and practices.

270.654
보험법연구  3-3-0

Studies in Insurance

이 수업은 보험계약의 특성을 중심으로 보험법의 기본이념, 손해보험, 졸 보험의 법리관계, 보험사의 및 국가감독 등 전반적으로 탐구하여 요소별로 연구하다.

This seminar is a basic study on the law of insurance. We will focus on the fundamentals of life insurance and non-life insurance. Topics to be covered include, insurable interest, risk, insurer defensen, recovery, subrogation, reinsurance, assignment supervision, insurance practice and litigation, and industry organization.
270.656 Topics in Commercial Law

This course is an advanced level course that studies certain specialized areas in commercial law such as financial regulation, financial transactions and transportation. In the case of transportation law, the process of selling, payment, shipping, storage, financing sales, and leasing of goods and similar matters will be discussed.

270.657 Topics in Corporations

This seminar develops and applies the students’ knowledge of corporate and securities law in the solution of a series of transactional problems involving typical steps in business formation and rearrangement, the purchase and sale of a business, mergers, tender offers, and other types of combination transactions. Small-group discussions and lectures will be encouraged.

270.659A Topics in Insurance Law

This course is a comparative study of commercial transactions and commercial disputes, focusing on the comparison of the Anglo-American and the Continental Legal system. The course is intended to study international finance law course studies legal issues arising from various types of international financial transactions. International sales and trade course studies international sale of goods, INCOTERMS, letters of credit, and CISG. International investment course studies international investment, joint venture and international corporate acquisitions.

270.661 Comparative Study of Commercial Law

This course is an advanced level course that studies certain specialized areas in commercial law such as financial regulation, financial transactions and transportation. In the case of transportation law, the process of selling, payment, shipping, storage, financing sales, and leasing of goods and similar matters will be discussed.

270.662 Studies in Law of International Business Transaction

This seminar is aimed at studying the basic legal issues on international commercial transactions. Three separate courses will study international finance, international sales and trade, international investment, respectively. International finance law course studies legal issues arising from various types of international financial transactions. International sales and trade course studies international sale of goods, INCOTERMS, letters of credit, and CISG. International investment course studies international investment, joint venture and international corporate acquisitions.

270.663 Studies in Special Commercial Law

This course is a comparative study of commercial transactions and commercial disputes, focusing on the comparison of the Anglo-American and the Continental Legal system. The course is intended to study international finance law course studies legal issues arising from various types of international financial transactions. International sales and trade course studies international sale of goods, INCOTERMS, letters of credit, and CISG. International investment course studies international investment, joint venture and international corporate acquisitions.

270.665 Studies in Securities Regulation

This course is an advanced level course that studies certain specialized areas in commercial law such as financial regulation, financial transactions and transportation. In the case of transportation law, the process of selling, payment, shipping, storage, financing sales, and leasing of goods and similar matters will be discussed.
이 과목은 법인세법상 각 사업년도의 소득으로, 이른바 세무회계에서 다루는 내용을 주제로 한다. 세부적으로는 익금과 손금의 개념과 세무회계 내지 손익의 기술사업담도라는 두 가지 주제를 다루게 된다. 회계학적 접근과의 큰 차이는 현행법을 단순히 이해하는 것이 아니라, 현행법을 내려다 볼 수 있는 입법론적 조세정책적 사각을 익히는 데에 있다.

This seminar is similar to Basic Income Taxation offered in an American law school. Since the Korean law of individual income taxation is not based on comprehensive income, almost all the issues that arise in Basic Income Taxation can be better analyzed in the context of corporate income taxation in Korea. The seminar analyzes the concept of income and tax accounting.
다(상속세와 증여세는 별도 과목). 관례를 중심으로 형법상 각종 세제, 또 그에 연관된 행정법적 규제를 공부한다.

이 강좌는 창작 및 발명의 재산에 관한 권리 즉 저작권, 상표권, 특허권, 실용신안권, 영업비밀, 의장권 등에 관한 깊은 이해를 기초로 한 강좌이다. 형제제산권에 관한 보다 깊은 이해를 기반으로 한 연구를 수행하기 위해서 매 학기마다 관련 주제를 나누어서 상세히 그 성격과 관계, 그리고 외국법률 등을 공부하게 된다. 학기간에 개설되는 주로 소재로는 특허법연구, 상표법연구, 저작권법연구, 의장법연구, 무형재산권법연구, 실용신안법연구, 법정보산업기술연구, 국제지적재산권법연구, 저작권법연구와 관련된 깊이있는 연구를 수행하기 위해서 매 학기마다 관련 주제를 나누어서 상세히 그 성격과 관계, 그리고 외국법률 등을 공부하게 된다. 학기간에 개설되는 주로 소재로는 특허법연구, 상표법연구, 저작권법연구, 의장법연구, 무형재산권법연구, 실용신안법연구, 법정보산업기술연구, 국제지적재산권법연구, 저작권법연구와 관련된 깊이있는 연구를 수행하기 위해서 매 학기마다 관련 주제를 나누어서 상세히 그 성격과 관계, 그리고 외국법률 등을 공부하게 된다.

 많은 주제에 있어서 학생은 그 주제에 대한 학문적 이해를 바탕으로 분석하고 해석하여 학문적인 논의를 한다. 본 강좌는 학기마다 개설되는 주요 주제로는 형법기본연구, 형법총론상의 주관적 구성요건, 객관적 구성요건, 법의 구속력과 관계, 그리고 확장법적 요소 등을 공부하게 된다. 학기간에 개설되는 주로 소재로는 형법기본연구, 형법총론상의 주관적 구성요건, 객관적 구성요건, 법의 구속력과 관계, 그리고 확장법적 요소 등을 공부하게 된다. 학기간에 개설되는 주로 소재로는 형법기본연구, 형법총론상의 주관적 구성요건, 객관적 구성요건, 법의 구속력과 관계, 그리고 확장법적 요소 등을 공부하게 된다. 학기간에 개설되는 주로 소재로는 형법기본연구, 형법총론상의 주관적 구성요건, 객관적 구성요건, 법의 구속력과 관계, 그리고 확장법적 요소 등을 공부하게 된다.

형법재판과(Criminal Law Major)

Principles of Criminal Law

This course provides an examination of the central principles of substantive criminal law, including mens rea, the significance of act, causation result, criminal responsibility, justification and excuse, attempt, complicity, rationale of punishment, and “preventive security measures”. It provides summaries and critical perspectives on the current criminal law theory.

270.684 형법학연구 3-3-0
Theory of Punishment

This course provides an examination of the modern theories upon which criminal punishments are based, and how such purposes are met in the criminal justice system. It is designed to examine the major forms and structures of punishment. It examines why we punish individuals, how we punish individuals, why we punish individuals, and how we punish individuals.

270.685 형사소송법기본연구 3-3-0
Principles of Criminal Procedure

This course provides an examination of the legal principles and mechanisms of the criminal process. It explores the criminal process from the initiation of criminal proceedings to trial, sentencing, and post-conviction remedies. This course focuses on the penal, constitutional and policy issues that arise in criminal cases. The purpose of this course is to have students focus on the legally challenging, constitutionally mandated requirements of the criminal justice system.

270.686 형사법판례연구 3-3-0
Case Studies in Criminal Law and Procedure

This course provides an examination of major court decisions on criminal law and procedure. It is designed to analyze the major decisions of the Supreme Court and the Constitutional Court in criminal law and procedure, and to enhance the capability of students to interpret and apply the criminal law statutes. Ground-breaking decisions and highly profiled cases are mainly reviewed.

270.687 형사증거법연구 3-3-0
Evidence

This course provides an examination of the modern theories upon which criminal punishments are based, how such purposes are met in the criminal justice system, and how we punish individuals, how we punish individuals, why we punish individuals, and how we punish individuals.
This course provides an examination of criminal evidence law. It aims at giving students a thorough understanding of the basic principles in the law of criminal evidence. Among the topics considered are the judge’s free evaluation rule, hearsay, confession rule, exclusionary rule, lay and expert opinions, impeachment of witnesses, privileges, burden of proof, presumptions, and judicial notice. Certain constitutional questions that arise in connection with evidence are considered.

**270.688** 형사정책연구 3-3-0

**Studies in Criminal Policy**

This course provides an examination of the structure and function of the criminal justice system. It reviews the philosophical background, history, constitutional limits, agencies, processes of justice, and evaluation of the current criminal justice practices. It begins by investigating the relationships between social policy, social justice, and criminal justice, then examines the structure and functions of the criminal justice system. Attention will be given to criminology theory and legal principles that guide the justice system. Police operations, criminal court procedures, and programs in corrections will be discussed, with an emphasis on contemporary problems and issues in criminal justice administration.

**270.691** 형법특수연구 3-3-0

**Topics in Criminal Law**

이하의 형사특별법을 주요 분야에서 주제를 택하여 집중적으로 이론적, 실증적 연구를 수행한다. (1) 구정요건론, (2) 위법성론, (3) 책임론, (4) 미수론, (5) 공법론, (6) 부작위범론, (7) 과실범론, (8) 최수론 등.

This course is a supervised study of selected topics in criminal law including mens rea, the significance of act, causation and result, criminal responsibility, justification and excuse, attempt, and complicity. In this course, students are requested to demonstrate the ability to integrate theory and research in the topics assigned to them.

**270.692** 비교형사법연구 3-3-0

**Comparative Study of Criminal Law**

대국가별 및 영어법계의 주요 국가의 형법과 형사소송법에 대한 비교법적 접근을 수행한다. 먼저 각국의 정치, 사회, 문화적 구조, 법적 전통, 형사법제의 구조와 가능성을 분석하고, 이에 각 국가 법제의 정의와 문화, 범죄론과 형사법론의 이론체계, 형사법의 자·피고인의 권리, 수イン의 권리 등이 어떻게 상이하게 파악하고 있는지, 그리고 그 원인은 무엇인지를 검토한다. 나아가 ‘사회체’의 형성은 각국의 형법 초형태 변환시키고 있는지를 분석한다.

This course provides an in-depth analysis of systematic differences in criminal law, criminal procedure, and sentencing in different countries. It reviews topics such as legal tradition, political structures, legal transplants, as well as social and cultural institutions on one hand, and the comparative legal analysis of criminal law and procedure on the other. It focuses on a few select topics of comparative analysis, especially how different legal systems have addressed issues of crime, including the definition of offenses, the processing of suspected offenders prior to trial and at trial, and the treatment of convicted criminals. It also considers the impact of global integration has had on the problems and solutions these legal systems offer.

**270.696** 범죄사회학연구 3-3-0

**Criminal Sociology**

범죄와 일탈행동의 본성을 사회학적 관점에서 검토하는 데, 특정한 행동을 범죄 또는 일탈행동이라고 규정하는 사회와 그러한 행동 자체에 대한 분석에 초점을 맞춘다. 범죄와 일탈행동에 대한 다양한 범죄사회학 이론의 문제의식과 논리를 검토한 후, 자살, 폭력, 포괄적 범죄, 화이트칼라 범죄, 여성범죄 등의 분석과 관련된 문제를 다룬다.

This course examines the nature of crime and deviance in society. It sheds light both on the society which labels certain behaviors, or people, as being criminal or deviant, as well as on giving a greater understanding of the behaviors themselves. It reviews various sociological theories of crime and deviance which help explain the ways societies define crime and deviance and attempt to deal with them. It illustrates the theoretical perspectives using examples such as suicide, mental illness, violent behaviour, and white collar crime. It also considers the impact of gendered relations on crime and justice. Theories of gender and society are presented and the special relationship between gender and crime is studied.
This course provides an examination of tax crime in the Act for Punishment of Tax Criminals. First, the course reviews the types and features of tax crimes under the Act for Punishment of Tax Criminals. Second, it explores whether or not the principles and provisions of the Penal Code may apply to administrative crimes. Third, it examines the procedure of administrative crimes. Main highlights include Mens Rea and criminal evidence law, including the judge's free evaluation rule, hearsay, confession rule, exclusionary rule, lay and expert opinions, impeachment of witnesses, privileges, burden of proof, presumptions, and judicial notice.

This course is a supervised study of selected topics in the field of criminal policy and criminal justice. Topics include violent crimes and offenders, victimology and victims, rights movements, organized crime, white collar crime, political corruption, consensual and non-consensual sexual offenses, and public order crimes such as gambling, illicit drug use, prostitution, vagrancy, and disorderly conduct.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>270.724</td>
<td>Law of Administrative Litigation</td>
<td>3-3-0</td>
<td>This course is a supervised seminar on administrative litigation. The topics include the types of administrative litigations, the availability and timing of judicial review, judicial stay of administrative action pending review, grants of interim relief, and the effects of judicial remedies.</td>
</tr>
<tr>
<td>270.725</td>
<td>Law of Administrative Execution</td>
<td>3-3-0</td>
<td>This course examines selected topics on administrative enforcement law.</td>
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<tr>
<td>270.726</td>
<td>Law of Administrative Compensation</td>
<td>3-3-0</td>
<td>This course is a supervised study of selected topics on the state's liability for compensation. The topics include compensation for expropriation, compulsory purchase, nuisance and disturbance, and planning restrictions.</td>
</tr>
<tr>
<td>270.727</td>
<td>Topics in Administrative Law</td>
<td>3-3-0</td>
<td>This course is a supervised study of selected topics on administrative law. The lecturer will announce the specific topics at the beginning of each semester.</td>
</tr>
<tr>
<td>270.728</td>
<td>Case Studies in Administrative Law</td>
<td>3-3-0</td>
<td>This course is designed to analyze the major decisions of the Administrative Court, the Supreme Court and the Constitutional Court in administrative law, and to understand how the judicial decision making and administrative law theories interact in individual cases. Ground-breaking decisions and highly profiled cases are mainly reviewed.</td>
</tr>
<tr>
<td>270.729</td>
<td>Comparative Study of Administrative Law</td>
<td>3-3-0</td>
<td>This course compares administrative law and procedure of different countries. Germany, Great Britain, the European Union, France, Japan, and the United States will be the main countries subject to comparison. It reviews, on one hand, the historical background of the developments of administrative law, and the differences depending on legal tradition. On the other hand, it reviews how the increased international interaction affects national administrative law.</td>
</tr>
<tr>
<td>270.730</td>
<td>Law of Welfare Administration</td>
<td>3-3-0</td>
<td>This course examines the basic principles of modern welfare administration. The topics include public utilities, public facilities, public enterprises, social security services, and social insurance policies. It also reviews the recent development of the alternative forms of public services, for example, outsourcing and privatization.</td>
</tr>
<tr>
<td>270.731</td>
<td>Law of Regulatory Administration</td>
<td>3-3-0</td>
<td>This course examines the current law and legal principles of economic regulatory administration. The topics include the relationships between government regulation and economic self-autonomy, legal control of regulatory discretion, and the legal meaning of the “efficiency” standard.</td>
</tr>
<tr>
<td>270.732</td>
<td>Topics in Administrative Remedies</td>
<td>3-3-0</td>
<td>This course is a supervised study of selected topics on various types of administrative law remedies for a citizen injured by administrative action (or inaction). The topics include the liabilities (in tort, in contract, to make restitution, or to pay compensation) of public authorities and the judicial review of administrative decisions.</td>
</tr>
</tbody>
</table>
지방자치법연구 3-3-0
Studies in Local Government Law

지방자치단체의 조직과 사무, 지방자치단체와 주민과의 관계, 지방자치단체와 국가와의 관계, 지방자치단체 상호간의 관계 등을 이론과 현실의 양 측면에서 검토한다.

Law of Public Finance

자신의 기본원리, 재정권력작용(재정청, 허가, 면제, 강제, 재정정지 등)과 재정관리작용, 조세행정관련제도, 전세제도, 예산회계 제도, 국유재산관리 등을 검토한다.

Law of Land Use and Administration

지방자치단체의 조직과 사무, 지방자치단체와 주민과의 관계, 지방자치단체와 국가와의 관계, 지방자치단체 상호간의 관계 등을 이론과 현실의 양 측면에서 검토한다.

Law of State Responsibility

지방자치단체의 조직과 사무, 지방자치단체와 주민과의 관계, 지방자치단체와 국가와의 관계, 지방자치단체 상호간의 관계 등을 이론과 현실의 양 측면에서 검토한다.

Law of International Organization

지방자치단체의 조직과 사무, 지방자치단체와 주민과의 관계, 지방자치단체와 국가와의 관계, 지방자치단체 상호간의 관계 등을 이론과 현실의 양 측면에서 검토한다.

Law of Treaties

지방자치단체의 조직과 사무, 지방자치단체와 주민과의 관계, 지방자치단체와 국가와의 관계, 지방자치단체 상호간의 관계 등을 이론과 현실의 양 측면에서 검토한다.
the conclusion of treaties, their validity and effect, interpretation, application, termination, and their relation to domestic law are examined. It also examines rules and cases concerning treaties between states and international organizations.

270.748 국제거래법연구 3-3-0

Law of International Transactions

국제간의 상거래와 관련된 법률적 현상을 전반적으로 연구하는 과목이다. 세부적으로는 국제무역거래법, 국제계약법, 국제Banking 위법, 국제거래관련자들 등을 학기마다 구분하여 학습한다.

This course will examine trans-national, litigational and regulatory issues faced by international businesses. Main subjects will be international trade, international contract problems, international investments, cross-border financing, international law of torts, international joint ventures, and dispute settlement in international business. The lecturer will select the main topics of each semester.

270.750 외교관계법연구 3-3-0

Law of Diplomatic Relations

외교사절제도에 관한 내용을 중심으로 연구하는 과목이다. 외교사절제도의 역사, 외교사절의 권한, 면제 등을 학습한다. 아울러 영사제도와 국제기구에 파견되는 외교사절과 관련된 법적 문제도 학습한다.

This course will examine legal issues relevant to the diplomatic missions and consular missions. The Vienna Convention on Diplomatic Relations, the Vienna Convention on Consular Relations, the Convention on Special Missions and the Vienna Convention on the Representation of States in their Relations with International Organizations of a Universal Character are the main legal instruments for the study of this course.

270.751 국제재판연구 3-3-0

International Litigation

국제벌의 해결제도의 하나로서 국제재판관에 관한 전반적 내용을 학습한다. 사법재판관에 관한 내용이 중심이 되는 학기이고, 중재 재판관이 중심이 되는 학기도 있다. 사법재판관의 경우 국제사법재판소의 조직 원리와 재판절차가 중심이 된다.

This course will consider the role and function of international courts and tribunals. It will address the following aspects: the appointment and role of judges; issues of access including jurisdiction; rules of procedures and evidence; method of remedies, etc. The emphasis will be upon either the International Court of Justice or arbitration, depending on the semester. The lecturer will select the main topics of each semester.

270.754 국제법사연구 3-3-0

History of International Law

이 과목에서는 근대 국제법의 발달 역사를 강의한다. 주제의 특성상 서유럽에서의 근대 국제법의 발달과정이나 국제법 이론의 사상적 발달과정을 강의하는 경우가 중심이 될 것이다. 동양 내지 한국에서의 사상국제법, 도입과정, 그리고 현재의 국제법의 원칙의 발달과 적응을 강의하기도 한다.

This course will provide an overview of how to deal with criminal activities by individuals, groups, corporations or States. The Rome Statute for the International Criminal Court will be the main focus of this course. Also, cases in the International Tribunal for the Former Yugoslavia and the International Tribunal for Rwanda will be emphasized.
대학원(Graduate School)

법학과(Dept. of Law)

립인합에 관한 문제가 된 것이다. 경우에 따라서는 복미자유무리
세대의 조치와 운영원리이나 지역국제법 공통의 일반 원리를 중심으
로 강의하기도 한다.

This course will examine the structure, role and function of
regional organizations, including the European Union and
the NAFTA, and common legal issues concerning regional
organizations. The lecturer will select the main topics of
each semester.

270.762A 해양법연구 3-3-0

Law of the Sea

해양법 중에서도 특히 주제 또는 최근 발생한 중요한 개별사건,
최근 내린 해양법 관련 중요문건에 관한 내용 등을 집중적으로
취급한다. 학기별로 중점을 두는 취급 주제는 담당강사가 선정한다.

This course will examine special topics in international
maritime law. The main subjects of this course include the
recent juridical decisions at the International Tribunal for
maritime law and at the domestic courts in major maritime
states, and legal issues relating to the Republic of Korea.
The main topic will be different in each semester.

270.763 국제경제법연구 3-3-0

International Economic Law

국제경제의 기조와 관련된 주요 공법적 측면을 연구하는 과목
이다. 그 세부내용으로는 국제경제법 일반론, WTO법, 무역
 및 경제정책, 다국적 기업운영, 환경오염문제, 산업정부국제체
도, 미국 통상법, 국제금융기구법 등으로 구분될 수 있다.

This course examines the aspects of international economic
transactions related to public law. Major subjects of this
course are: the general theory of international economic law,
the World Trade Organization, trade and environmental pro-
tection, trade and competition policies, trans-national corp-
orations, trade friction, import relief measures, U.S. trade law,
and international financial institutions. The lecturer will select
the main topics of each semester.

270.765 국제민법연구 3-3-0

International Humanitarian Law

본 과목에서는 국제인도법의 일반론, WTO법, 무역
 및 경제정책, 다국적 기업운영, 환경오염문제, 산업정부국제체
도, 미국 통상법, 국제금융기구법 등으로 구분될 수 있다.

This course will examine various legal aspects pertaining
to jurisdictional issues raised during transactions of states in
the international community. Main topics are: the principle of
domestic jurisdiction, the principle of criminal jurisdiction
and its related cases, extraterritorial jurisdiction, extradition,
and immunities from jurisdiction.

270.766 국제환경법연구 3-3-0

International Environmental Law

본 과목에서는 현재 국제사회에서의 주요 화두인 환경의 국제
적 보호에 관한 전반적인 내용을 공부한다. 국제환경법의 기반원
리, 현재 발효중인 주요 국제환경관련 조약의 내용, 환경관련 국제
문서 해양발생 및 사례 등에 관하여 중점적으로 연구한다.

This course analyzes international law applicable to envi-
ronmental and natural resource issues affecting more than
one country. This course covers the control of air and water
pollution, environmental disasters, disposal of hazardous
wastes, ozone depletion, climate change, environmental pro-
tection and its relation with economic development, and the
issue of biological diversity.

270.767 국제조세법연구 3-3-0

International Taxation

본 과목에서는 국제간의 조세무대와 관련된 전반적 내용을 공
부한다. 세부적으로는 국제조세 일반론, 조세조약연구, 국제조세
회피제도 등으로 구분하여 강의가 진행된다.

This course will examine in detail the basic principles of
international taxation. It tries to identify the core issues in
developing international tax rules, and study the different ap-
proaches countries have taken in dealing with these issues.
Topics covered in this course are: basic theory of interna-
tional taxation, jurisdiction for taxation, methods of interna-
tional double tax relief, basic operation of double tax trea-
ties, and international issues in tax administration. The lec-
turer will select the main topics of each semester.

270.768 국가관할권연구 3-3-0

Studies in State Jurisdiction

본 과목에서는 국제사회의에서 국가의 관할권 행사의 근거와 그
제한에 대하여 공부하며. 특히적으로는 국가관할권 행사의 근거
종류 및 국가의 관할권 행사로부터 면제되는 경우와 관련된 법령상
을 공부하며. 관련 이론은 물론 국제재판소에서의 관할을 포함하
며, 주요 국가의 국내관할권도 공부한다.

This course will examine various legal aspects pertaining
to jurisdictional issues raised during transactions of states in
the international community. Main topics are: the principle of
domestic jurisdiction, the principle of criminal jurisdiction
and its related cases, extraterritorial jurisdiction, extradition,
and immunities from jurisdiction.

270.769 국가승계연구 3-3-0

Studies in Law of State Succession

일정 지역에 관한 국가주권에 관한 문제에 따라 발생하는 각종 법
령을 종합적으로 연구하는 과목이다. 국가 주권 변경의 경우 태
양, 국가의 재판과 재판의 분배 및 이전, 주민의 국적 변경, 기존
조약의 처리방법 등이 주요내용이 된다. 이 문제는 남북통일 이후
바로 우리가 처리하여야 할 주제가 된다.

The issue of state succession in international law is partic-
ularly complex. Many of rules have developed in specific re-
sponse to particular political changes. Main subjects of this
course are: general theory of state succession, succession to
treaties, succession to assets and debts, succession and na-
tionality, and succession of membership of international orga-
nizations. This course has practical implication for the prepa-
ratiow of the unification of the Korean peninsula.

270.881 국제투자법 일반론 3-3-0

International Investment Law

본 과목에서는 국제투자분야에서는 투자자와 국가 간의 무의를 둘러싼 분
쟁이 증가하고 있다. 이 과목은 국제투자분쟁에 적용되는 실제법적
In recent years, the number of disputes between foreign investors and the host States are on the increasing trend. This class will focus on both substantive rules and procedural rules applying to the investor-States disputes.

Studies in Investment Treaty Arbitration cases

This course aims at research on the basic theories of the labor law through its interpretation, legislation, and cases. The basic arguments and trends of cases under domestic and foreign legal systems will be the main objects of research. Various legal methods including the legal-historic method, legal-societical method, and comparative legal method will be performed according to the topic concerned.
270.786 Comparative Study of Social Security Law

This course aims at a critical investigation of the latest cases in foreign social security laws, comparison with Korean social security laws, and actual applications, the latest issues in foreign social security laws, comparison, and study of collective bargaining will also be researched.

270.787 Comparative Study of Social Security Law

This course will study antitrust laws, whose purpose is to maintain free and fair competition among market participants. Students will focus on the economic laws of each nation's economic laws and industrial environments standing of the entire economic legal principles by studying economic laws that organize, in a reasonable manner, market economies created by free and fair competition among market participants. The central objective of the course is to examine, from the perspective of economic laws, the significance of laws concerning the regulation of monopolies and fair transactions and the process by which economic laws have been formed into a single legal system.

270.788 Case Studies in Social Security Law

This course will examine the practical functions and problems of economic laws by focusing on specific cases concerning the main areas of economic laws (i.e., Monopoly Regulation Law, Small and Medium Enterprise Law, Consumer Protection Law, Price Control Law, and laws regulating individual industries).

270.789 Comparative Study of Economic Law

The purpose of this course is to advance students' understanding of the entire economic legal principles by studying each nation's economic laws and industrial environments comparatively. Students will focus on the economic laws of the EU, US, and other nations and, consider their current application in various Asian countries.

270.790 Topics in Labor-Management Council

The study of labor-management joint council will be widely performed, with a focus on the grounds of democracy in the workplace. The grievances settlement system, business participation system, theory of joint ownership of information, and study of collective bargaining will also be researched.

270.791 Anti-trust Law

This course will study antitrust laws, whose purpose is to maintain free and fair competition among market participants. The basic principles of antitrust laws will be examined and improvements for Korea antitrust laws will be considered. In addition, the major cases decided by the Korea Fair Trade Commission and courts under the antitrust law will be reviewed.
대학원(Graduate School)  

270.795 법경제학특수연구  3-3-0  
Special Topics in Law and Economics

경제현상을 규제하는 법규범이 경제적 효율성(economic efficiency)과 형평(equity)을 실현하기 위하여 어떤 방향으로 제정되고 해석되어야 하는가라는 소위 법경제학적 기본과제의 연구를 목적으로 한다.

This course will examine the primary issues regarding the ways in which laws regulating economic phenomena should be enacted and interpreted so as to facilitate economic efficiency and equity.

270.796 노사관계론  3-3-0  
Industrial and labor Relations

270.798 국제노동법연구  3-3-0  
Studies in International Labour Law

노동법의 국제적 기준에 관한 ILO조약 및 권고와 각국의 노동 법률을 중심으로 연구한다. 외국인근로자 문제나 최저기준의 국제적 수준 등과 같은 공통적 관심사가 대상으로 포함되며 국내법 전시 중에서의 적용가능성 문제 역시 검토된 것이다.

Legal criteria suggested by international labor laws, especially the ILO Convention and recommendations, will be the main topics of this course. Issues common to the global community such as foreign workers and international limitations on minimum standards can also be included.

270.799 소비자보호법연구  3-3-0  
Studies in Consumer Law

시장경제를 형성하는 하나의 활동주체로서 소비자의 기본적인 권리와 소비자보호의 필요성을 논의한다. 구체적으로 소비자 주권 개념 아래서 소비자 선택권의 보장과 소비자의 합리적인 선택가능성을 확보하기 위한 제도를 살펴보고 기타 소비자 보호를 위한 관련 법률들의 실제 적용상 문제점과 개선방향을 검토한다.

In this course, students will discuss consumers' major rights and the legal protection methods necessary for consumers, who oppose businesses in a market economy. Under the concept of consumer sovereignty, the legal systems that guarantee the existence of consumers' right to choose and the availability of their reasonable choices will be examined. Actual problems that occur in the process of executing other consumer protection legislations and plans for their reform will also be discussed.

270.800 농업법연구  3-3-0  
Studies in Law of Agriculture

농업기반 육성과 보호를 위한 기본법인 농업법 전반을 검토한다. 특히 농민보호제도의 일종인 농업협동조합제도와 농산품의 유통량 개선을 위한 기타제도를 살펴본다.

In this course, students will review laws regarding agriculture, which aim at supporting and protecting the agricultural industry. Emphasis will be placed on the farmers' cooperative, an organ for cooperation among farmers, and other organizations for improving the distribution of agricultural products.

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The course introduces the students to the basic structure and implications of legal relationships surrounding Licensing contracts, which promotes the lawful utilization of intellectual property. Also considered will be the strategic alternatives available for the parties in question, i.e., the holders and users of intellectual property.

**2751.508 ITC소송전략 3-3-0**

**Strategies in ITC Litigation**

This course explores various legal strategies taken by patent holders, for the purpose of maximizing the value of the patent rights, in every phase of the dispute settling process. Especially, this course pursues complexities of the US International Trade Commission procedures and help students understand and simulate possible best strategies.

**2751.509 국제특허소송전략 3-3-0**

**Strategies for International Patent Litigations**

This course explores various legal strategies taken by patent holders, for the purpose of maximizing the value of the patent rights, in every phase of the dispute settling process. Especially, given the fact that patent disputes arise internationally, this course is focused on the best possible strategies and solutions for international patent disputes.
poses of expanding its value and profits. From the perspective of profit maximization, this course covers governance structure, R&D management and other technical and clerical issues as well.

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<td>2751_512</td>
<td>지적재산 사업화</td>
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**Commercialization of Intellectual Property**

이 과목은 지식재산을 보유한 정부, 기업 등이 그 가치 및 이용의 극대화를 위하여 기술 등의 지식재산을 어떠한 방식으로 활용, 관리할 것인지에 관하여 경영적 차원에서 접근하는 강의이다.

This course introduces the students to the business approaches (of corporations and the government as the right-holders) to the use and management of intellectual property (technology, etc.) for the purposes of expanding its value and maximizing profit.
사범대 학
College of Education
교육과정(Courses for Teachers-Training Program)

T1831.000400 교육심리 2-2-0

Educational Psychology

본 교과목은 예비교사들이 갖추어야 할 교육심리학 지식과 이 를 바탕으로 한 교수-학습과정에 대한 이해를 형성하도록 하는 데 그 목적이 있다. 본 교과목에서는 인지발달, 정서발달, 학습이론, 지능, 특수아동, 학습지능, 평가에 대한 내용들이 교육현장에서의 적용을 중심으로 다루어진다.

This course is intended to equip pre-service teachers with knowledge of Educational Psychology and to develop pre-service teachers’ understanding of teaching-learning processes. Practical implications of various theories of Educational Psychology are dealt in depth, including cognitive development, affective development, learning theories, intelligence, students with special needs, learning motivation, and evaluation.

T1831.000500 교육철학 및 교육사 2-2-0

Philosophy and History of Education

이 교과는 교육철학과 교육사를 통합한 입문 과정으로서 교직 과정의 한 과목이다. 이 교과는 교육학의 기본적인 개념과 이론적 · 실제적 맥락에 대한 철학적 분석의 성과를 다루며, 또한 교육사 의 주요 변화와 흐름에 대한 기본적인 이해를 수용한다.

This is an introductory course on the history and philosophy of education, which is a prerequisite subject to get teacher qualification certificate. This course deals with philosophical analysis on the basic concepts and theoretical · practical problems of education, and includes various approaches to understand the main trends of the in the history of education.

T1831.000600 교육과정 2-2-0

Curriculum

이 강좌는 교육과정의 기초와 원리에 대한 종합적인 이해를 제공하고, 교사들이 학교수준에서 교육과정을 개발하고 실천할 때 제공될 수 있는 쟁점을 다룬다. 이 강좌는 또한 국가교육과정에서 강조하는 창의적 체험활동과 진로교육에 대한 이해를 포함한다.

This course provides comprehensive understanding of foundational and principles of curriculum, and deals with issues that could be raised when teachers develop and practice curriculum at school level. The course also includes understanding of creative experiential activities and career education emphasized in national curriculum.

T1831.000700 교육평가 2-2-0

Educational Evaluation

본 강좌에서는 교육평가의 일반 원리와 학교학습의 맥락 속에 서 교육평가가 가지는 의미와 역할, 교육평가의 실제를 다룬다. 이 를 통하여 학생들은 교육평가에 대한 통찰력을 함양하고 현장 교육과정계를 이해할 수 있을 뿐만 아니라, 과정중심 평가기법의 실제를 접하고 교육과정계에 적용할 수 있는 평가능력과 평가기법, 평가문항 개발의 실제 및 적용방법을 터득할 수 있을 것이다.

This course will focus on the understanding general principles of educational evaluation and the appropriate types of evaluation in the context of school learning. The goal of this course is to allow students to have a perspective on educational evaluation and to understand current educational evaluation system. The course also includes process-focused assessment and development and feedback of test items.

T1831.000800 생활지도 및 상담 2-2-0

Guidance and Counseling

학교 장면에서 학생들의 인성교육 및 문제해결을 위한 상담과 생활지도의 기초개념, 주요 원리, 주요 활동과 기법을 고찰하고 그 것이 가지고 있는 이론적, 실천적 함의를 다룬다. 특히 이 교과에 서는 상담이론과 상담의 설립과 기법을 다루어 교육적 대화 를 통해 인간 문제 해결에 필요한 이론의 기초를 제공하는데 중점을 둔다. 또한 아동 · 청소년 대상 상담의 예의 및 신고의무와 관련한 교육을 통해 학교에서 과정의 대상 상담과의 예의 및 대처 능력을 기른다.

This course examines the concepts and principles of guidance and counseling, discusses their theoretical and practical implications. In particular, in this course the theories, practical procedure and techniques of counseling will be included to strengthen the theoretical basics for solving problems by educational communication. This course also presents the prevention knowledge of sexual abuse and harassment against children and adolescents and the duty to report. It will develop Student Teachers’ ability to prevent and cope with sexual abuse and harassment against students in schools.

T2184.001600 교육학개론 2-2-0

Introduction to the Study of Education

교과이론으로서 교육의 개념과 목적에 관한 사상과 이론을 검토하고, 제도교육의 실상에 관한 구체적이고도 체계적인 안목을 제공한다.

This course discusses the concepts and purposes of education. It also covers current status of educational systems.

T2184.001700 교육행정 및 교육경영 2-2-0

Educational Administration and School Management

현직 교사가 되기 위하여 필요한 교육행정 및 학교경영 등에 필요한 기본적인 이론 및 실제를 소개하는 교과이다. 교사가 되기 위한 학생들에게 실질적인 도움이 될 수 있도록, 교육행정에 관한 영역뿐만 아니라, 학교 및 학교경영에도 많은 시간을 할애한다.

This course will cover basic theories and practices in administration and management for future teachers. Compared to “Introduction to Educational Administration” course, this course will focus on school and class management as well as the classical educational administration theories.

T2184.001800 교육법법 및 교육공학 2-2-0

Teaching Methods and Educational Technology

학교 현장에서의 교수·학습 이론과 실제를 다룬다. 특히, 교수 체제설계, 교수설계이론, 교육기자재 및 매체의 교육적 활용, 교육용 소프트웨어를 비롯한 정보통신기술의 교육적 활용 등 실질적인 지식과 기술에 대한 이해와 확립에 초점을 맞춘다. 이를 통하여 다양한 교수·학습 방법을 적용한 교사 수업과 실제 교육현장 과 말단 관련이 있는 교육법법을 이해할 수 있다.

학점구조는 "학점수-주당 강의시간-주당 실습시간"을 표시한다. 한 학기로 구성됨. (The first number means "credits"; the second number means "lecture hours" per week; and the final number means "laboratory hours" per week. 15 weeks make one semester.)
대학원(Graduate School)

교직과정(Courses for Teachers-Training Program)

This course targets pre-service teacher students and is an introduction to educational technology. Course topics include a brief introduction, domains as well as trends and issues of educational technology; relating theories; teaching and learning methods; instructional technology use and development in school settings.

교직소양영역(Grounding)

T1831.000900 특수교육학개론 2-2-0

Education for Students with Special Needs

학교는 모든 아동들의 존엄성을 지켜주고, 학습권을 보장해줄 수 있어야 한다. 특히, 특수한 교육적 요구를 저닌 아동은 장애이 동 뿐만 아니라 영재성을 가지고 있는 학생들을 포괄하며, 특수교 육은 대상 아동들의 독특한 교육적 요구를 만족시키기 위해 특별 하게 계획된 교육이다. 이러한 특수교육 대상 아동들은 많은 시간 을 일반학급에서 교육 받고 있기 때문에 특수학교사와 같은 일반교 사도 특수교육 대상 아동에 대해 이해하고, 특수교육을 위한 준비 가 되어야만 한다. 이 강좌는 예비교사들이 전반적인 특수교 육 및 통합교육을 이해하고, 각기 다른 특수교육 대상 아동들의 특성 및 교수 방법에 대해서 스스로 학습할 수 있도록 진행된다. 뿐만 아니라, 다양한 교육전략 및 협력 모형 등을 제시하여 실제 적인 교육 환경에서의 적용을 도모하였으며, 대표적인 교육 사례 를 들어 예비교사들의 이해를 돕는다.

All students require support from teachers, classmates, family, and friends in order to thrive and to gain full benefit from their school experience. Some students (both the handicapped and the gifted) have special needs that require supports beyond those ordinarily received in the school setting. This course provides some of the most comprehensive coverage of the characteristics of learners with special needs, as well as some of the latest assistive technologies. This is a course that is comprehensive but deliberately concise so that the learners can quickly translate the theories of effective teaching and special education into practical inclusive classroom strategies.

T1831.001000 학교폭력예방 및 학생의 이해 2-2-0

Understanding School Violence Prevention and Students’ Developmental Characteristic

이 강좌의 목적은 예비교사들이 최근 사회적 문제가 되고 있는 학교폭력에 대해 이해하고, 이를 사전예방하기 위한 조치 및 사후 학교폭력 문제를 해결하는 데 필요한 규정과 절차를 이해하는 데 있다. 인성교육, 학생생활문화, 학생성적행동발달, 학생생활지도 등 아동·청소년 발달과 관련된 중요한 이슈 또한 다룬 예정이다. 이 를 위해 이 강좌에서는 학교폭력 및 아동·청소년 발달에 대한 개념적 이해뿐만 아니라, 실제 사례들을 중심으로 학교폭력과 기 타 문제들을 예방하고 문제 발생 시 효과적으로 조치할 수 있는 다양한 방법에 대해 알도록 한다. 이 강좌에서는 아동·청소년을 대상으로 한 성범죄를 예방하고 신고하는 정제에 대한 내용도 포 함한다.

This course has two purposes. First, this course is intended to have pre-service teachers to understand what school violence is and rules and procedures that they have to follow to resolve the violence in school. Second, understanding the issues about character education, students’ culture, adolescents’ emotional-behavioral development characteristics, and guidance is another aim for this course.

In this course, not only conceptual understanding on school violence and children/adolescents’ development characteristics, but also practical knowledges that are required for pre-service teachers to prevent and solve school violence and other problems in school will be dealt intensively with various cases. This course also help pre-service teachers to understand the actions to prevent and report sexual violence against children/adolescents.

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Empirical Research Methods

This course offers a comprehensive review of empirical research methods, mainly in the field of education. It focuses on the logic of research, formulation of research problems, research methods, and to examine the possibilities and limits of ethnographic research. Students are expected to plan and accomplish an ethnographic search. Students are evaluated on a Pass/Fail basis.

Field Based Research and Qualitative Analysis

This course provides comparative analyses of educational phenomena on the national or social level. It also focuses on the common features and differences of each nation’s education. It aims at fostering understanding and applying various multivariate statistical methods. It covers hierarchical linear models, structural equation modeling as well as MANOVA, discriminant analysis, factor analysis, and canonical correlation.

Dissertation Research

This course is designed to help graduate students prepare their own thesis through regular tutorial sessions with academic advisors. Themes, topics, texts and formats of the course will vary according to individual students. Students prepare their own thesis through regular tutorial sessions.

Seminar in Ethnography of Education

This is an intensive course designed to help graduate students prepare their own thesis through regular tutorial sessions with academic advisors. Themes, topics, texts and formats of the course will vary according to individual students. Students prepare their own thesis through regular tutorial sessions.
### 701.916 교육통계분석론  3-3-0

**Advanced Statistical Method for Educational Research**

이 강좌는 교육연구에 필요한 통계적 분석에 대한 개념과 이론을 제공하기 위한 것이다. 이를 위해 교육관련 각종 자료의 유형을 살펴보고 이를 분석하는 데 필요한 여러 통계적 기법들을 살펴보게 될 것이다. 아울러 수강생들은 통계적 기법을 활용하여 교육관련 자료들을 실제로 분석하게 될 것이다.

This course addresses basic concepts and theories about statistical methods for educational research. It focuses on various statistical methods commonly used in educational research.

### 701.956 구술사  3-3-0

**Oral History**

구술사 연구와 관련 역사 이론 탐구와 방법론 훈련을 병행하여 운영한다. 구술사 방법을 사용하여 교육사 연구 과제를 수행할 수 있는 능력을 기르는 데에 주안점을 둔다. 구술사 교육연구 성과를 조망하는 한편, 교육사 연구자가 실지 구술 증언을 채록하고 이를 분석하여 학술논문을 작성하는 일련의 활동에 대한 집중적 훈련과 정이다. 구술사 연구 특유의 현지 방문 및 면접을 중심으로 하여 종래 문헌사 연구자가 하는 자료 검색 등을 모두 포함한다.

This course will provide historical theory and methodological training related to oral history. It is an intensive training course and students will obtain historical research ability through this course.
701.5001 Studies in Educational Psychology

This course is designed to familiarize students with issues and research in the field of educational psychology. Course readings include a wide array of topics in educational psychology, including the cognitive and psychosocial characteristics of students, and studies of individual differences in learning. The course provides students with an opportunity to overview the theoretical foundations and underlying principles of research in educational psychology, and to identify the major theories in the field. Students will also be able to articulate practical implications and applications of psychological theories in various educational settings.

701.5002 Understanding Gifted Education

This course is designed to help students understand the concepts and models of giftedness, and characteristics of gifted and talented individuals. Readings include topics about the identification and theories of giftedness; cognitive, social and emotional needs of gifted students; curriculum and instructional methods; grouping; and educational programs for the gifted. Students will become knowledgeable about various definitions and perspectives of giftedness and gifted populations, and issues in the field of gifted education.

701.5003 Studies in Education for Talent Development

This course is designed to familiarize graduate students with information about the concepts and models of education for talent development. The purpose of the course is to provide an overview of the theoretical foundations of talent and to identify underlying principles related to the models of talent development. The topics include theories of talent and talent development; domain general vs. specific talent; nature and needs of talented individuals, including special talented populations (e.g., giftedness with learning disabilities, prodigy, genius, etc.); and historical and current research in the field. Students will be able to articulate the implications of educational/psychological theories and practices in fulfilling individuals’ potential talents and abilities.

701.5004 Creativity and Education

This course is designed to familiarize students with issues and research in the field of creative education. Course readings include a wide array of topics in creative education, including the cognitive and psychosocial characteristics of students, and studies of individual differences in learning. The course provides students with an opportunity to overview the theoretical foundations and underlying principles of research in creative education, and to identify the major theories in the field. Students will also be able to articulate practical implications and applications of psychological theories in various educational settings.
as a future expert having expertise for helping students’ learning and affective development. Specifically, learning, creativity education, problem solving ability, moral education, and social development are reviewed comprehensively; furthermore, some educational approaches to help students to develop their learning and affective competencies will be discussed.

701.503 
한국교육사연구 3-3-0
Studies in Korean History of Education

이 과목은 대학원생들의 한국교육사 연구를 위한 입문과정이다. 이 과목에서는 시기별, 그리고 주제별로 그 동안의 연구 성과와 과제를 이해하며, 이 가운데 주요 성과를 검토하고, 앞으로의 과제가 무엇인지 확인한다. 작은 주제의 개인 연구 수행이 권장된다.

This is an introductory course for the research on the history of Korean education. To review the main researches and to identify important topics to do are the tasks of this course. It recommends short term individual study.

701.535 
교육인류학연구 3-3-0
Studies in Anthropology of Education

이 과목은 교육인류학의 학문적 성격, 이론, 방법론, 연구과제 등을 체계적으로 소개하는 데 그 목적이 있다. 학생들은 교육과 문화의 구조적 접합관계 및 역동적 상호작용을 이해하는 데 필요한 지식을 교육인문학의 주요 문헌을 통해 습득하고, 그 지식을 다양한 교육연구에 활용할 수 있도록 한다.

This course provides intensive study on educational anthropology, focusing on its academic features, theories, methodologies, and research problems.

701.571 
교육평가이론 3-3-0
Theories of Educational Evaluation

이 과목은 학과에서의 과정과 결과에 관한 평가의 이론과 실제를 중심으로 논의하며, 평가의 측면, 규모지향평가와 목표지향평가의 차이를 논의한 이론 기초에서 평가과학의 측면론, 실증적 평가, 객관평가, 형평평가, 통합평가의 역할과 기능의 차이를 파악하며, 동동에 정의적 특성의 평가, 환경의 평가, 스펙트럼 평가 등을 기본적으로 학습한다.

This course provides basic concepts of educational evaluation. It covers evaluation models and methods. The course also deals with school evaluation, student achievement evaluation, and program evaluation.

701.574A 
교육사회학연구 3-3-0
Pro-seminar in Sociology of Education

이 과목은 대학원생들의 한국교육사 연구를 위한 입문과정이다. 이 과목에서는 시기별, 그리고 주제별로 그 동안의 연구 성과와 과제를 이해하며, 이 가운데 주요 성과를 검토하고, 앞으로의 과제가 무엇인지 확인한다. 작은 주제의 개인 연구 수행이 권장된다.

This course is designed for master students who want to have rigorous training to become a sociologist of education. The topics include: origins and expansions of schooling, school effects studies, educational and social mobility, social & cultural climate of schools. Public schooling and social equity and reproduction of social order, & globalization and education.
*701.577A 교육철학 세미나 3-3-0
Seminar on Philosophy of Education

본 강좌는 교육철학 분야 핵심 주제와 문제를 중심으로 구성된 세미나의 형태로 강시한다. 이 분야의 주요 토론자들에 섬기는 것에 주안점을 둔다. 이를 통해 학생들은 최근 논문의 내용과 흐름을 파악함으로써 자신의 인물들에 대한 논의를 즐길 수 있고, 이 논문에 직접 참여할 수도 있는 연구적 감각과 판단을 기르고자 한다.

This course takes a form of seminar on specific philosophical problems and issues in education, introducing educational topics in recent discourses of philosophy of education. It will enable students to have a sense of direction about their own research-interests in the larger context of philosophical discourse, which will foster their capability to participate in the discourse as independent-minded researchers.

701.611A 동양교육사상사세미나 3-3-0
Seminar in History of Education Thoughts in the Orient

이 강좌는 아시아 지역에서의 교육사상의 성립과 발전과정을 역사적으로 검토하는 데에 목적이 있다. 매학기 특정 주제를 선정하여 강의 계획을 수립하여 운영하며, 비교연구도 포함된다.

This course is to examine the development of educational thoughts in Asia. Different specific topics related with that will be provided every semester. Especially comparative approach is emphasized in this course.

701.612 서양교육사상사 3-3-0
History of Educational Thoughts in the West

본 강좌는 서양의 주요 교육사상에 관한 연구를 통하여 그 교육사상에 함축되어 있는 이론적 문제를 확인하는 데에 그 목적이 있다. 그리고 이 강좌는 그러한 이론적 문제를 해결하려는 노력이 오늘날의 교육이론에 어떻게 반영되어 있는지를 확인할 것이다.

An advanced course in the history of western educational thought. Theoretical, rather than practical and conceptual studies shall be favored.

701.632 학습과 인지 3-3-0
Learning & Cognition

본 강좌는 학습활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개제하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개제하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입장으로서 교육활동에 개재하는 인지 변인들에 대한 과학적 연구자의 입

701.730 문화전달이론 3-3-0
Theories of Cultural Transmission

본 강좌는 교육의 전통적 과제인 문화전달에 관한 교육인류학의 여러 이론들을 체계적, 비판적으로 검토하는 데 그 목적이 있다. 학생들은 교육이 문화의 형성, 전달, 혁신에 어떻게 관련되는지에 대한 구체적 현장 연구사례들의 비교 문화적 분석을 통하여 설명력 있는 교육이론의 체계를 형성하는 역량을 기른다.

This course addresses anthropological theories on cultural transmission as a traditional function of education. It provides ethnographic case studies from the crosscultural perspective. The course helps students construct their own educational theories about how education is related to the formation, transmission, change, and innovation of cultures.

701.760 교육과정사 3-3-0
Historical Research in Curriculum

교육과정 분야의 발전을 이끌어 오는 주요 문헌들을 숙독함으로써, 교육과정과 관련된 주요 쟁점의 성격 및 이에 대한 다양한 관점의 변화과정을 살펴보고, 이에 영향을 미치는 사회적, 정서적, 문화적 요인을 이해한다.

This course addresses the historical evolution of curricula in the United States and Korea in terms of the major social, political, and cultural forces that have influenced curriculum change.

701.813 현대교육철학연구 3-3-0
Studies in Modern Philosophies of Education

현대 교육철학의 여러 이론들에서 발견되는 비판적 논점들에 대한 분석이 주된 관심사이다. 특히 이 비판적 논점들을 다룰 수 있기 위해서 요구되는 현대 교육철학 문헌들(Dewey, Peters, Oakeshott 등)에 대한 독서가 있어야 하며, 각각의 논점들로 나누어 볼 때로 연구하여 교육을 보는 체제적인 철학적 관점을 구성을 하는 데 도움이 되도록 해야 한다. 현대 교육철학의 입문서들에 대한 사전 지식을 필요로 하는 강의이다.

This course provides seminars on the philosophy of education. Specific topics will include the background philosophical views and ideas to be found in a wide variety of modern educational theories. Preliminary reading analyses of the writings of John Dewey, R. S. Peters, and Michael Oakeshott are required.

701.859 교육사연구특강 3-3-0
Topics in History of Education

이 과목은 교육사 연구방법론과 새로운 교육사 연구 성과를 소개하기 위한 과목이다. 여기에서는 국내외의 교육사 연구 성과는 물론 관련 학문 영역의 연구 성과도 다루게 될 것이다.

This course provides research methods and new research
trends in the field of history of education. It includes review of domestic and foreign researches in the history of education, and other research products in the related fields.

701.91E Educational Program Evaluation

This course provides basic concepts and theories about educational measurement, and introduces new educational measurement theories.

701.930A Educational Program Evaluation

This seminar course addresses basic concepts and theories about educational data analysis with computer programs. Every student will take a chance to present his/her report regarding educational data analysis with computer programs for advanced statistical analysis. It also focuses on various advanced statistical methods commonly used in educational research. It also focuses on various advanced statistical methods commonly used in educational research. It also focuses on various advanced statistical methods commonly used in educational research.

701.941 The Making of Modern Education in Korea

This course provides basic concepts and theories about educational measurement, and introduces new educational measurement theories.

701.953A Seminar in Education Statistics

This seminar course addresses basic concepts and theories about advanced statistical methods for educational research. It focuses on various advanced statistical methods commonly used in educational research. It also focuses on data analysis with computer programs for advanced statistical analysis. Every student will take a chance to present his/her report regarding educational data analysis with computer programs.

701.979 Studies in the History of Asian Education

This course provides historical review on education in Asia. It's main topic is to examine the influences of traditional Asian education upon modern and contemporary education. It focuses on various advanced statistical methods commonly used in educational research. It also focuses on data analysis with computer programs for advanced statistical analysis. Every student will take a chance to present his/her report regarding educational data analysis with computer programs.

701.984A Intelligence and Education

This course provides historical review on education in Asia. It's main topic is to examine the influences of traditional Asian education upon modern and contemporary educational systems and activities of the region.
The purpuses of this course is to introduce recent intelligence theories in the development of individual's potentials. Specifically, theories and research on practical intelligence, multiple intelligence, and emotional intelligence are reviewed critically. Furthermore, educational implications of the theories on individual- and organizational-level learning are explored in relation to a current transitional movement in Educational Psychology from school learning to learning society.

This course is designed to develop competence for conducting research and writing it as theses/articles in educational psychology field, and skills for writing proposal, theses/articles. This course urges students to understand a theoretical background of the curriculum field, to ask basic curriculum questions, and to explore the current perspectives and issues within the field.
 최근 학생 스스로 자신의 학습활동을 계획하고, 수행하고, 평가 하는 자기주도학습이 교육심리 영역에서 중요한 연구 주제로 교육 학자들의 관심을 끌고 있다. 이 강좌에서는 자기주도학습의 최근 연구에 대한 개관 및 비평, 그리고 학교학습에서 자기주도학습을 가능하게 하는 요소들에 대해 심도있게 다루고자 한다.

Educational researchers have been interested in self-regulated learning where students plan, execute, and evaluate their learning activities for themselves. In this course, recent research on self-regulated learning will be critically reviewed, and factors that facilitate students’ self-regulated learning in school will be empirically investigated.
Graduate students will learn theory and practice of instructional consulting in order to diagnose the quality of instruction and provide optimal solutions. Students will explore effective instructional consulting tools, strategies, and methods based on key concepts and theoretical models for instructional consulting. Approaches of Educational Technology including instructional analysis, learner and school environment analysis, instructional design, and educational media will be reinterpreted and applied for instructional consulting.

This course explores ways to develop and use tools for effective and interesting SMART learning. SMART learning includes self-directed, motivated, adaptive, resource enriched, and technology embedded learning methods. Based on the latest instructional design models, graduate students will develop a learning application that can be used in smart devices and modify the application after testing its effectiveness and usability. Through the development and literature review activities, students will seek for new models and methods that are necessary for the design of SMART learning tools and environments.

This course intends to explore recent developments on the instructional design models for higher-order thinking. Students will critically review studies and synthesize diverse research findings about design, development, utilization, management, and evaluation of technological resources and processes that address educational problems in K-12 schools and adult education. By discussing the limitation of current educational technology theories, students will collaboratively explore a new educational technology theory or model.

The purpose of this course is to understand the two major factors in constructing instructional systems: Needs analysis and Task analysis. Students will be able to apply them to education settings. Course topics include performance analysis, praxionomy, task analysis, and to be able to apply them to education settings.
The recent theories from the practical perspectives, and issues relating to educational technology, and approaches in the field will be examined. This course introduces the fundamental instructional systems development process such as Dick & Carey model and includes real projects in all phases. It presents the strengths of ISD and alternative design process such as Rapid Prototyping approach. It includes the basic instructional design strategies for different types of learning tasks. Students will develop a series of lesson plans to create effective, efficient, and appealing instruction in any content area for any audience, and design instructional programs for various education and training needs.

This course is an introduction to concepts, current trends and issues relating to educational technology, and approaches the recent theories from the practical perspectives.

This course reviews recent theories, models, and strategies in distance education and e-learning. Students have chances to explore recent theories, models, and strategies about instructional design, in the context of finding solutions to teaching-learning problems.

This course is an introduction to concepts, current trends and issues relating to educational technology, and approaches the recent theories from the practical perspectives.

This course reviews recent theories, models, and strategies about instructional design, in the context of finding solutions to teaching-learning problems.
대학원(Graduate School) ∴ 교육학과 교육공학전공(Foundations of Education Major, Dept. of Education)

701.948 교육공학연구법  3-3-0
Research Methods of Educational Technology

교육공학은 실천에 기반을 둔 학문이며 따라서 현실세계의 활동을 통해 교육공학 영역의 문제와 이슈들을 체험할 필요가 있다. 이 강좌는 기업체나 학교, 또는 관련 연구소에서 체험을 통해서 교육공학적 사고를 경험하도록 구성된다. 대학과 외부기관과의 접합점을 마련하는 의미도 부여할 수 있을 것이다.

This course targets students to gain practical insights through cooperative programs in business, school and relevant institutional settings. Students will involve in real issues and tasks in educational technology for the purpose of practicing systematic thinking.

701.996 교육연구인턴십  3-3-0
Educational Research Internship

본 과목은 대학원에서의 학생들의 연구 및 실천 역량 강화를 위해 교육분야 연구소 또는 관련 기관에서 실제적 경험을 갖도록 하는데 그 목적이 있다. 구체적으로, 학생들은 국내 외 교육분야에서의 교육연구와 교육사회 개선에 중심적 역할을 하고 있는 기관에서 일할 수 있는 기회를 가질 수 있도록 예비 교육전문가로서 연구 및 실천 역량을 개발할 수 있을 것이다. 학생들은 관련 기관에서 수행하고 있는 연구 및 각종 사업에 참여할 수 있도록 할 것이며, 관련 기관 책임자와 본 과목운영 책임자와의 공동 지도를 통해 필요한 역량을 집중적으로 개발할 기회를 가질 것으로 기대한다.

The course is designed to make students have on-site experiences in educational institutes. Specifically, students will have opportunities to work at educational research institutes or related organizations, and through such experiences, they can develop their research and practical competences requires to work at research and educational service programs conducted by participating educational institutes and will have opportunities to develop necessary skills and knowledge under the supervision of the main instructor of this course and a supervisor at the participating institute.

701.997 이러닝 설계  3-3-0
Designing E-Learning Environment

본 강좌는 인터넷 기술을 바탕으로 이루어지는 이리닝(e-Learning) 프로그램, 과정, 혹은 학습 환경을 설계하기 위한 다양한 원리, 아이디어, 모형, 이론을 검토한다. 컴퓨터 및 인터넷을 활용하는 교육 프로그램 개발에 대한 기초적인 이해와 경험을 선수학습으로 요구한다. 본 강좌에서는 중급 이상의 기술을 적용하여 실제 프로젝트의 개발을 경험하게 된다. 또한 이리닝 설계에 관한 최근의 연구 결과에 대한 비판적 분석과 이해를 지향한다.

This course provides the chances to examine principles, ideas, models and theories for designing e-Learning environments with Internet technologies. Students must finish a basic course regarding computer-mediated learning in order to proceed this course. Medium level of computer-related technology skills are expected and the real projects of designing and developing e-Learning will be implemented for course requirements. Recent theories and arguments of designing e-Learning will be deeply discussed.
본 강좌는 수강생들에게 약물남용을 비롯한 다양한 비행관련 청소년을 상담하는 데 필요한 지식 및 상담능력을 향상시킴을 목적으로 한다. 수강생들은 청소년 비행, 발달과정, 전반과 평가, 상담을 통한 개발방법 등을 학습하고 논평할 것이다. 특히 본 강좌에서는 최근 급격히 증가하는 약물남용 청소년이 사용하는 약물의 특성, 발생하는 문제행동, 그리고 그들에게 적용한 개발방법 등을 대해서도 다루게 될 것이다.

This course addresses knowledge and skills necessary for counselling juvenile delinquents and drug abusers. It covers psycho-social characteristics of juvenile delinquency, its development, assessment, and intervention techniques.

701.650 상담윤리, 법, 제도 3-3-0
Ethical, Logical & Organizational Issues in Counseling

본 강좌는 상담론문가로서 준수해야 할 현행 상담전문가 윤리 강령과 상담관련 법률 및 제도의 개념과 내용을 숙지하여 전문가로서 가치할 기초적 자질을 함양하는 것을 목적으로 한다. 또한 수강생들은 숙지한 상담윤리 및 법, 제도 내용의 사례와 현장의 사례에 적용해 본으로써 상담 실천의 윤리적, 법적 제도적 쟁점들에 심층적인 이해를 하게 됩니다. 이를 바탕으로 상담 실무 현장에서 경험하게 될 여러 가지 갈등 상황에 대처하는 능력을 배양하고, 새로운 윤리강령의 입안 및 제도적 정비에 기여할 수 있게 한다.

This course deals with counselor's ethical principles, along with laws and systems related to counseling. It covers the development of job abilities, the understanding of ethical, logical and organizational issues in counseling.

701.678 직업심리학과 상담 3-3-0
Vocational Psychology & Counseling

본 강좌는 진로상담 전문 영역의 심의 및 학문적 발전에 기여할 전문가로서의 소양을 함양하는 것을 목적으로 한다. 강의는 직업력력의 개발, 진로문헌의 토크와, 직업영역에 대해 이해, 직업여행, 직업 및 직업체계적 직업, 직업 전문대비 및 진로와 관련된 이론적, 실제적 쟁점에 대한 토의를 중심으로 진행될 예정이다.

This course intends to build up the experts to contribute to the career counseling academically and practically. The lecture consists of the development of job abilities, the understanding of job world, the process of Job exploration, the working adjustment, and etc.

701.879 상담교육 및 수피비전 실습 3-3-0
Practicum of Counselor Education and Supervision

교육상담의 이론 강의와 실제 현장에서 이루어지는 상담 실무를 경험하고, 학문적 논리함을 향상시켜 어느 것을 목적으로 한다. 수강생들은 교육상담에 관한 이론적 지식의 축적과, 개인심리의 발달, 이해론의 관점에서 이해하고 해결의 가능성을 탐색한다. 이는 학문적, 실무적 쟁점 및 연구동향 등을 집단상담 및 교육프로그램 개발의 선택사항을 중심으로 학습하고, 수신자 생성에서부터 개발에 이르는 전제 과정을 직접 체험함을 목적으로 한다.

This course intends to integrate theoretical knowledge and practical application in actual counseling settings. Students will come to understand practical business, case management, case study, and case analysis. They will be provided with opportunities to watch actual educational counseling situations, to supervise the Counseling Service Center, and to present and interpret case studies.

701.880 집단상담 및 교육프로그램 개발 3-3-0
Program Development of Group Counseling and Psycho-Education

본 강좌는 수강생들에게 학교 및 상담실 현장에서 사용할 수 있는 집단상담 및 교육프로그램을 스스로 구성, 개발, 실시할 수 있는 기초적인 능력을 향상시킬 것을 목적으로 한다. 본 강좌에서는 집단상담 및 교육프로그램 개발하는 데 필요한 기초 이론, 프로그램의 구성요소, 프로그램 개발 원칙, 프로그램 개발의 정립 및 연구동향 등을 집단상담 및 교육프로그램 개발의 쟁점들 중심으로 학습하고, 주제 선정부터 개발에 이르는 전제 과정을 직접 체험할 것이다.

In this course, students will design, develop, and perform group counseling and educational programs that will be used in schools and counseling facilities. The course will cover the theories, development procedures, and research issues relevant to the development of group counseling and educational programs. Students will experience the entire process from the selection of a topic to the development and evaluation of educational and group counseling programs.

701.881 상담학의 최근 동향과 정점 3-3-0
Current Movement and Issues in Counseling

본 강좌는 상담학의 국내외 연구 및 실무의 최근 동향과 주요 이론들에 대해 학문 영역이나 실무 영역에서의 자신의 새로운 발전을 위해 국내외 학회 활동, 학회지 수록, 통계적 분석에 대한 이해, 상담 영역 주제 전반에 대해 학문의 발전과 함께 참여하는 방법을 소개하고 참여를 권장한다. 상담학 내의 최근 동향과 정점뿐만 아니라 상담학 인권 학문의 근본 동향과 개발에 대한 이해도 함께 도모하여 상담학에 대한 거시적 안목도 향상시킬 것이다.

This course is designed: to provide students with an awareness of current movements and issues in counseling research in Korea and abroad as well as practical business; and to enable students to communicate with other professional counselors about what they find in academic and practical counseling areas. It will include: academic activities in Korea and abroad, topics of theses in academic journals, workshops and seminars, major issues in various counseling areas, and publication. These approaches will be expanded to other academic fields related to counseling, which will help students to take a broad view of the field.

701.895 마음, 뇌, 교육 3-3-0
Mind, Brain and Education

상담 및 학교교육현장에서 발생하는 현상과 문제들 자연과학적 인식의 관점에서 이해하고 해결의 가능성을 탐색한다. 학교교육 현장 및 상담에서 발생하는 학습, 지식의 촉발, 인식의 발달, 정서발달과 학습에 관한 이론을 이해하고 적용할 수 있게 한다.
이 강의는 상담연구(양적, 질적 연구 두 가지 다루) 프로젝트에 필요한 과학적 인식의 전략, 연구의 목적, 방법론 및 연구 결과의 해석에 대한 교육을 제공한다. 학생들은 자신의 아이디어를 제시하고 연구계획서를 작성하게 된다.

This is a comprehensive introductory course on counseling research, both quantitative and qualitative. It provides relevant research projects.

### 701.932A 교육심리상담특수교육연구설계 3-3-0

#### Research Design in Counseling, Educational Psychology and Special Education

연구설계에 관한 내용은 교육학과의 교육상담 전공, 교육심리전공, 그리고 협동과정 특수교육 전공 간에 거의 공유하는 내용이다. 이 과목에 대해서는 전공 구분 없이 함께 수강토록 계획하고 있으며, 이 과목의 목표는 "교육심리상담특수교육연구설계"로 변경함으로써 관련 박사과정 학생들이 전공 구분없이 연구설계 과목을 수강할 수 있도록 하고자 한다. 이 과목은 실험연구설계, 조사연구설계를 포함한 전문과정연구설계 등을 포함한다.

### 701.932A 교육심리상담특수교육연구설계 3-3-0

#### Current Theories of Counseling and Education

"현대상담이론과 교육"에서는 최근의 개념과 소설되는 상담이론과 이론의 미래적, 상담학의 개념과, 그리고 그들간의 교육학적 적용성에 대한 내용을 다루게 될 것이다.

### 701.932A 교육심리상담특수교육연구설계 3-3-0

#### Advanced Theories and Techniques of Counseling

"고급상담이론과 기법"은 "상담이론과 기법"을 선수과정의 상담과정을 중심으로 하여 "상담이론과 기법" 과목에서 다루지 않는 일반 이론과 함께 각 이론별로 제시하고 있는 개발기법, 재단기법화 기법들을 교육하고 연구하는 교과목이다.

The course is to cover the current counseling theories, new trend in counseling theory and research, development of counseling model, and the application of counseling theories in educational setting.

### 701.932A 교육심리상담특수교육연구설계 3-3-0

#### Methodology of Counseling Research

이 강의는 심리사회적, 질적 연구 및 다른 방법론 예술이나 양적 연구에 보다 주안점을 두는 목표, 주제, 방법에 관한 복잡한 이론과 실험을 습득하는 것을 목표로 한다. 학생들은 자신의 아이디어를 제시하고 연구계획서를 작성하게 된다.

This is a comprehensive introductory course on counseling research, both quantitative and qualitative. It provides relevant research projects.
educational and psychological testings. It covers conceptual questions and methodological comprehension of testings.

701.966 진로 및 직업상담 3-3-0

Career and Vocational Counseling

본 강의는 진로상담에 관한 이론적 지식과 실천적 기법을 습득 하여 이를 상담현장어서 효과적으로 활용할 수 있는 능력을 배양 하는 것을 목적으로 한다.
This course provides theoretical knowledge and practical skills about career counseling.

701.968 집단상담 3-3-0

Group Counseling

본 강의의 목표는 학생들에게 집단상담을 지도할 수 있는 기초 적인 능력을 함양시키는 것이며, 이 목표를 성취하기 위해 학생들 은 다양한 활동에 참여하게 될 것이다. 학생들이 경험하게 될 다 양한 활동들은 ① 집단상담의 전반적인 과정과 발달단계에 대한 강의, ② 집단상담 이론별 주요개념과 기법에 대한 강의, ③ 집단 적인 훈련집단. 그리고 ④ 공동지도자로서 집단상담을 운영하기 등이다.
This course provides basic skills of group counseling. It offers lectures about the development of group counseling, as well as intensive practices.

701.969 상담현장실습 1 3-0-6

Counseling Practicum 1

상담전문 학생들을 위한 과목으로서 실제 내담자를 대상으로 상담 전문가의 지도하에 집단상담을 계획하고 운영하며, 사례지도와 발표를 통해 자신이 운영한 집단상담을 평가해보는 것을 주목적으로 한다. 학생들은 교내외 상담기관에서 청소년 및 대학생을 대상으로 집단상담을 운영하게 되며, 자신이 운영한 집단상담 사례를 발표하고 지도감독자와 다른 학생들로부터 평가받는 기회를 갖는다. 본 과목은 학생들은 자신이 이미 습득했던 이론적 지식을 실제에 적용하고 평가해 보면서 상담전문가로서 집단상담에 대해 풍부한 지식을 형성해나가는 기회가 될 것이다.
This course addresses the planning and operation of group counseling under the guidance of professional counselors. It provides case studies and presentations about group counseling.

701.971 상담교육 및 수퍼비죤 3-3-0

Counselor Education and Supervision

본 강의는 상담자 발달과정, 교육, 수퍼비죤에 관한 주요 이론 과 실제적 경험들에 대해 이해를 높이고, 상담자로서 자신의 발달 과정을 통합적으로 이해하며, 실제 수퍼비죤에서 나타나는 다양한 이슈들 경험적으로 이해하고 본인이 수퍼비죤을 제공할 수 있는 역량을 갖추도록 하는 것을 목표로 한다.
This course addresses the development and education of counselors, along with important issues on supervision.

701.989 집단상담실습 3-3-3

Practice in Group Counseling

본 과목은 실제 내담자를 대상으로 집단상담전문가의 지도하에 집단상담을 계획하고 운영하며, 사례지도와 발표를 통해 자신이 운영한 집단상담을 평가해보는 것을 주목적으로 한다. 학생들은 교내외 상담기관에서 청소년 및 대학생을 대상으로 집단상담을 운영하게 되며, 자신이 운영한 집단상담 사례를 발표하고 지도감독자와 다른 학생들로부터 평가받는 기회를 갖는다. 본 과목은 학생들은 자신이 이미 습득했던 이론적 지식을 실제에 적용하고 평가해 보면서 상담전문가로서 집단상담에 대해 풍부한 지식을 형성해나가는 기회가 될 것이다.
This course addresses the planning and operation of group counseling under the guidance of professional counselors. It provides case studies and presentations about group counseling.
학교과정에서 습득한 교육행정의 이론과 실제를 보다 심층적으로 분석 논의하는 것을 목적으로 한다. 관료제, 의사결정, 지도성, 조직문제 등 교육행정학의 고전적 이론에서부터 최신의 이론까지 이론의 장·단점을 분석 평가하고, 현실 적용가능성을 검토한다.

이 코스는 교육관리학과 교육행정학 및 교육관련 과목에서 교육정책에 대한 중요성을 인식하도록 하며, 교육자원의 확보·배분·관리·평가 등의 제반 문제에 대한 학문적 이해를 기반으로, 한국 교육정책의 문제점을 파악하여 이를 해결하기 위한 학습의 대목을 담당한다.

이 코스의 주요 목표는 학생들의 학자적 이해력과 논리적 사고력, 그리고 교육정신 및 교육행정의 실제 등으로 구성된다.

교직수업에 있어서 교육정책과 교육정책의 개념, 교육정책의 구조와, 그리고 최근의 교육정책의 연구와 이론을 구체적으로 이해할 수 있도록 하였으며, 학교경영의 실제 등에 대한 학습을 위해서는 교육정책의 구조적 이해와 실제에 대한 이해가 필요하다. 이 코스는 학생들의 학자적 이해력과 논리적 사고력, 그리고 교육정신 및 교육행정의 실제 등으로 구성된다.
The objective of this course is to understand practical and theoretical aspects of school consulting, new area of study of the professional development of teachers and school administrators. Major areas of study are model and principles of school consulting, theoretical backgrounds of school consulting, and practices of school consulting, etc.

701.805 고등교육정책 3-3-0
Higher Education Policy

This course covers diverse theoretical perspectives on higher education policies. In addition, instructor and students will choose current policy issues in higher education and discuss and analyze the issues using different theoretical perspectives. To take the course, students are required to take higher Education (701.874) or have pre-knowledge on policy and/or finance. Students are required to actively participate in class discussions and presentations.

701.871 교육법 3-3-0
Educational Law

This course discusses legal principles applied to educational governance and administration. It also analyzes educational law systems in Korea.

701.872 교원교육론 3-3-0
Teacher Education

This course covers basic perspectives on human, models of human relationships, and human relationships within organizations. In this course, we will focus on descriptive approaches on human relationships rather than normative. Based on the theoretical and practical aspects of the course, students will be required to complete a research project or thesis on educational policy analysis. To take this course, students are required to take a basic qualitative and a quantitative research method. The course emphasizes analyzing actual case
that instructor provides as well as theoretical instruction. In addition, students are required to bring a case to analyze in the course. The final product of the course is a publishable article or research proposal of his/her thesis or dissertation.

**701.900 고등교육세미나 3-3-0**

**Seminar of Higher Education**

*Seminar of Higher Education (701.874)* is a course for students who have already taken Theory of Higher Education (701.874). In the course, in-depth discussions on diverse issues of higher education (e.g., governance, finance, quality, globalization, etc.) will be covered. The topics will focus on contemporary issues on higher education in Korea. Students are required to present given topics and to participate in class discussions. In addition, students will conduct supervised research on higher education issues that each or a group of students choose.

**701.909 교육행정연구법 3-3-0**

**Research Methods in Educational Administration**

This course will help students develop research skills, understand the research process, and apply appropriate research methodologies. In the course, students will learn how to develop research plans, conduct literature reviews, and conduct qualitative and quantitative studies. In addition, students will learn new research methodologies applicable in educational administration.

**701.981 교육제도비교연구 3-3-0**

**Comparative Studies in Educational Systems**

This course is to compare educational systems between countries to understand characteristics and changing trends of each system. At the end of the class, students will figure out how to compare education systems between countries and will find some implications for improving education systems of each country.

**701.987 교육개혁론 3-3-0**

**School Reform: Theories and Practices**

This course focuses on theories and practices of education reforms in Korea and other countries. In the class, we will cover diverse issues in education reforms in higher education as well as elementary and secondary education. This course will provide an opportunity of overviewing educational reforms and projecting the future of education systems.
701.609A 평생교육프로그램개발 3-3-0

Lifelong Education Program Development

This course deals with theories of lifelong learning societies. Through historical review of lifelong education and lifelong learning societies, student will examine and understand various point of view of lifelong education. And students will prospect the learning society and will develop course about lifelong education as a new academic discipline.

701.608A Theory of Lifelong Learning Society

This course is designed to teach students how to design a structured lifelong learning society, to those who have learned and apply the knowledge obtained by the course of introduction of lifelong learning society theory. Learning society, in principle, is a new social foundation upon which social components are restructured to maximize the value and use of learning to promote social development and inclusion, at the levels of learning companies, learning cities, learning nations, or learning regions. The provision and design of learning in a learning society, of course, goes beyond the provision of traditional school and universities, that includes further multiple dimensions of various social devices that directly handle knowledge and culture in culture and art sectors, welfare sector, and labor market, etc. The lecture encourages students to write a proposal and conduct a project to design a model in a given unit of social context.

701.608B Studies in Methods of Lifelong Education

This course is intended to teach how to design a core structure of lifelong learning society, to those who have learned and apply the knowledge obtained by the course of introduction of lifelong learning society theory. Learning society, in principle, is a new social foundation upon which social components are restructured to maximize the value and use of learning to promote social development and inclusion, at the levels of learning companies, learning cities, learning nations, or learning regions. The provision and design of learning in a learning society, of course, goes beyond the provision of traditional school and universities, that includes further multiple dimensions of various social devices that directly handle knowledge and culture in culture and art sectors, welfare sector, and labor market, etc. The lecture encourages students to write a proposal and conduct a project to design a model in a given unit of social context.
learning organization: basic concepts, background, history, key success factor, critical issues and problems. Besides, it fosters their ability to apply the five principles of learning organization in reality with systematical understanding. The students will comprehend the relationship between organizational learning and learning organization, and learning organization theories and diverse pros and cons. Moreover they will figure out theories and practices of organization development and of knowledge management, with their relationship in order to find out the key success factor of knowledge management.

701.691 
Introduction to Business & Industry Education

This course addresses concrete issues to meet practical and educational needs of contemporary companies. Specific topics will include the current status of corporate education and the educational needs of contemporary companies. Specific topics will include the current status of corporate education and the educational needs of contemporary companies.

701.696B 
Adult Learning Theory and Research

The course addresses issues related to the design of corporate educational programs and systems.

701.732A 
Studies in Lifelong Education Theory

This course addresses issues related to the design of corporate educational programs and systems.

701.806A 
Péking education

This course addresses issues related to the design of corporate educational programs and systems.

701.824A 
Research Methodology in Lifelong Learning

This course addresses issues related to the design of corporate educational programs and systems.

701.825A 
Seminar in Lifelong Education Management and Administration

This course addresses issues related to the design of corporate educational programs and systems.
의 평생교육정책의 특성, 문제, 과제도 분석한다.

The goal of this course is to generally understand the life-long education policy and system and explore the implications in specific dimension.

This course analyzes the structure and function of Korean adult education system, in comparison with that of other countries. It also addresses the policy of national adult education and community adult education.

701.976 국제경제와 교육 3-3-0
Global Economy and Education

이 강좌는 교육과 경제의 연관이 점점 강해지고 있는 현실 속에서 교육이 개인과 사회, 국가의 성장 수단이라는 전통적인 관점을 비판적으로 검토하고, 글로벌 경제가 교육에 미치는 영향을 다각적으로 분석하는 것을 목적으로 한다. 글로벌 경제는 교육을 통해 중대한 개념과 사회, 국가의 생산성에 대한 관점 자체에 대한 변화를 요청하고 있다. 역사, 사상, 계획, 등 생산성을 증대시키기 위한 모든 활동은 지식의 산물이다. 이러한 관점의 변화와 함께 기술의 진보로 인한 정보통신 수단의 발전은 교육에서도 핵심적 변화를 불러일으키고 있다. 예를들어 학교와 그 기반 설비는 학생들의 인적 자원을 육성하고 조직에 축적할 수 있는 공간을 제시할 것이다.

The link between education and economics is growing stronger each year. Traditionally, economics has recognized education as a means of increasing production - of individuals, communities or nations. A globalizing economy changed the nature of that production such that knowledge as production. Innovation, market analysis, planning, process engineering are all knowledge products that drive the engine of much of industry. These changes along with the technological changes that create the means to easily communicate across space and time, are causing a revolution in education. Schooling and its infrastructure are being rethought of as soft infrastructure with the ability to span across a lifetime. As this revolution in production and education policy and system and explorer the implications in specific dimension.

701.995 국가인적자원개발론 3-3-0
National Human Resource Development Theory

본 강좌는 국가인적자원개발의 개념, 이론, 영역 및 과제 등을 체계적으로 이해하고 국가인적자원정책의 전략적 - 사회학적 - 종합적 성격을 이해하는 것을 목표로 한다. 국가인적자원개발은 지식사회 국가발전을 위한 핵심전략으로 부각되었으며 국가인적자원정책은 전 국민의 인적자원을 효과적으로 육성하고 효율적으로 배분하며 적절적으로 활용하도록 하는 정부의 적극적인 관여를 의미한다. 본 강좌를 통하여 국가인적자원개발과 관련된 실제 정책 사례를 분석, 비판, 이해할 수 있다.

The purpose of this course is to overview concepts, theory, and practices about national human resource development. Human resource development is composed of nurture, utilization and circulation of human resources. Current issues and future policy agenda can be analyzed, criticized and developed in each components.

701.882 인재론 3-3-0
Talent Theory and Practice

본 강좌는 핵심인재의 개념, 특성, 육성에 관한 이론과 실제를 조사(특히 기업) 및 국가 차원에서 종합 조망하고 대한민국 핵심 인재의 육성을 위한 전략과 과제를 탐색하는 것을 목적으로 한다. 이 강좌는 파워엘리트(lessons), 지식노동자(knowledge worker), 성장한적(semantic analyst), 영재(gifted and talented) 등 각 학문 분야별로, 역사적으로 다르게 명명되어 온 핵심인재에 관한 이론과 실제를 통합적으로 탐색하기 위해 설계되었다. 세계 각국 국민의 평균 IQ 순위는 지구촌의 인재정책과 교육에 어떤 새로운 시각을 요구하고 있고, 사회는 명명, 즉, 왜 노벨상 수상자들은 유명인이 가장 많고, GE와 삼성은 왜 그리고 어떻게 세계적인 기업으로 성장하고 군림하는가 등에 관한 문제 등을 ‘사람’이라는 렌즈로 탐색하기 위해 설계되었다. 이 강좌는 핵심인재에 관한 이론과 실제를 바탕으로 비판적으로 검토하게 될 것이다. 또한 인재에 관한 연구와 논의의 사회학적 주도권을 행사하고 있는 서구중심의 이론과 실제가 아니라 동양의 유구한 역사와 전통 속에 신장된 동양의 인재의 개념, 인재적 성질을 동시에 설계함으로써 인재에 관한 이론과 실제의 보편성과 특수성을 함께 탐색한다. 유명인, 육성론으로 대변되는 동양의 인재에 관한 역사적 통찰에 허언을 학습하고 현대적 시사점으로 분석하게 될 것이다.

The purpose of this course is to overview concepts and characteristics of talent and talent development theories and practices from the perspectives of individual, organizational level as well as national level and then explore strategy, principles and systems of talent development. Furthermore, historical and contemporary review and study on asian and oriental approaches to talent development as well as western approaches, which have been dominant in talent development discourse will be inclusively conducted.

701.883 리더십개발론 3-3-0
Leadership Development Theory and Practice

사회 각 분야의 리더십에 관한 관리와 필요성에 비해 교육학 분야에서 리더십에 대한 이론적이고 실천적인 접근이 부족하다. 본 강좌는 공동주의, 기업, 국가, 사회적 기관, 학교교육 차원 등 걸쳐 리더의 특성(traits/characteristics), 상황과 육성(development
and education) to lifelong development and life-wide areas. Growth and development of leaders is a phenomena which occurs through school curriculum(including extracurricular activities), non-school experience and learning, task completion, leadership training and education in one’s life history and wide areas of human activities. Leader education program development and principles to incorporate human experience into program as well as leadership theory and traits will be primarily covered. In this course, such leadership development as in school, corporate sector, and public areas(school principals, education leader, etc) will be included, too. This course will also be designed to develop student’s ability to raise practical leadership research issues, interprets leadership research findings to develop leadership program, evaluate current leadership programs, and develop leadership program.

701.884 평생학습과 생애경로 세미나 3-3-0
Seminar in Lifelong Learning and Life Course

본 세미나 강좌는 평생학습이라는 민족을 통해 인간의 생애경로를 이해할 수 있는 가능성을 탐색한다. 각 개인의 생애경로는 개인의 고유한 특성뿐만 아니라 그가 속한 사회적·역사적, 문화적 맥락을 반영한다는 관점에서 개인의 선택, 인지, 정서, 작업, 사회학적 역할 등의 변화를 보다 넓은 사회문화적 맥락의 변화 속에서 검토한다. 또한 생애별 생애경로의 차이와 그에 투영된 평생학습의 다양성 탐구를 통해 평생학습과 사회변화를 설명할 수 있는 가능성을 탐색한다.

This seminar course focuses human life course from the perspective of lifelong learning. Individual life course reflects the personal characteristics as well as socio-cultural and historical contexts. The course deals with physical, cognitive, emotional, spiritual, career and social role development throughout one’s life in relation to wider socio-cultural changes. It also explores generational differences in constructing life course and choosing lifelong learning activities. The possibility of explaining social change from the lifelong learning perspective is also investigated.

701.885 융합학습시스템 3-3-0
Integrated Learning Systems

This class will explore the patterns of learning and the associated existential transformation of adults who are pursuing a liberal education in the lifelong learning context - fields such as Philosophy, Art, and Religion. It presupposes that the experience of pursuing a liberal education can fundamentally change one’s human existence through reflections into one’s own life vision and principles. The course begins with substantive readings on theories of adult learning - especially those focused on topics covered within the Liberal Studies and Arts fields and emerging areas within the Humanities. The second half of the course requires students to conduct research on adult’s experiences in Liberal Studies and Arts education. This research is intended to discover particular patterns and textures of learning experiences that impact the existential dimension of human living.
books, and structured classroom-oriented curriculum. Deconstruction of schooling in terms of lifelong learning intends to generate a new theory that sees life and learning differently, which does not exclude schooling. This work is connected to post-modern thought which denies meta narrative and normative ideology. This seminar aims to read post-modern thinkers to explore possible ways of theorizing lifelong learning.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1838.000200</td>
<td>학습생애와 학습문화연구실습  3-1-4</td>
<td>3-1-4</td>
<td>Learning Lives and Learning Culture Research Practice</td>
</tr>
<tr>
<td>M1838.000300</td>
<td>Seminar on the Educational System in Learning Society</td>
<td>3-3-0</td>
<td>The seminar intends to navigate the structure and policies of learning society, a social ideal type or value system that distinguished itself from the circumstances, like culture, politics, or religions, and represents a form of an educational system that continuously evolves by self-descriptions and creating its own territories. Learning society is a futuristic form of educational system, which formulates itself with self-referential logics, media, codes, and way of representations into legal and organizational structures. In this seminar, students are expected to actively participate in, to present ones’ perspectives and theories, and to share dialogues and achieve a form of collective intelligences on this issue.</td>
</tr>
</tbody>
</table>
This course will focus on a comprehensive understanding of classical prose through the reading and analysis of various essays and novels such as gi(記), jeon(傳), and seo(書) from the ancient era to the late Joseon Dynasty. Students will identify the tradition of Korean literature and explore its application to Korean language education.

705.530 현대시교육론연구 3-3-0

Studies in Teaching Modern Poetry

This course will focus on the study of modern Korean poetry and the development of students’ competence in interpretation and evaluation. Students will expand their historical view of modern poetry and establish their own basis of poetry education.

705.531 현대산문교육론연구 3-3-0

Studies in Teaching Modern Prose

The course will focus on the study of the aesthetic characteristics of modern Korean prose that deserve to be accepted and received by learners and readers. Students will conduct a comprehensive review of the theory of prose and study the historical developments of prose in the history of modern Korean literature.

705.606 언어와 문학 3-3-0

Language and Literature

This course will focus on the study of the aesthetic characteristics of modern Korean prose that deserve to be accepted and received by learners and readers. Students will conduct a comprehensive review of the theory of prose and study the historical developments of prose in the history of modern Korean literature.

705.608 국어문화교육론연구 3-3-0

Studies in Teaching Korean Language Culture

This course will focus on the study of the aesthetic characteristics of modern Korean prose that deserve to be accepted and received by learners and readers. Students will conduct a comprehensive review of the theory of prose and study the historical developments of prose in the history of modern Korean literature.

705.610 국어교육론연구 3-3-0

Studies in Teaching Korean Language Education

This course will focus on the study of the aesthetic characteristics of modern Korean prose that deserve to be accepted and received by learners and readers. Students will conduct a comprehensive review of the theory of prose and study the historical developments of prose in the history of modern Korean literature.

705.527 국어규범론연구 3-3-0

Studies in Standard Rules of Korean Language

This course will focus on the study of the aesthetic characteristics of modern Korean prose that deserve to be accepted and received by learners and readers. Students will conduct a comprehensive review of the theory of prose and study the historical developments of prose in the history of modern Korean literature.

705.529 현대산문교육론연구 3-3-0

Studies in Teaching Classical Prose

This course will focus on a comprehensive understanding of classical poetry through reading and analysis, and on a search for the contents and method of classical poetry education.

705.528 고전시가교육론연구 3-3-0

Studies in Teaching Classical Poetry

This course will focus on a comprehensive understanding of classical poetry through reading and analysis, and on a search for the contents and method of classical poetry education.

705.526A 국어문법교육론연구 3-3-0

Studies in Teaching Korean Language Grammar

This course will focus on a comprehensive understanding of classical poetry through reading and analysis, and on a search for the contents and method of classical poetry education.

705.525 국어교육학습론연구 3-3-0

Studies in Korean Language Education

This course will focus on a comprehensive understanding of classical poetry through reading and analysis, and on a search for the contents and method of classical poetry education.

한국문학의 정통성을 확인하고 구함으로써 정서법의 이론을 확립하고자 한다.

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한국문학의 정통성
will focus on identifying the concepts of Korean language culture, illustrating its essence and analyzing specific Korean language culture. Students will also study various cultural theories and establish the theoretical foundations of Korean language culture.

705.716 Seminar in Language Teaching

Language education is interdisciplinary. This course will study the relationship between Korean language education and related disciplines and search for their applicability.

705.717 Seminar in Literary Education

In education, it is necessary to harmonize literary theory and practice. This course will take various approaches from related fields to literary education, establish perspectives on literary education, and explore their practical aspects.

705.720 Studies in Korean Language Education & It's Related

Studies on Korean language education require cooperation among various related disciplines. To organize the study of Korean language education, we need to study linguistics, literature, pedagogy, psychology, anthropology, linguistic philosophy, and linguistic sociology. In this course, students will identify the features of language education and study various concepts and principles. Class sessions will be managed through research, presentations, and discussions.

705.723 Studies in Policy of Teaching Korean Language

Considering the public nature of Korean language education, national policy can be said to have considerable effects on Korean language education. This course will study historical research on the relationship between national policy and Korean language education, and enhance the students' viewpoints.

705.724 Studies in Teaching Korean Lexicon

The Korean lexicon constitutes the basis of Korean. This course will study the concepts and nature of a lexicon, explore effective ways of implementing vocabulary education, and firmly establish the foundations of Korean language education.

705.725A Studies in Teaching Discourse Text

School education is based on existing theoretical grammar. It considers psychological developmental stages and develops grammatical competence that can be used to advance learners' linguistic abilities. This course will focus on topics from syntax to discourse texts and explore new concepts of "pedagogical grammar."

705.726 Studies in Teaching Oral Literature

This course is based on existing theoretical grammar. It considers psychological developmental stages and develops grammatical competence that can be used to advance learners' linguistic abilities. This course will focus on topics from syntax to discourse texts and explore new concepts of "pedagogical grammar."

705.727A Studies in Teaching Didactic Literature

This course is based on existing theoretical grammar. It considers psychological developmental stages and develops grammatical competence that can be used to advance learners' linguistic abilities. This course will focus on topics from syntax to discourse texts and explore new concepts of "pedagogical grammar."
전통의 문제를 다룬다. 교술문학을 당대의 문화와 생활의식과의 연관성에서 읽고 이해하고자 한다. 가사, 전 등의 교술 장르의 작품에 대한 이해와 함께 이를 통해 전통문화에 대해 연구한다.

This course will focus on Koreans’ emotions and traditions as expressed in traditional didactic literature. Students will acquire a clear understanding of didactic literature through the study of its culture and mode of living. Didactic genres such as kasa and jeon and traditional culture will also be studied.

705.728 문학비평교육론연구 3-3-0

Studies in Teaching Literary Criticism

문학과 문학 비평을 밀접한 관련이 있다. 그 이유는 비평의 과정과 문학 작품을 감상하는 과정이 유사한 절차와 방법을 지니고 있기 때문이다. 이러한 사실을 전제로 문학 비평이 문학에 가까할 수 있는 바가 있듯이, 문학적 관점에서 문학비평을 어떻게 수행해야 할 것인가에 대해 연구하는 것이 이 과목의 목표이다.

Because the process of literary criticism and appreciation employ similar procedures and methods, literary education and criticism are closely related. This course will focus on the questions of how literary criticism can contribute to literary education and how literary criticism can be accepted in terms of literary education.

705.729 문학교육사연구 3-3-0

Studies in the History of Korean Language Education

국문학의 역사적 흐름을 살펴보는 것은 국어교육 특히 문학교육에서 기초적인 학습이 될 것이다. 이 과목의 목표는 국어의 시적, 음운, 형태, 통사 등의 시대로 개괄함으로써 현대국어의 기원과 원천을 살펴보고, 이를 바탕으로 효과적인 국어사용을 위한 발판을 마련하는 데 있다.

The study of historical changes in Korean literature is essential to Korean and literary education. Students should be careful not to believe that “literary history” is constant and unchanging. This course will focus on the mainstream of Korean literary history and explore ways of applying it to the classroom.

705.803 대학원논문연구 3-3-0

Dissertation Research

각 연구분야의 주요 흐름을 결정한 주요한 논쟁과 논문을 중심으로 자료를 연구한다. 그리고 현 국어교육계의 학문공동체의 현주소가 어디인지 확인하는 자료를 갖게 하는 데 본 강좌의 취지가 있다.

This class studies the critical issues and arguments concerning each sub-field of Korean pedagogy, with the examination of current academic circles.

국어교육전공(Korean Language Education Major)

705,509 국어교육사연구 3-3-0

Studies in the History of Korean Language Education

국어교육과 관련된 과거의 사상을 나열하고 확인하는 단계를 넘어서, 역사적인 관점으로 국어교육 전반을 고찰하는 과정이다. 국어교육에 대한 기존 연구들을 살펴보고, 국어교육사 기술에 선행되어야 하는 것이며, 이를 바탕으로 체계적인 국어교육사 기술을 모색해 볼 수 있다.

The course will focus on arranging historical facts on Korean language education and surveying the history of Korean language education. Students will examine studies on Korean language education, arrange and review the issues, and search for a systematic description of the history of Korean language education.

705.532A 국어의미와용교육론연구 3-3-0

Studies in Teaching Korean Semantics and Pragmatics

이 과목은 국어의미론과 화용론의 연구 성과들을 국어교육의 시각으로 접근하여 교육 내용과 방법을 찾는 데 목적이 있다. 국어의미론적 관점에서 국어의 의미와 의미의 형식, 단어 간의 의미 관계를 연구한다. 또한 화용론적 관점에서 국어의 실제적인 맥락과 관련하여 적절한 발화를 모색해 볼 수 있다.

The goal of this course is to approach the records of Korean Semantics and Pragmatics to make teaching contents and methods. The point of Semantics’s view, this course will introduce lexical meaning, the semantic relationships between the words, and the meaning of the sentences and discourses in Korean language. And the point of Pragmatics’s view, it will deal with various aspects of utterance meaning in real contexts.

705.534A 국어생활사교육론연구 3-3-0

Studies in the History of the Life in Korean Language

국어사전의 구조를 고찰하고 파악하는 단계를 넘어서, 현대국어의 기원과 원천을 살펴보고, 이를 바탕으로 현재의 국어사용을 위한 발판을 마련하는 데 그 목적이 있다.

This course will focus on contrasting the past and present of the Korean language. Students will survey the linguistic family, phonology, morphology, and syntax of Korean chronologically, study the foundations and origins of modern Korean, and establish a cornerstone for effective Korean language use.
705.534 Studies in Teaching Poetics

한국 고전문학 작품 및 현대문학 작품을 아우르는 한국 문학 작품의 창작원리 또는 작품성을 중심으로 그 문학적 토픽을 탐구하고, 그 환경의 국어교육적 적용문제를 다룬다. 한국 문학 작품을 단순히 문학 작품으로 다루는 것이 아니라 그 창작원리를 밝혀봄으로써 국어교육에서 시급히 요구되는 방법론의 정립을 시도한다.

This course will focus on the aesthetic foundations of classical and modern Korean literature, centering on the creative principles or versification and exploring their educational application to Korean language teaching. Students will not simply treat Korean literature as a corpus of literary works but search for the creative principles to establish a literary methodology that is urgent to Korean language education.

705.535 Studies in Teaching Narrative

이 강좌는 서사의 본질, 개념, 구조 등을 규정하며 서사의 독특한 사용현상이 국어교육에서 어떠한 의미를 지니고 있는지 밝혀자 하는 것을 목표로 한다. 서사는 단순히 문학의 양식이 아니라 현대문화의 주요한 특징으로 자리잡고 있다. 이러한 점에서 서사가 국어문화에 갖는 영향과 그 교육적 의미를 밝히면서 국어교육의 지평을 확대하고자 한다.

This course will identify the nature, concepts, and characteristics of narrative and elucidate the implication of the widespread use of narrative in Korean language education. Narrative is not only a literary mode but also a major characteristic of modern culture. Students will thus expand the horizons of Korean language education.

705.536 Studies in the Educational Theatre

이 강좌에서는 교육에 대한 단순한 학습이 아닌, 총체적인 언어 활동의 일환으로 국어에 접근하여 포함된 국어교육을 도모한다.

This course will focus on not only the learning but also the total process of language use in terms of drama.

705.607 Studies in Teaching Reading

언어사용의 데 국민 중 ‘읽기’ 부분은 지금까지 비교적 그 연구 성과가 많이 검정된 편이다. 읽기 이론의 성과는 교재 구성, 교수-학습 방법, 교육과정 등에 직접적인 도움을 주는 중요한 영역이기도 한다. 이 강좌는 ‘읽기’와 관련하여 기존의 이론을 바탕으로, 교수-학습 과정에서의 측면과 읽기 활동에 요구되는 능력들과 그 기법원리의 탐색을 목표로 한다.

Of the four uses of language, reading is the area with the greatest accumulation of academic research. Indeed, reading theories have affected teaching materials, teaching-learning methods, and curricula. In this course, students will criticize various reading theories and explore the basic principles of teaching, learning, and competence of reading activities.

705.609 Seminar in Teaching Media Language

기존의 국어교육이 문자 언어 활동에 주관식을 두었다면, 현대사회에서 중요한 소통을 담당하고 있는 매체를 통해 이해되지는 새로운 언어 활동들에 대한 연구는 국어교육에서 중요한 의미를 가진다. 이에 대해야 언어는 국어교육의 중요한 연구 대상이 된다. 본 강좌는 특히, 방송, 영화, 인터넷 등 다양한 매체를 통해 나타나는 여러 가지 흥미로운 매체 언어들의 본질을 탐구하고 이를 바탕으로 국어교육의 새로운 방향성을 탐구하는 방대한 정립을 시도한다.

This course will focus on the aesthetic foundations of classical and modern Korean literature, centering on the creative principles or versification and exploring their educational application to Korean language teaching. Students will not simply treat Korean literature as a corpus of literary works but search for the creative principles to establish a literary methodology that is urgent to Korean language education.

705.610 Studies in Teaching Speech

말하기 교육에서 필수적인 것은 효과적인 의사소통능력의 신장을 어떻게 이룰 것인가 하는 점을 밝히는 것이다. 이를 위하여 본 강좌는 악성적 대화, 토론, 논쟁, 개입 등에 필요한 이론을 연구함으로써 말하기 교육의 깊이를 더하고자 한다.

To teach speaking, it is necessary to find a way of developing communicative competence. This course will further the development of Korean language education by studying theories on everyday conversation, discussions, argumentation, and oration.

705.611 Studies in Teaching Composition

국어교육의 한 영역인 표현에서 큰 비중을 차지하고 있는 것이 쓰기 교육이다. 이 강좌에서는 미리미지인 심의에서 생성된 발반이 어떻게 언어화되고 표현으로 연결되는데는 점을 고찰함으로써 작문과 관련하여 표현의 효과적인 교육방법에 대해 연구하고자 한다.

Writing education is important to Korean language education. This course will identify the writing process by studying how thoughts can be organized and expressed in language and exploring effective teaching methods.
효과적인 표현까지를 고려하며, 나아가서는 담화차원까지 고려하는 것이다. 이는 필자의 의도를 정확히 파악하고 이해하는 측면과도 연결된다는 것이다. 따라서 정확하고 효과적인 언어사용 능력의 신장 위해서는 국어 문장의 일반적인 표현원리를 바탕으로, 실제로 학습자의 발달단계에 따른 문장표현의 실태와 그 틀로 필요는 것이다.

In this course, “sentence” means more than a mere sentence. We must consider not only the principles and orthography but also the accurate and effective expression of the sentence because it is related to the writer’s intention. Students will study the general principles of expression in order to develop effective language competence and conduct research, and review sentence expression in terms of learners’ developmental stages.

국어교육학은 여러 학문을 기저학문으로 하는, 그리고 그 학문들 간의 학계적인 협동을 필요로 하는 성격의 학문이다. 이때 현대언어학은 문학, 심리학 등과 더불어 대표적인 국어교육의 기저학문으로 양면이 있다. 이 과목에서는 기저학문과 융합학문으로서의 현대언어학은 국어교육의 관계와 협동방향에 대해 연구하는 것을 목표로 삼는다.

Korean language teaching is based on various disciplines and requires interdisciplinary cooperation. Likewise, modern linguistics is based on both literature and psychology. This course will focus on the relationship and direction of cooperation between modern linguistics and Korean language education.

언어활동은 광범위한 사고 활동의 총체이다. 한국어를 가르치고 배웠을 때 음운이나 문법 혹은 어떻게 유창하게 말할 것인가의 문제를 넘어 더욱 중요한 것은 ‘말’ 속에 담긴 정서와 문화적 배경에 달해질 수 있다. 이 과정은 이러한 관점에서 문학과 우리말에 대한 표현적인 접근을 시도하여 ‘국어교육’의 기본 근거를 구축하는 데 초점을 둔다.

Language activities are the result of complex psychological activities. Thus emotions and cultural backgrounds are more important to teaching and learning Korean than are mere phonemes, grammar, and fluency. This course will take comprehensive approaches to Korean and focus on the basic structures of Korean language education.

문장풍에 대한 교수학습은 교육현장에서 가장 오래되고 중요한 과제 중의 하나이다. 문학적 글쓰기뿐만 아니라 비문학적 글쓰기에도 장르 학습이 중요하다. 이 강좌에서는 이러한 장르적 글쓰기에 대한 연구와 아울러 이를 바탕으로 효과적인 글쓰기 교육을 위한 장르 교육의 내용들을 탐색하고자 한다.

Teaching and learning composition are some of the oldest classroom tasks. Learning about genres is important not only in literary writing but also non-literary writing. This course will focus on the study of genre writing and explore the contents of teaching Korean-language genres for a more effective writing education.
written languages, students will be able to conduct effective research on the important principles of general language use. Our everyday language use as well as classical verbal materials will be the objects of study.

705.751 국어교육국제비교연구 3-3-0

International Comparative Study of native Language Education

이 강좌는 외국어에서 시각하고 있는 자국어교육의 현장을 탐색하고 이를 국어교육과 비교하면서 국제적인 안목을 가지는 것을 목적으로 한다. 자국어교육은 각 나라의 언어 환경, 역사적 전통, 사회·문화적 배경, 정치·경제적 제도와 맞물려 교유의 인간성, 언어학을 전제한 교육 목표를 추구한다. 이 강좌에서는 각국의 교육제도, 교육목표, 교육평가 등의 국제비교를 수행하여 시사점을 도출하고 국어교육의 새로운 방향을 모색한다.

This course aims to acquire global perspectives by exploring present state of national language education in various countries and comparing them with Korean language education. The national language education seeks indigenous educational goals involved with each country’s language environment, historical tradition, sociocultural background and political economic system. In this course, students will make international comparison about educational system, educational goals, curriculums, educational evaluation among countries and seek implications for improving Korean language education.

M1845.000200 통일 시대 국어교육 연구 3-3-0

Studies in Korean Language Education in the Unification Era

이 강좌는 남한의 표준어와 북한의 문화어에 대한 탐구, 남북한 국어교육의 실상에 대한 이해를 바탕으로 통일 시대 국어교육의 이론적 기반과 구체적 교육내용 및 방법 모색을 목표로 한다. 그러하여 북한 이탈 주민 대상 국어교육 연구, 통일 시대 국어교육과정 연구, 통일 시대 국어교수학습 연구에 기여하고자 한다.

The goal of this course is to search for the theoretical framework, specific contents and methods of Korean language education for the unification of Korea by studying South Korea’s standard language and North Korea’s cultural language, along with understanding the actual North-South Korean language education. Furthermore, this course aims to contribute towards the research of Korean language education for the North Korean refugees, Korean language education for the unification of Korea, and teaching and learning for the unification of Korea.

705.715 국어교육연구방법론 3-3-0

Research Methodologies in Korean Language Education

본 교과목은 국어교육 연구를 수행하는 데 적합한 연구방법론을 모색하고 이를 체계화하여 효과적인 연구논문 작성 방법을 익히고 나아가 국어교육 연구의 독자적인 방법론적 기틀을 확립한다. 특히 한반도에서의 한국어교육의 연구과정과 관련된 여러 요인들 간의 상호작용, 그리고 한국어교육과정 개발과 운영 등에 대하여 심도 있는 탐구를 진행하게 한다. 특히 한국어교육내용의 선정과 관계, 내용 체계의 조직과 원리를 언어 요인, 문화 요인과 결합시켜 집중적으로 논구하게 된다.

This course will explore various aspects of Korean language education for foreigners, the interaction among these aspects, and the development and management of Korean language curricula for foreigners. Topics will cover the identification and hierarchy of the educational contents and principles of content organization in terms of linguistic and cultural factors.

705.714 한국어음운교육론연구 3-3-0

Studies in Korean Teaching Phonology

언어학의 하위영역인 음운론에 대한 일반적인 지식을 바탕으로 개발언어학으로 한국어음운론을 학습하는 과정으로, 외국어로서의 한국어교육에 필요한 지식과 기술을 학습한다.

In this course, students will study Korean phonology on the basis of general knowledge of phonology as a subfield of linguistics. They will establish the knowledge and view-
points needed to implement Korean language education for foreigners.

This course will focus on the psychological mechanisms and cultural principles of Korean expression and different thoughts conveyed by various expressive styles. Special consideration will be given to the effect of foreign speakers’ linguistic and cultural factors. Students will explore effective ways of teaching expression in Korean and teaching-learning methods.

705.619 한국어교육법연구 3-3-0
Studies in Teaching Methods of Korean Language as a Foreign Language

이 강좌에서는 외국어로서의 한국어 교육법과 관련된 제반 요인들을 검토하고 효과적인 한국어 교수법의 방향을 고찰한다. 기존의 국어교육과 외국어교육의 교육법을 검토하고 언어학적 설명과 특성 등을 고려하여 박람한 한국어 교육법의 모델을 구축하게 된다. 특히 헐거운 교수법 등 최근에 많이 사용되고 있는 새로운 기법은 특별히 강조하고 한국어 교육법을 적극 도입하여 한국어교육의 새 방향을 논의하게 된다.

This course will review the overall factors related to Korean as a foreign language and explore effective teaching methods. Students will study current methods of teaching Korean and foreign languages, and design desirable Korean language teaching methods that consider the learners’ language-specific traits. Positive implementation of media-based teaching methods will establish new directions for Korean language teaching methods.

705.620 한국문화와 한국어교육연구 3-3-0
Korean Culture and Teaching Korean Language as a Foreign Language

한국어 학습자들이 한국어를 학습할 때 부딪치는 가장 큰 어려움 중 하나는 문화적 차이가arcer하는 어플사용의 난해함이다. 이 강좌에서는 다양한 텍스트를 대상으로 한국어 표현에 영향을 미치는 문화적 요소를 탐구하고 한국어교육의 문화원리를 도입하여 한국어 언어 교육에 대해 논의하게 된다.

One of the greatest difficulties for Korean learners is cultural difference in language use. This course will explore the overall cultural factors and discuss the cultural principles of Korean language education.

705.622 한국어교육실습 3-0-6
Practicum Teaching Korean as Foreign Language

이 과목은 한국어 교육을 학습한 대학원생들이 일선 한국어교육 현장에서 교육실습을 경험하도록 계획되었다. 한국어교육 관련 과목 이수를 통해 배운 지식과 교육법을 효과적으로 현장에 적용할 수 있도록 교육 실습을 이수하도록 하였다. 한국어 교사의 역량을 통해 한국어 교육의 이론적 적용 가능성과 문제점을 파악하고, 교육 방법에 대한 실질적 지식을 습득하도록 하여 그 방의 교사 역할, 수업 계획 및 외국인 학생에 대한 이해를 도모한다.

In this course, graduate school students with various Korean teaching theories will be provided with opportunity for full time practicum teaching at Korean teaching Institute to improve their teaching knowledge and theory. Students will serve as apprentice teachers and participate in all activity about teaching process.
This course focuses on evaluation, which is the final stage of Korean language education as a foreign language. First, we will examine language learning theories-Behaviorism, Innatism, Cognitivism-and second language acquisition theories such as contrastive hypothesis, monitor hypothesis, inter-language, critical period hypothesis etc. Students will attempt to elucidate the acquisition of Korean Language as a Foreign Language and also develop teaching-learning methodologies for Korean.

This class analyzes Korean classical texts and traditional culture in relation to teaching Korean as a foreign language. This class focuses on teaching classical Korean literature and traditional culture. It is the first course in the 2nd year curriculum in teaching modern Korean language, and students will learn about the selection, hierarchy, and organizational principles and systems of the contents of Korean language education as well as linguistic and cultural factors.

This course will study the factors related to Korean language educational curricula, their interaction, and the development and management of the curricula. Topics will cover the selection, hierarchy, and organizational principles and
This class analyzes modern Korean texts and modern culture in relation to teaching Korean as a foreign language and its implications. We will identify and explore the mode of expression and thought found in modern Korean literature and modern culture, which can be viewed as the crystallization of Korean language use.
대학원(Graduate School)

외국어교육과 영어전공(English Major, Dept. of Foreign Language Education)

학점구조는 "학점수-주당 강의시간-주당 실습시간"을 표시한다. 한 학기는 15주로 구성됨. (The first number means "credits"; the second number means "lecture hours per week"; and the final number means "laboratory hours per week. 15 weeks make one semester.)

706.704A 영어언어학연구 3-3-0
Studies in Applied Linguistics

영어언어학과 관련되어 있는 사회언어학, 화용론, 담화/기능적 문법, 사전학, 재미언어학과 같은 재 분야에 논의 되고 있는 이론적이고 실시적인 최근 연구들을 검토하는 것에 초점을 둔다. 특히 이러한 이론과 연구들이 어떻게 영어학습자들의 교육에 활용될 수 있는 것인지에 다룬다.

The course examines current theoretical and empirical research studies in applied linguistics such as sociolinguistics, pragmatics, discourse/functional grammar, lexicology, L2 assessment, and L2 acquisition. Students will survey and discuss how the theories and research studies can be utilized and adopted into teaching English to L2 learners.

706.705 영어교육론연구 3-3-0
Studies in ELT Theories

영어교육과 관련된 제반 이론과 최신 이론들에 대한 심도 있는 연구와 영어교육에 관한 이론적, 방법적 모형을 개발한다.

This course is an in-depth study of the recent theories in the field of teaching English. Students will attempt to develop their own theoretical and methodological models for English Language Teaching.

706.707 영어교재 및 교과과정 3-3-0
English Teaching Materials and Curriculum

영어교육과정과 교수-학습이론, 영어 교재 개발에 관한 이론과 실제를 검토하고 학교 교육에 적용할 수 있는 교육과정과 교재의 모형을 개발한다.

The course examines theories on curriculum/syllabus design and materials development theories. The students will then attempt to develop sample curricula and materials that will be applicable to classroom teaching.

706.708 외국어교육사 3-3-0
History of Teaching Foreign Languages

서양에서의 외국어(영어)교육의 역사와 우리나라에서의 영어교육사를 교육정책, 교수방법, 교재, 교사 등의 측면에서 다룬다.

This course deals with the European and Korean history of the English language education in regards to the educational politics and policies, the training of the teachers, materials, and special features of the schools themselves.

706.709 담화분석 3-3-0
Discourse Analysis

이 강좌는 담화 및 담화분석에서의 중요한 개념을 소개하고 실제로 화자들이 어떻게 언어를 사용하는가를 이해하기 위해 다양한 담화자료에 접근하는 다양한 분석법을 소개한다.

This course introduces the important concepts in discourse and discourse analysis. It highlights the different ways one can approach the various types of discourse data to discover how people actually use languages.
심화된 이해를 도모하고, 이를 바탕으로 보다 창의적인 영어 교육 방식을 모색하도록 한다.

This is an intensive study of major authors and literary achievements along with the relevant cultural phenomena. The course will also be designed to provide a critical perspective from which to investigate the various possibilities of the study of English education.

707.508 영어교육론특강 3-3-0
Topics in ELT Theories
외국어로서의 영어교육에 관한 제반 이론들을 연구, 검토한다.
 특히 최근에 논의의 초점이 되고 있는 문제들을 집중적으로 다룬다.

The students will perform an in-depth examination of theories and research in the area of teaching English as a foreign language. There will be a special emphasis on recent field developments.

707.514 영어교육평가 3-3-0
Evaluation in TEFL
외국어교육에서의 평가(Testing)에 관한 최근 이론들을 개관하고, 영어능력 평가방향의 작성, 분석, 결과 처리 등의 원리와 실제를 다룬다.

The course examines the recent theories in language teaching and deals with the theory and practice aspects of test writing, analysis and interpretation.

707.515 심리언어학과 외국어교육 3-3-0
Psycholinguistics and Foreign Language Education
언어습득, 이해 및 발현과정에 관한 심리언어학적 이론과 연구를 고찰하여 외국어 습득 및 사용의 심리학적 과정과 기제를 이해한다.

This course deals with the psycholinguistic aspects of foreign language acquisition and performance. It covers theoretical considerations and empirical findings on first and second language acquisition, comprehension and production.

707.516 사회언어학과 영어교육 3-3-0
Sociolinguistics and Teaching English as a Foreign Language
사회언어학의 기본이론과 방법을 개관하고 언어의 본질과 기능, 언어능력, 영어의 변이(특히 기능, 상황적 변이) 등에 관한 사회언어학적 연구결과를 외국어로서의 영어교육의 이론과 실제에 적용하는 문제를 다룬다.

This course deals with basic concepts and methods of sociolinguistics as the study of language and speech used in different social contexts. Special focus will be placed on these concepts and methods to teaching English as a foreign language.

707.517 미국소설연구 3-3-0
Studies in American Novels
미국문학의 중요한 시대, 주제, 혹은 작가를 중심으로 작품과 논문을 읽고 새로운 과제를 모색함.

This course studies major American fictions centering around their periods, themes, and authors.

707.518 영문학교육연구 3-3-0
Studies in Teaching English Literature
소설, 시, 극, 등 영문학작품 교육방법의 이론과 실제를 다루며, 외국어로서의 영문학교육에서 문학작품 교육이 차지하는 위치에 관한 문제를 검토한다.

This course studies the pedagogical problems in teaching different genres of English literature. In addition, related theories and probes into the practical uses of literature in English teaching will also be discussed.

707.519 영미현대문학연구 3-3-0
Studies in British and American Modern Literature
영미 현대문학의 특별적인 과제와 문제성을 특정 혹은 일반의 작품을 중심으로 연구, 검토한다.

This course studies special thematic aspects of modern British and American literature manifested in important works.

707.520 영미문학비평연구 3-3-0
Studies in British and American Literary Criticism
현대영문학비평의 중요한 텍스트를 출발점으로 하여 그 이론과 실제의 성과를 검토하고 평점과 해석과 개정을 논의한다.

This course examines issues, backgrounds, and prospects of modern literary theory and criticism via important related texts of British and American origin.

707.521 영미시연구 3-3-0
Studies in British and American Poetry
영미문학의 전통 속에서 현대에의 의미가 큰 일련의 작품을 선별하여 문학사적 조명을 하거나 특정 시대, 분야, 작가의 집중적인 연구를 한다.

This is an intensive study of a small number of prominent poets, British or American, from each period or movement.

707.522 영국소설연구 3-3-0
Studies in English Novels
영국문학의 중요한 시대, 주제, 혹은 작가를 중심으로 작품과 논문을 읽고 새로운 과제를 모색한다.

This course examines major British fiction centering around specific periods, themes, and authors.

707.523 영어음운론연구 3-3-0
Studies in English Phonology
영어음운론의 여러 이론들을 생산음운론, 그 중에서도 단소음운론의 이론들을 주 대상으로 연구한다.

This course studies the theories of phonology with an emphasis on generative phonology. Chiefly examined will be the theories of linear phonology.

707.525 영어형태론연습 3-3-0
Seminar in English Morphology
생산음운론, 그 중에서도 비단소음운론에 관한 학과 논문들에
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해당 집중적인 연구를 목적으로 한다.

This course provides intensive reading of books and papers on generative phonology with the emphasis on non-linear models of the theory.

707.526 응용언어학연구방법론 3-3-0

Research Methods in Applied Linguistics

응용언어학 및 외국어교육분야에서의 연구방법론을 다루며 연구 설계 및 통계분석에 관한 기본개념에 중점을 둔다.

The course covers research methodology in applied linguistics and TEFL, emphasizing fundamental concepts of research design and statistics.

707.527 영어통사론연구 3-3-0

Studies in English Syntax

영어통사구조의 분석과 기술에 관한 개괄적 연구이다.

This course is an introduction to the descriptions and analyses of English syntactic structures.

707.528 영어통사론특강 3-3-0

Topics in English Syntax

영어통사구조의 분석이론 연구이다.

This course investigates the theories on English syntactic structures.

707.529 영어학연구 3-3-0

Studies in English Linguistics

영어의 통사구조, 음운구조, 의미구조, 기타 영어학 분야의 주제를 선택하여 이를 집중적으로 연구한다.

This course is an intensive study of the sub-fields of English linguistics such as phonology, syntax, and semantics.

707.530 영어학연습 3-3-0

Practice in English Linguistics

영어의 통사구조, 음운구조, 의미구조, 기타 영어학분야의 주제를 선택하여 이를 집중적으로 연구한다.

This course is an intensive study of a subfield of English linguistics (phonology, syntax, or semantics).

707.531 영어교수법연구 3-3-0

Studies in Teaching English as a Foreign Language

영어(외국어)교육 분야의 이론 및 실제에 관한 논문작업 및 교육의 실
708.570B 프랑스어의미론 및 화용론연구 3-3-0

Studies in French Semantics and Pragmatics

본 강의에서는 전반적인 의미론 및 화용론에 관한 이론들을 고찰해 보도록 한다. 따라서 이전부터 문제되어오던 의미의 문제를 이렇게 기술할 것인가의 문제뿐만 아니라, 특히 현대 프랑스언어학의 의미론을 대표하는 기술언어학에 대해 살펴볼 것이다. 또한 불화용론이 내포하고 있는 사·단점을 통하여 발화이론과 같은 이타 언어학에 화용론이 미치는 영향 등에 대하여 접근해보는 것에 목적으로 한다.

이 is an advanced study of French semantic theories. Also, this course studies overall theories of French pragmatics, as well as influences of pragmatics on other linguistic sub-fields such as speech theory.

708.571A 프랑스문화교육론 3-3-0

Theories of Teaching French Culture

본 과목은 프랑스 문화교육에 대한 전반적인 방법론 및 교육보조재 등을 통한 실제 교수/학습 방법을 살펴보는 데 가장 효과적이고 실질적인 문화교육의 방법론들을 살펴보는 데 있다.

This course discusses pedagogical methodologies of French cultural education.

708.572A 프랑스어문법교육론 3-3-0

Theories of Teaching French Grammar

본 과목은 문법을 교수하는 데 있어 제기되는 다양한 문제점을 살펴보고 나아가 효과적인 문법교육방법을 모색하는 것을 목적으로 한다. 이를 위하여 현대 우리나라의 특수성과 고려한 문법 교수/학습방면에 관한 논의가 강조된 주요내용을 이루게 된다.

This course deals with issues concerning French grammar teaching.

708.575B 멀티미디어와 프랑스어교육론 3-3-0

Multimedia and French Didactics

본 과목은 불문법을 교수하는 데 있어 제기되는 다양한 문제점을 살펴보고 나아가 효과적인 멀티미디어 활용한 교육방법의 가능성을 살펴보는 것을 목적으로 한다. 이를 위하여 컴퓨터 등 다양한 멀티미디어 교육공학의 활용가능성을 신도 있게 다루게 된다.

This course examines the use of multimedia in teachings of the French language.

708.576A 프랑스어교수법의 역사 3-3-0

History of French Didactics

본 과목은 문법의사존의 전통 교수법에서부터 최근의 의사존접근법에 이르는 불문법의역을 개발해보고 각 단계별 특성들을 살펴보는 것을 목적으로 한다. 이를 통하여 역사적 변천 과정을 이해하고 각각의 방법론들에 대한 효용성 및 문제점을 살펴본다.

The course covers French teaching histories in the western world and in Korea in the areas of educational policy, teaching methodology, materials, teacher training and other related areas.

708.577A 프랑스어교육론 3-3-0

Theories of Teaching French

본 과목은 전통적인 교수법에서부터 청화교수법, 구조연습을 통한 교수법 등 다양한 불어교육과 관련된 이론들을 살펴보며 가장 나은 불어교육론을 모색해가는 데 그 목적이 있다.

The course covers in-depth studies on recent theories related to French teaching and attempts to develop theoretical and methodological models of French teaching.

708.578A 프랑스어학특강 3-3-0

Topics in French Linguistics

본 과목에서는 개별언어학으로서 프랑스어학에 고유한 이론들을 고찰한다. Ch. Bally의 문체론에 기원을 두고 있는 발화이론으로부터, A. Martinet의 기능주의 언어학, B. Pottier의 일반언어학적 인식, 보다 최근의 담화론과 Culioli의 이론에 이르기까지 다양한 프랑스 언어학자들의 제안을 주제별로 살펴본다.

Students in this course share a range of interests of French linguistics including: utterance theory originated from Ch. Bally’s stylistics; A. Martinet’s functionalism; B. Pottier’s general linguistics; The course also provides students with diverse suggestions of french linguists from a recent discourse analysis to Culioli’s theory.
French Didactics and Applied Linguistics

French didactics is considered as an independent academic field as well as a science since it has built its own theory based on empirical science. But a lack of related knowledges field as well as a science since it has built its own theory based on empirical science.

The ultimate goal of this course is to study how French didactics are related with the theories and practices of French didactics. Our goal is to study how French didactics are related with the applied linguistics such as sociolinguistics and psycholinguistics, and to apply the results of the study in applied linguistics such as sociolinguistics and psycholinguistics.

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Theories of French Communication Didactics

French Communication skills mean the abilities of reading, listening, speaking and writing in a given situation in French. In this course students examine aspects of diverse methods of teaching, specifically focusing on communicative approach with the intention of improving learner's communicative skills.

The ultimate goal of this course is to create communicative models for an educational field.

French Textbooks and French Didactics with Authentic Document

Study of French didactics and applied linguistics is to study how French didactics are related with the theories and practices of French didactics. Our goal is to study how French didactics are related with the applied linguistics such as sociolinguistics and psycholinguistics, and to apply the results of the study in applied linguistics such as sociolinguistics and psycholinguistics.

This is a study of pedagogical problems that arises in teaching different genres of French literature. So, it is important to make students read literary texts in language that student learn as well as to teach how to speak the language. The students will also examine related theories and practical use of literature in French teaching.

Methods of Teaching French Literature

This course focuses on studies of French contemporary syntax. This class is an intensive study of current theories on French syntax and minimalist linguistics. Especially, this courses focuses on studies of French contemporary syntax.
본 교과목은 비평이라는 장르의 발전과정을 살펴보고, 전통적인 비평방법부터 구조주의 비평, 정신분석 비평, 실존주의 비평 등 다양한 이론을 탐구한다. 또한 이론들을 실제 문학텍스트에 적응시켜 분석해보도록 한다.

This courses studies the development of criticism and examines from traditional criticism to structuralist criticism, psychoanalytical criticism, and existentialist criticism. Additionally, students apply these theories to actual literary texts.

본 교과목에서는 프랑스어교육과정 및 교육과정에 관한 이론들을 검토하고, 학교교육에 적용할 수 있는 교육과정 모형을 개발한다.

This course examines theories on French curriculum and curriculum itself, and students will attempt to develop sample curricula that will be applicable to classroom teaching.

전공과 관련된 대학원 석박사 학위 논문을 연구한다.

This course helps students prepare their graduate theses.
Topics in German Literary Trend

The course focuses on the trends of the German literature. It discusses the theoretical, historical, and cultural aspects of German literature, including the development of German literature from the Renaissance to modern times. The course also covers the major literary movements and figures that have shaped German literature over the centuries.

Analysis of German Fiction

The course analyzes the theories and methods of analyzing German fiction. It covers the major approaches to the analysis of German fiction, including narrative structure, character development, and thematic concerns. The course also explores the cultural and historical contexts of German fiction.

Studies in Teaching Modern German Literature

The course examines the teaching of modern German literature in the classroom. It covers the methods and strategies for teaching modern German literature, including the use of multimedia resources and technology in the classroom. The course also discusses the role of literature in fostering creativity and critical thinking.

Teaching of German Language Education

The course covers the teaching of German as a foreign language in education. It discusses the methods and strategies for teaching German as a foreign language, including the use of technology and multimedia resources. The course also explores the role of German language education in fostering cultural understanding and intercultural communication.

Theories of German Linguistics

The course provides an in-depth study of the structure of the German language and its related phenomena. It discusses the linguistic and semiotic aspects of German language, including phonetics, morphology, and syntax. The course also explores the role of digital technologies in language teaching and learning.

Comparative Study of Korean and German Child and Youth Literature

The course examines the literature for children and youth in Korea and Germany. It covers the major literary movements and figures that have shaped children's and youth literature in these countries, including the role of literature in fostering creativity and critical thinking. The course also explores the cultural and historical contexts of children's and youth literature.

Reading literature is a way of communication. From this viewpoint, this course discusses the concept, principle, model, techniques, etc. of intercultural communication, and examines foreign literature education in Korea in terms of intercultural communication.

This course covers the core content of German as a foreign language and the history of its theoretical development.

This course involves the effects of the current German literature. It covers the formation and the critical development of German literature. The course also explores the role of literature in fostering creativity and critical thinking.

This course analyzes the “Deutsch als Fremdsprache (DaF: German as a foreign Language)” teaching method that is currently used in Germany. Students will also search for ways to improve the DaF education in Korea.

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Children’s and youth literature is becoming the topic of prime interests in the literature writing and literature education. Against this background we will compare Korean children’s and youth literature with that of Germany and will draw some generalizations available therein. With respect to both sides (Korea and Germany) we will pay special attention to the concepts, development processes, research trends, the analyses of the concrete works based on themes and forms and finally national identities and images portrayed in both literature traditions.

**709.549**  
Youth Literature and Media

Choo-shoon's modernist interest in a variety of media and media form is an advantage that is uncommon in Korean literature. In this context, this course intends to provide an overview of the historical development of media and media form, and to analyze the modernist works of Choo-shoon through the lens of media and media form.

**709.550**  
Intercultural Approach to Teaching German Literature

This course focuses on the techniques and methods of teaching German literature from an intercultural perspective. The students will study the different cultural contexts of German literature and analyze the works of German writers from various countries and cultural backgrounds.

**709.553**  
Multicultural Education in the German Speaking Countries in Europe

This course examines the policies and practices of multicultural education in German-speaking countries. The students will study the different approaches to multicultural education in Germany, Austria, and Switzerland and analyze the challenges and successes of implementing multicultural education in these countries.

**709.560**  
Language Education and Multicultural Education

This course focuses on the relationship between language education and multicultural education. The students will study the theories and practices of language education in multicultural societies and analyze the role of language education in promoting intercultural understanding and respect.

**709.563**  
Studies in Translation of German Language

This course examines the theories and practices of translation in German. The students will study the different types of translation and analyze the challenges and opportunities of translating German texts into other languages.

**709.564**  
Studies in History of German Language

This course studies the historical development of the German language, focusing on its unique features. The course deals with Proto-Indo-Germanic languages, Proto-Germanic languages and their descendant languages such as Modern German and Modern English.
This course focuses on text linguistics, which is the basis for the analyzing the literary and non-literary texts. The students are expected to identify prototypes of textual organizations in German and apply them to analyze the Korean texts.

709,803 대학원논문연구 3-3-0

Reading and Research

본 과목은 학위논문작성과 관련하여 논문의 테마선정, 연구방법론 등을 지도함으로써 학위논문의 질적보완을 우선과제로 삼는다. This course helps students to prepare their graduate theses.

709,925 독일어권의 의식구조와 문화 연구 3-3-0

Studies in the Consciousness Structures and Cultural Patterns of the German Speaking World

본 과목은 유럽의 독일어권에 속하는 사람들의 의식구조와 문화를 살펴보고 서구/유럽의 타 문화권과의 상호비교를 통해 독일어권의 사고방식과 문화구조를 더욱 상세히 파악할 수 있는 능력을 기르는 목적으로 한다. This course investigates the consciousness structures and cultural patterns of the people in the German speaking world in Europe. In doing so we will take a comparative approach by critically considering the consciousness and culture patterns of the people in the non-German speaking countries in Europe. In terms of methodology, we will employ diverse analytic devices based on disciplines such as humanities and social sciences. Our aim for this course is to identify the prototypes of the consciousness and culture patterns stemming from the German speaking world. These findings will be closely linked to the interpreting processes of the diverse behavior patterns of the Europeans under investigation.

M1854.000300 독문학 교육과 영화 3-3-0

German literature education and film

19세기 말 새로운 영상기술로 탄생한 영화는 기록, 오락, 교육 등 다양한 기능을 수행하며 현대사회의 중요한 매체로 자리매김하였다. 인쇄술의 발명으로 책이 근대문명의 근간이 된 것과 마찬가지로 영화 및 디지털 영상매체는 21세기의 핵심적 매체로 발전할 것이다. 이러한 매체의 전환은 교육현장에서도 반영되어야 할 필요가 있다. 이 강의는 영화매체의 발전과 독립영화사에 대해 고찰하고, 문학과 영화의 매체적 특성 및 개별 작품을 분석하며, 독문학 교육에서 영화의 활용방안에 대해 논의할 것이다.

The film, which was born as a new technology in the late 19th century, performs various functions such as recording, entertainment and education. It has become an important medium in modern society. Just as the invention of typography became the foundation of modern civilization, film and digital image media have developed into a key vehicle of communication in the 21st century. The transition of such media needs to be reflected in the educational field. The seminar will examine the development of film media and German film history and analyze the media characteristics and individual works of literature and film. The course will also discuss ways to use films in the German literature education.
History of Social Sciences Education

This course critically examines the history of social sciences education in Korea, with an overview of various educational materials since the mid 1940s.

Objectives in Social Studies

This course critically investigates the specific objectives of social sciences education.

Methods in Teaching of Social Studies

This course provides an in-depth study of teaching methods in social studies. Students will review and discuss critical analyses of recent theories and practices on teaching methods. They will also perform an experimental report of critical reviews and application of cognitive learning methods. They will also perform an experimental report of critical reviews and application of cognitive learning methods. Students will review and discuss critical analyses of recent theories and practices on teaching methods in social studies. Students will review and discuss critical analyses of recent theories and practices on teaching methods in social studies.

Teaching Materials of Social Studies Education

This course is a study of the philosophical, sociological, psychological and educational backgrounds of morality and moral education in civil society. Philosophical analyses concerning the typical nature of moral behaviour will be given. This course will describe and analyze the internalization process of the social norms from sociological, developmental-psychological, and epistemological viewpoints. This course also includes the evaluation of the typical nature of moral behaviour and the internalization process of the social norms from sociological, developmental-psychological, and epistemological viewpoints.

Teaching of Political Education

This course is a study of the philosophical, sociological, psychological and educational backgrounds of morality and moral education in civil society. Philosophical analyses concerning the typical nature of moral behaviour will be given. This course will describe and analyze the internalization process of the social norms from sociological, developmental-psychological, and epistemological viewpoints. This course will also include the evaluation of the typical nature of moral behaviour and the internalization process of the social norms from sociological, developmental-psychological, and epistemological viewpoints.

Teaching of Economic Education

This course is a study of the philosophical, sociological, psychological and educational backgrounds of morality and moral education in civil society. Philosophical analyses concerning the typical nature of moral behaviour will be given. This course will describe and analyze the internalization process of the social norms from sociological, developmental-psychological, and epistemological viewpoints. This course will also include the evaluation of the typical nature of moral behaviour and the internalization process of the social norms from sociological, developmental-psychological, and epistemological viewpoints.
1917.

This course is designed for those interested in economic education. It will cover several theoretical frames and issues related to the study of economic education. The focus for each semester will vary to reflect the most current issues in economic education.

710.712 사회교육학과목

Topics in Social Studies Education

확률에서 학습한 사회문제의 기초적인 이론을 바탕으로 하여 정신병, 알코올중독, 청소년문제, 범죄, 불평등, 가사갈등, 만년, 직접 의식과 직접적 관계, 사회의 문제들 등 여러 사회문제 중에서 특정한 주제를 정하여 간단히 연구에 가는 학생들의 과목이다. 학부의 사회과학과목을 선수과목으로 하며, 사회과학과의 직접한 관련을 위하여 교육문제인 관점에서 이 과목을 취급하고 가끔씩 청소년문제, 가사갈등, 불평등 등의 문제에 집중하도록 권장한다.

사회문제에 관한 사회과학과의 과학적인 연구결과를 검토하고 한국사회를 대상으로 하는 사회교육에 중점을 둔다.

Students will study contemporary social problems in Korea such as mental problems, alcoholism, juvenile delinquency, value conflicts, violence, and sexism. They will develop their own arguments and propose solutions to the problems.

The emphasis will be on the critical analysis of the literature, individual research on the topic, collection and analysis of materials, and an in-class paper presentation. Questions, suggestions, opinions and discussions are encouraged.

710.713 사회교육학과목

Topics in Philosophy of Social Studies Education

이 과목은 현재 중등 사회과 교육자들에게 철학의 기본 지식을 제공하고 철학적 사고를 심화시키기 위한 것이며 철학의 기본 개념들을 역사적으로 그리고 체계적으로 다루는 것이다. 철학, 도덕, 범죄, 권리, 의무, 국가, 자유, 정의, 형벌 같은 개념들과 역사주의, 전통주의, 사회주의, 자본주의 등에 대한 비판이 실재적으로 분석하고 평가한다.

This course is to provide future teachers of social studies with basic philosophical knowledge and a philosophical way of thinking. It tries to teach students how to approach the topic of research from theoretical and systematical perspectives. Basic concepts such as politics, morality, law, rights, duties, the state, freedom, justice, and punishment are critically reviewed, while current issues such as historicalism, positivism, socialism, and capitalism are analyzed and critically evaluated.

710.741 사회교육연구방법

Research Methods in Social Studies Education

이 과목은 시민 사회 및 사회과 교육 현상을 탐구하기 위한 연구 방법론 강좌로, 실증적 연구 방법으로 해석할 수 있는 것을 목적으로 한다. 이를 위해 점진적 연구의 설계 및 실행과 관련된 이론적 논의를 통해 학생들이 직접 연구를 설계하고 실행할 수 있는 방법론적 기반을 제공한다.

Students will be taught qualitative research methods and practices.

This course critically analyzes social studies literature and materials. The emphasis is on the aims and objectives of social studies, construction of curricula, teaching methods, and evaluation strategies. Social studies is involved in and synthetically examines the fields of politics, economics, geography, historical science, and cultural anthropology, especially in middle school. Students will select a problem and develop a paper for problem-solving.

711.506 사회교육과학

Studies in Social Studies

사회과학의 목표, 교육과정 구성, 지도방법, 평가 등에 관한 최근의 연구동향을 이해하고 문헌을 분석함으로써 연구중심으로 수업을 진행하는 데 이 과목의 특징이 있다. 사회과학은 정치학, 경제학, 사회학, 역사학, 문화인류학 등의 사회과학과 배경으로 심화 연구를 진행하기 때문에 이론적 목표에 중점을 두 것이다. 정치, 경제, 사회학, 역사학의 영역에서 최근의 연구 동향과 관련문제 등은 실증적 연구의 설계 및 실행을 한다. 이 과목은 사회과학과의 통합과목을 전환하고 있는 중학교의 과정에서 특히 중요한 역할을 한다. 학생들은 이 영역에서 일반 사회과학적 과제를 발전시켜 집중적인 연구를 하는 것이 좋다.


The main theme of this course is "Civic approach toward the labor market and inequality structure in Korea." Regarding the labor market issue, we will explore: (i) how
the Korean labor market is changing, (ii) what is going on in the current Korean labor market, (iii) what paradigms can be used to analyze the labor market, (iv) whether the Korean labor market is segmented or homogeneous, (iv) how the labor market and occupational world will be changed, etc. Concerning inequality structure, we will examine the following: (i) what paradigms can be used to explain the existing stratification structure in Korea; (ii) how upper/middle/lower class people differ in their thinking style and identification; (iii) whether the lower class can now mobilize into middle or upper classes in Korea and if so, whether it is easy or difficult; (iv) whether extremization of stratification occurs in present day Korea, or if it is just an agenda created by politicians; (v) the policies that are in place to reduce the degree of inequality in Korea, etc. The course will also explore how Social Studies education deals with these types of issues.
Studies in Economic Society and Education

이 교과목은 다양한 연구주제들을 기반으로 하여 경제교육의 이론과 목표 및 교육과정 이론에 의해 구성되어진 경제학습 내용이 경제적 환경과의 상호작용과정을 중심으로 어떻게 교육현장에서 교수-학습이 될 수 있는가를 연구하는 데 그 목표가 있다. 이러한 과정에서 경제교육내용의 구조화나 경제사회화과정 및 경제적 개념의 형성 등은 중요한 교과내용이 된다.

The goal of this course is to study how to teach and learn economic education contents, which is constructed by the curriculum, by dealing with the students' economic cognition and their communication with economic environments. The main topics are the structuralization of economic education contents, economic socialization, and understanding of economic education.

Studies in Economic Education Issues

이 교과목은 다양한 연구주제들을 기반으로 하여 경제교육분야에서 학위논문을 쓰려는 학생들에게 기존의 경제교육분야의 연구들을 바탕으로 검토하고 종합적으로 이해할 수 있도록 한다. 대표적으로 경제현상 탐구의 비판문제, 경제현상의 이해에 있어서 제재현상의 통합의 문제(경제교육 내용으로서), 경제적 참여를 위한 기능의 문제, 경제적 가치와 규범의 문제 및 교수학습의 국지화 경향, 그리고 경제의 발달 등이 있다.

Students, who want to write a thesis on economic education, will critically examine and synthetically understand existing research papers. The topics are integration of many social phenomena for understanding economic phenomena (such as educational contents of economic education), skills of economic participation, economic values and norms, localization trend of teaching and learning, and the development of an economic mind.

Studies in Economic Education

경제교육의 방법론과 함께 지금까지의 경제교육의 연구결과들을 종합해 보고 현재의 상황을 분석해 볼수 있는 바람직한 개선책을 찾도록 한다. 주로 이론적인 추론에서는 경제교육의 개념 및 성격, 방법론, 경제교육에서의 주요개념 등이 논의된다. 이러한 연구들을 통해 경제교육의 내용, 경제교육과 관련된 목표와 가치, 학습자의 요구조건, 교육의 방법, 경제교육의 평가의 문제 등이 주요 관심사가 된다. 이러한 것들은 중등고등학교 경제교육의 교육과정과 관련하여 논의될 것이다.

This research seminar course will focus on the issues of elementary & secondary economic education. The topics to be considered include economic literacy, economic decision-making ability, effective economic education program, the community as a learning resource, the evaluation of student learning in economic education, and ideological problems. The purpose of this course is to provide graduate students with the knowledge and issues they need to deal with effectively within their research projects on economic education.

Social Change and Education

한국사회에서 전개되고 있는 사회변동의 여건을 검토하고 이러한 변동이 교육에 미치는 영향을 분석하면서 변동에 대응하는 교육의 방향을 모색하려는 것이 이 과목의 목표이다. 사회변동에 대한 여러 이론의 검토, 산업화 및 통신기술의 혁명으로 대표되는 현대 사회의 급격한 변동, 이러한 변동에 대응하여 나타나고 있는 교육목표, 교육과정, 학습지도, 교육제도의 변화, 학교교육에 대한 학생의 주요 요구를 만족하고 있는 평생교육체제, 새로운 문제해결력을 기르는 사회과학교육의 방법론 등이 이 과목의 중요한 내용이 된다. 60년대 이후 계속되어 오는 교육과 국가발전의 관계도 살펴본다.

This course provides a study of social change in industrialized society and its meaning for education. The emphasis is on the theory of social change, change in educational objectives, the curriculum, the school system and teaching methods, lifelong education, and higher order thinking in social studies. Globalization and intercultural activities, understanding foreign culture and cultural relativism in social studies are also examined.

Social Problems

학부에서 학습한 사회문제를 기초적인 이론을 바탕으로 하여 정신병, 알코올중독, 청소년문제, 범죄, 불평등, 가치갈등, 민권, 적립의식과 적립관, 남녀의 성문제 등 여러 사회문제 중에서 특정한 주제를 정하여 깊이 있게 연구해 가는 대학원의 과목이다. 학부의 사회문제연구를 전문학과로 하여 사회과학교육과의 적절한 관련을 위하여 사회문제를 관리자로서 이 문제를 취급하고 가급적 청소년문제, 가치갈등, 불평등 등의 문제에 집중하도록 권장한다. 사회문제에 관한 사회과학자들의 과학적 연구결과를 검토하고 한국사회를 대상으로 하는 사회조사에 중점을 둔다.

Students will study one or two contemporary social problems in Korea such as mental problems, alcoholism, poverty, crime, juvenile delinquency, value conflicts, violence, or sexism, and develop their own arguments and solutions to such problems. The emphases will be on the critical analysis of the literature, individual research on the topic, collection and analysis of materials, and the presentation of a paper in class. Questions, suggestions, opinions and discussions are encouraged.

Methods of Social Sciences

이 과목의 목표는 학생들이 훗날 여러 가지 사회과학 방법론과 그 의미를 인식하며 하여 사회과학 연구를 올바르게 수행하는 데 도움이 될 수 있게 하는 것이다. 논의의 주 내용은 사회과학 방법론의 특성, 사회과학 지식의 인식론적 기초, 그들의 철학적 배경, 사회과학 연구의 기법, 그들의 장단점 등이다. 이들 방법론들이 실제로 어떻게 적용되고 있는지를 알기 위하여 최근 저작들을 고찰한다. 특히 다목적적인 사회과학 방법론을 개발하기 위한 시도도 이루어진다. 사회과학에 관한 가치중립적인 사회과학 연구와 함께 가치문제를 결코 무시할 수 없다는 사실도 무시하지 않는다.

This course is aimed at equipping students with a thorough understanding of different methodologies of social sciences and their implications, so that they can properly carry out research in the field. Discussions are concerned with the
characteristics of the methodologies in social science, epistemological backgrounds, various techniques in social science researches, and their strong points and limits. Recent publications in the field are examined in order to see how these methodologies are practically applied, and attempts are made to develop more appropriate methods of social studies education. It does not lose sight of the fact that in social studies education, value-oriented aspects of education may be also honored side by side with value-neutral social scientific researches.

711.556A 法律教育특강 3-3-0

Topics in Law-related Education

이 강좌는 중등학교 사회과 교육내용에서 다루어지는 법학의 체계적 영역을 중심으로 탐구한다. 특히 법률교육의 내용구성, 지도방법 평가 등에 관하여 최근의 연구결과와 관련해 논평, 분석하고 그 목표와 측정방법을 제시하는 데 이 과목의 기본적 목표가 있다. 법의 이해를 위한 이론의 하에 학생들의 법률교양, 법의 이해에 대한 대조적 측면에 관하여 중심적으로 연구한다. 법학의 핵심부분에 관한 연구가 법률교육의 차원에서 한국사회의 규범에 대한 가치관 연구, 중등교육과정에서의 교육내용의 문제분석과 해결방안에 대한 연구가 중심이 된다.

This course is a topic-centered inquiry about law-related spheres in the social studies curriculum at secondary schools. It deals with the analysis and investigation of recent research tendencies, teaching materials, teaching methods, and evaluation in relation to law education. The course will investigate in particular, the legal consciousness of the students, their observance of the law, the social norm in Korea, problems of the law education curriculum, and solutions to such problems.

711.558 현법학연구 3-3-0

Studies in Education of Constitutional Law

한법의 기본원리를 재인식하고 이를 바탕으로 권력형상성의 현법학적 삼관관계를 연구한다. 그리고 이를 통해 권력운영에서의 정치적 권력론의 본질에 관한 측면에서 논평해 보고 이를 함께 통치하는 과정을 분석한다. 다음과 같은 분석을 토대로 전체적 정부형태, 입법적 정부형태 등에 대해 자체한 연구가 진행될 것이며, 이를 함께 기본권의 보장이란 측면에서 기본권의 관계, 자원권, 사회권 등의 논제를 검토할 것이다. 마지막으로 민주정치와 다임주의, 현법과 정치 등에 대해 연구할 것이다.

The purpose of this course is to recognize the basic principles of constitutional law and study the relationship between constitutional reality as a consequence of power struggle, and normative constitutional law as the means of power struggle. Specific topics include discussing the nature of political power as a series of political processes and ruling processes, studying the despotic and constitutional polity, and the relationship between basic rights, civil liberties, and social rights, and finally inquiring about the relationship between the democratic government and pluralism, and the also between constitutional law and politics.
This course offers the philosophical analysis and critical appraisal of a selected social thought which, directly or indirectly, does, or are expected to, exert considerable influences on modern society. The particular topic will be selected out of the social philosophies of Hegel, Weber, Habermas, and Giddens, and system theory and postmodernism. The topic is investigated and evaluated not only for its own consistency and validity, but also for its relevance to the Korean situation and applicability to social education.

711.669 Korean Social Thoughts and Civic Education

본 과목은 한국의 전통사상이 역사적으로 시민교육에 있어서 어떠한 이념적 방향을 제시하여 왔는가에 대한 고찰이 주된 내용이다. 이를 위해서 학생들은 유교, 불교, 도교의 전통사상을 다각도로 조명하며 현대사회에 있어서 그러한 사상적 전통은 어떤 차원에서 고려되어야 하는지 검토하는 것이 주된 활동이 될 것이다.

This course is aimed at seeking how Korean traditional thoughts have historically provided the direction of citizenship education. For this, students must critically discuss Confucianism, Buddhism, and Taoism from many perspectives.

711.803 Reading and Research

This course is aimed at equipping students with the thorough understanding for writing dissertations.
대학원(Graduate School)  社会교육과 역사전공(History Major, Dept. of Social Studies Education)

710.714A 역사이론과 역사교육 3-3-0

Theories of History and History Education

“역사란 무엇인가”라는 역사 자체의 학문영역에 관한 본질을 이해하고 이것이 역사교육에 시사하는 바가 무엇인지를 밝힌다. 특히 역사 인식으로서의 학문성과 일반화의 문제는 역사교육에 필수적이다.

This course is designed to help students understand the disciplinary nature of history and its implications to history education. In addition to this issue, this course deals with problems of historical consciousness and historical generalization.

710.715 사회과학과 역사교육 3-3-0

Social Sciences and History Education

역사가 인문과학이나 아니면 사회과학이나 하는 것은 오랜 논쟁의 대상이다. 그러나 역사이해에 사회과학의 방법론이나 개념을 이용하는 것은 점차 일반화되고 있는 추세이다. 따라서 역사교육에서 사회과학에 대한 이해 역시 필수적이다. 특히 사회과학의 역사적 이해하는 데 필요하다.

This course investigates the disciplinary basis of history education and its relation with social sciences. It also examines research methods in social sciences which can be applied to history education.

710.716 역사교육목적론 3-3-0

Objectives of History Education

역사교육을 통하여 교육목표의 세 영역, 즉 이해, 태도, 기능면에서의 목표선정이 가능한가를 찾아본다. 역사적 사고력의 어떻게 기를 것인가와 더불어 전통과 문화재의 계승 발전은 물론 국제이해의 측면에 유념한다.

In this course, Students will be encouraged to ponder upon the following questions: What are the educational objectives of teaching history? How can we organize them into different domains of understanding, attitude, skill, and value? What is historical thinking and how can we promote it in the students' minds? These are the main topics of this course.

710.717A 역사교육과정론 3-3-0

Curriculum in History Education

역사교육은 시간, 즉 과거와 변화를 다루는 특성이 있다. 이를 감안하여 그 교육 내용의 선정에 있어서 특유의 범위와 연계성을 고려하여야 한다. 특히 내용의 구조화와 초·중·고 각 과정의 차이를 연구하여야 한다.

This course deals with the selection and organization of contents to be taught in the curriculum of elementary and secondary level school history courses.

710.720 역사교육의 심리학적 기초 3-3-0

Psychological Preliminaries in History Education

역사교육에는 습득해야 할 특유의 영역이 있다. 시간의식, 관련 의식, 이해의식 등이 그것인데, 이러한 의식은 아동의 심리적 발달, 즉 성장과정에 따라서 다르게 습득한다. 이 과목에서는 이러한 심리발달과 역사인식의 관련성을 파악한다.

Children’s concept of time and their understanding of history and consciousness are related to their psychological development. This course focuses on the psychological basis of history education.

710.721 역사교육사연구 3-3-0

History of History Education

세계 여러 나라에서 역사교육은 그 시대 및 당면한 상황의 반영이었다. 역사교육의 역할을 범위에 의한 선과 악용이 어떤 대로, 왜 일어났는지 알아본다.

Throughout history, history education is a mirror of its social context of time and place. Why and how did they teach history? How did they select contents to be taught? This course focuses on these issues.

710.723 역사교육재료론 3-3-0

Topics in Teaching Materials in History Education

사료를 다루는 것은 역사학뿐만 아니라 역사교육이 갖는 특유한 영역이다. 각급 학교에 적합한 사료의 개발과 활용방안을 연구한다.

This course deals with problems of selection and organization of original sources for the purpose of teaching history. It also develops ideas for using these materials in the classroom.

710.724 국사교육특강 3-3-0

Topics in Korean History for Teaching

우리나라 역사의 발전 형태를 추구하고 전통문화를 계승 발전시키는 데서 특히 주목되는 사료, 학설을 선택하여 연구·점검하고 그것이 한국사 교육에서 지니는 의미와 방법상의 효용을 알아본다. 여기에는 국제적 안목과의 조화라는 측면을 고려한다.

This course studies important historical events, documents, and interpretations which are regarded as significant in the historical and cultural development of Korea. In this regard, this course investigates the meanings and educational uses in teaching of Korean history.

710.725 세계사교육특강 3-3-0

Topics in World History for Teaching

세계사 구성의 이론적 근거는 무엇이며, 학교 교육에서의 필요성을 국제이해라는 차원에서 연구한다. 특히 세계사 내용 구성의 이론과 실제에 관하여 검토한다.

This course investigates the rationale and theoretical justification behind teaching world history at secondary level schools. A global perspective of world history education is emphasized.

710.727 한국외교관계사특강 3-3-0

Topics in History of Foreign Relation of Korea

고대에서 현재에 이르기까지 우리나라를 둘러싼 국제관계를 조망하고 각 시대의 대외관계를 역학관계를 중심으로 시대별, 시기별 특성을 살펴본다. 또한 동아시아 역사에서 우리나라의 국제관계와 동아시아의 역학을 파악한다.

학점구조는 “LECTURE HOURS”가 주당 실습시간을, “LABORATORY HOURS”가 주당 실습시간을 표시한다. 한 학기는 15주로 구성됨. (The first number means "credits"; the second number means "lecture hours" per week; and the final number means "laboratory hours" per week. 15 weeks make one semester.)
This course speculates about Korea’s foreign relations and their characteristics on the basis of power relationships and periods from ancient to modern times. It also investigates the stance of foreign relations taken by Korea in the history of East Asia.

This course is designed to help students understand characteristics of a traditional society of any given area or country in East Asia. The study of tradition is connected with its role and problems in modern transformation.
대학원(Graduate School) :: 사회교육과 역사전공(History Major, Dept. of Social Studies Education)

박사과정에서 설정되었다. 여기에서는 교육학과 역사교육의 관련관계, 역사교육의 이론 및 역사교육의 현장문제가 개괄적으로 다무어진다. 특히 교육학의 이론을 어떻게 역사교육에 활용할 수 있는가 하는 가능성의 문제와 이론을 구체화 분한다. 물론 이러한 이해를 돕기 위해서는 역사이론에 관한 기초적 이해도 요구된다.

This course is aimed to provide a basic understanding of important theories of history education. Main issues include the relationship between education and history education, the history of history education, theories of history teaching, and so on. In addition, the possibility of applying educational theories to history education will be examined.

712.502 역사교육연습 3-3-0
Seminar in History Teaching

역사교육의 이론과 박학 및 현장문제에 대한 특정 소재를 선정하여 그 학문적 연구를 집중하고, 새로운 이해와 연구를 모색하는 실험적 활동을 통해 역사교육 발전에 기여할 합적 기반을 다지는 한편 연구능력을 강화한다.

This seminar course deals with special topics such as the theories of history teaching, development of history education, problems in the history classroom, and so on. It also provides an opportunity for research in the field of history education.

712.503 역사교육연구법 3-3-0
Research Methods in History Teaching

역사교육론의 개념적 이해를 토대로, 역사교육 발전의 학문적 연구를 집중하고, 새로운 이해와 연구를 모색하는 실험적 활동을 통해 역사교육 발전에 기여할 합적 기반을 다지는 한편 연구능력을 강화한다.

Methodological and epistemological issues of research in history education are covered in this course. By investigating these issues, students are expected to enhance their research capabilities.

712.504 한국교육사 3-3-0
History of Korean Education

역사교육론의 개념적 이해를 토대로, 역사교육 발전의 학문적 연구를 집중하고, 새로운 이해와 연구를 모색하는 실험적 활동을 통해 역사교육 발전에 기여할 합적 기반을 다지는 한편 연구능력을 강화한다.

History education is covered in this course. By investigating these issues, students are expected to enhance their research capabilities.

712.505 국사교육연구 3-3-0
Studies in Teaching Materials for History of Korea

우리 역사의 다양한 학문적 이해를 토대로, 역사교육 발전에 기여할 합적 기반을 다지는 한편 연구능력을 강화한다.

This course deals with the issues of selecting and organizing teaching materials for important topics in Korean history, on the basis of historiographical research and educational considerations.

712.506 동양사교육연구 3-3-0
Studies in Teaching Materials for History of East Asia

이 과목에서는 세계사 교육에 필요한 교재로서 무엇이 있으며, 어떻게 학습에 사용할 것인지를 다룬다. 그 뿐 아니라 역사가 교수를 위하여 알아야 할 교재와 학생 자신의 학습을 위하여 제공되어야 할 자료를 연구하는 두 축면을 지니다. 물론 교재를 연구하는 과목을 비롯하여 사료, 구전, 역사지도, 유물, 유적, 시장과 자료 등이 다양한데 이 과목에서는 자료의 유무, 장단점을 가리며 단계에서 나아가 학교에 사용할 수 있는 자료의 개발이란 적극적인 차원까지 고려한다.

This course deals with identifying valuable teaching materials of East Asian History and discussing the suitable way to use them to teach effectively. The materials include textbooks, historical source materials, and audio-visual materials.

712.507 서양사교육연구 3-3-0
Studies in Teaching Materials for History of the West

시양사 교육에 적용할 교재에 관한 기초이론과 주요 교재에 대한 각론한다. 특히 서양사의 현장교육에 필요한 교재를 연구하도록 한다.

This course analyzes and develops effective teaching materials for Western history and discusses the theories for its teaching and learning.

712.509 한국문화연구 3-3-0
Studies in Korean Culture

우리나라 고대, 중세, 근대의 문화 및 그 발전에 관한 기초이론과 주요 교재에 대한 각론한다. 특히 시양사의 현장교육에 필요한 교재를 연구하도록 한다.

This course examines the cultural developments of ancient, medieval, and modern Korean society from historical and structural perspectives. It also deals with the main issues in the teaching and learning of Korean culture.

712.511 한국사상사특강 3-3-0
Topics in History of Korean Thoughts

한국사상사의 개념적 이해를 토대로, 한국사상사에서 주요한 기능을 담당한 특정사를 선정하여 그 사상의 형성과 전개, 전개의 기능 및 다른 사상과의 관련 등을 집중적으로 논고하여 한국사상사의 학문적 이해를 심화하고, 다발이 이 부문의 교육에 계제성을 제시한 한다.

On the basis of a general understanding of the history of Korean thoughts, this courses concentrates on important thoughts and ideologies in Korean history and deepens the understanding of their nature and functions in Korean society.

712.513 한국근대사연구 3-3-0
Studies in Modern History of Korea

우리나라 근대사회의 성립, 전개과정을 사회발전과 국제적 계
Very often, East Asian history is divided into two major periods, ‘traditional’ and ‘modern’, in terms of historical periodization. This course examines the difference of East Asian traditional history, especially traditional Chinese history, from its Western counterpart.

712.514 한국사학사연구 3-3-0

Studies in Modern History of Korean Historiography

This course investigates the formation and development of modern Korean society in the light of social transformations, national movements, and international relations.

712.515 한국대사연구의 동향 3-3-0

Recent Trends in Ancient History of Korea

This course examines new research topics, materials, and methods in ancient Korean history, in the light of teaching and learning important topics in this area.

712.516 한국중세사연구의 동향 3-3-0

Recent Trends in Medieval History of Korea

This course examines new research topics, materials, and methods in medieval Korean history, in the light of teaching and learning important topics in this area.

712.517 한국현대사연구 3-3-0

Studies in Contemporary History of Korea

This course investigates the formation and development of contemporary Korean history in the light of social problems, national movements, and reformation, in order to provide an overall understanding of the historical development of contemporary Korean history.

712.518 동양전통사회연구 3-3-0

Studies in Traditional Society of East Asia

This course is an advanced course in the history of East Asian thought. The philosophical and intellectual history of China is the main topic, among others. Active participation by students is necessary.

712.522 동양근대사연습 3-3-0

Seminar in Modern History of East Asia

A topic from modern East Asian history is chosen either at the request of students or by the faculty. The course requires active participation from students and a term paper on a selected topic.

712.523A 일본사특강 3-3-0

Topics in Japanese History

This class will handle subjects selected from events occurring during the Japanese history. Students will study various themes through the examination of numerous written and epigraphical texts.
712.531  서양고대사연구  3-3-0

**Studies in Ancient History of the West**

The main problems, issues and interpretations of the ancient history of the West are discussed and criticized in this course.

712.532  서양중세사의 제문제  3-3-0

**Problems in Medieval History of the West**

The main problems in the medieval history of the West and new trends in study are discussed and new directions are pursued in this course.

712.533  서양근대사특강  3-3-0

**Topics in Modern History of the West**

This is a seminar course investigating selected topics in modern Western history. Formation and development of modern Western society is the main topic to be discussed.

712.535  역사이론 및 방법론연구  3-3-0

**Theories and Methods in Historical Studies**

This course focuses on the issues of historical understanding as an essential basis for effective history teaching. Main topics include history and its relation to social sciences, historical generalization, historical consciousness, and so on.

712.803  대학원논문연구  3-3-0

**Reading and Research**

Students will discuss issues necessary for writing their dissertations with their advisors, such as selecting the topic, surveying the trend of subject, and determining the methods of study.
Seminar in Geographic Education

지리교육에 관한 제이론과 주제를 기초로 지리교육 전반에 걸친 제도를 집중분석 하여 아울러 사회교육과 내의 지리교육의 위치설정에 관한 이론적 바탕을 검토한다.

This course is a study of the topics related with the theories of geography education, and provides a survey of the theoretical bases related with the positioning of geography education in social studies education.

Studies in Landform of Korea

한국지형의 발달과정에 관한 최근의 연구를 중심으로 각 지역의 지형특성을 고찰한다. 지형발달의 이론과 실제를 야외답사를 통해 훈련한다.

This is a study of geomorphological characteristics of various areas in Korea. It provides training in both theoretical and practical aspects of topographic development through field surveys.

Instructonal Design and Teaching Methods in Geography

기본적인 지리교육에 필요한 기술과 방법을 이해하고, 새로운 교수이론과 학습전략을 수용할 수 있는 도델을 개발하여 방법론적으로 심화시킨다.

This course is a study of the basic skills and methods for teaching geography. It includes new teaching theories and study strategies.

Topics in Geomorphology

청식지형, 구조지형, 화산지형, 평야 지형, 카르스트지형, 기후지형, 해안지형 등에 관한 심화된 제이론과 연계방법론에 대하여 검토하고 이를 주제에 대한 지형학적 사례연구를 중심으로 토론한다.

This is a survey of advanced theories and research methods related to topographical characteristics.

Topics in History of Geographical Thought

지리학의 본질적인 발달과정을 각 시대에 지배적이었던 사고를 중심으로 재정립함과 동시에 체계화함에 특강의 목적이 있다. 구체적으로는 지리사상사의 분절과 문제점, 고대 지리학의 성립과 철학적 배경, 중세지리학과 중절지학, 근대지리학의 확립과 철학세계, 근 현대 지리학, 학리주의와 지리학, 남만주의와 지리학, 현대 지리학의 분절과 철학적 배경, 역사주의와 지리학, 한국 지리학 사상의 전개 등으로 나누어진다.

This course will survey the developmental process of geography. Topics will cover: the principals and problems of geographical thought; the philosophical background of ancient and medieval geography; the philosophy of religion; the establishment of modern geography; the evolutionary theory and geography; rationalism and geography; romanticism and geography; nature and the philosophical background of contemporary geography; historicism and geography; and the developmental of Korean geographical thought.

Climatic Geomorphology

지역의 상이한 기후하에서 형성된 지형발달의 과학적 연구를 한다. 상용한 기후와 지형발달 사이의 관계 설명에 중점을 둔다. 특히 기후 지형 발달의 이론과 실제를 터닝사를 통한 혼란한다.

In this course, students will conduct research on the development of topography under locally heterogeneous climates. Focus will be on the explanation of the relationship between heterogeneous climates and topographical areas through field surveys.

Fluvial Geomorphology

하천의 동적인 특성을 기법, 기간, 기업내색유형 및 대기기후편환 등의 종합적인 관점에서 분석, 검토한다. 특히 기후학의 원리와 최근 연구동향을 다루어 전문적인 연구자가 갖추어야 할 기초를 제공한다.

In this course, students will study the local characteristics of climate in relation to air pressure, air mass, and atmospheric circulation as well as new research trends.

Climatic Geomorphology

기후의 지역적 특성을 기법, 기간, 기업내색유형 및 대기기후편환 등의 종합적인 관점에서 분석, 검토한다. 특히 기후학의 원리와 최근 연구동향을 다루어 전문적인 연구자가 갖추어야 할 기초를 제공한다.

In this course, students will study the dynamic characteristics of river channels and the development of topography. Topics will cover hydrological characteristics, transportation, erosion, deposit, and angle of river slopes as well as current research trends.

Topics in Climatology

기후연구의 기초원리와 제문제를 역학적 측면에서 토론하고 소지역에 있어서 지료의 특성에 따라 나타나는 기후의 특성을 연구한다. 특히 소지역의 지형과 기후, 기압동과 풍력 생성상태와 기후 기초, 도시기후, 산림기후, 생기후, 기후의 주제를 체계적으로 다룬다.

In this course, students will study the basic principles and problems of climatological research and climatological characteristics based on the differences of the Earth's surface. Topics will cover local topography and climate, local wind and climate, urban climate, forest climate, and bio-climate.

Topics in Economic Geography Education

한 지역에서의 경제제도를 지리적으로 분석하기 위한 이론적 연구, 자수실험법 및 분석방법론을 연습한다. 이와 더불어 지리교육에서 핵심적으로 학습되어야 할 경제지리적 개념을 추출, 미개화한다.

In this course, students will study the theories and methods of data processing through geographical analyses of eco-
Theories of Urban Structure

- 575 -

This course will examine classical theories on inner-city structures, growth and division of urban structures, demographic data, population movement, differentiation of residential areas and city structures, functional areas, urban expansion, and traffic problems.

Studies in Urban System

- 575 -

This course focuses on school education to foster citizens of the world with the global vision keeping up with the age of globalization. Students are expected to develop their ability to utilize geospatial technologies in research and suggest strategies for the pedagogical use of geospatial technologies.

Remote Sensing and Geographic Education

- 575 -

In this course, students will study the establishment process and change of regional structure based on a historical view that focuses on a time-series analysis of settlements and economy.

Topics in Historical Geography Education

- 575 -

In this course, students will study geography curricula, learning guidance, and evaluation based on established goals of geography education.

Topics in Geography Education

- 575 -

In this course, students will study the relations among spatially distributed cities. Topics will cover the developmental history of urban system theories, system formation and urban growth processes, regional development and urban systems, and inner-city structures and systems through case studies.

Geospatial Technologies in Geography Education

- 575 -

In this course, students will study data collection, classification, analysis methods for land surface, and their application.

Remote Sensing and Geographic Education

- 575 -

In this course, students will study data collection, classification, analysis methods for land surface, and their application.

Population Geography Education

- 575 -

In this course, students will study data collection, classification, analysis methods for land surface, and their application.

Population Geography Education

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Population Geography Education

- 575 -

In this course, students will study data collection, classification, analysis methods for land surface, and their application.
This course aims to study some important theoretical and methodological issues in political geography. In addition, it seeks to discuss how to apply the conceptual ideas of political geography to the secondary-school geographic education. In particular, it will discuss 1) how the interactions of the basic components of the political geographic processes, such as territory, territoriality, power, state, boundary, etc., may influence the spatial expressions of political processes, and 2) how applicable these conceptual ideas are in the secondary-school geographic education. More specifically, it will encourage the students 1) to interpret such issues as election, territorial conflicts, local/urban politics, regional development, globalization, deterritorialization, etc. in terms of the political geographic perspectives, and 2) to think about concrete examples of political geographic issues that can be used in geographic education.

This course aims to develop students’ academic ability to properly understand and interpret some important domestic and international events and issues from the perspective of political geography. It also seeks to encourage students to discuss how to educate those events and issues to the students in middle and high schools. On this basis, students will be asked to think about what would be the appropriate methodologies of political geography education in middle and high schools.

This course deals with a variety of topics in the field of geographic information science. They include GIS-based spatial analysis, geocomputation, spatial optimization, GIS and society, GIS and social science, spatial cognition, and GIS and geographic education. An in-depth discussion is done for how GIS is utilized to develop a new teaching-learning scheme and to produce teaching materials in geographic education.

This course is concerned with major principles and techniques in spatial data analysis and spatial statistics. The main topics include the nature of spatial data, spatial point pattern analysis, geostatistical analysis, areal data analysis, and spatial interaction modeling. Implications of spatial data analysis for geography education are discussed in depth.

This course deals with main research topics in depth in the geography of education. They include the spatial equity of educational provision, the relationships between socio-economic segregation and spatial disparities in educational performance, and the spatiality of school choice. What concepts and analytical tools may be necessary to conduct a research in the geography of education is discussed. A critical review is done for each of the main topics. Writing and presenting a term paper is a core part in this course.
윤리학은 인식론, 형상학과 다리를 철학의 주요 분야이며 또 도덕 윤리 교육의 중요한 내용이다. 본 세미나는 우선 현대 윤리학의 주요 이론과 장점을 소개하며, 그 배경이 되는 인물과 사조에 대해도 깊이 있게 접근해볼 것이다. 그리하여 윤리론은 단지 추상적 사변의 결과가 아니라 현실 삶의 치열한 문제의식의 결과라는 것을 깨닫도록 하는 데 도움을 줄 수 있다. 심사하여 윤리이론은 단지 추상적인 사변의 결과가 아니라 현실 관해 집중적인 독서 응용 윤리 영역의 많은 문제들을 비판하고 검토해 보려고 한다. 또 도덕 윤리 교육의 중요 내용이다.

이 강좌는 최근의 철학적 인간학의 중요한 문제들을 다룬다. 예컨대, 인간의 본성, 사람다움의 폐리다임, 죽음의 의미, 인격을 이해하는 문제 등을 다룬다. This class will direct exclusive attention to Rawls’ vision of justice. His main work, A Theory of Justice (1971), presents a liberal, egalitarian, moral conception of justice as fairness-designed to explicate and justify the institutions of a constitutional democracy. The two principles of justice outlined in this book affirm the priority of equal basic liberties over other political concerns, and require fair opportunities for all citizens, directing that inequalities in wealth and social positions maximally benefit the least advantaged. In Political Pluralism (1993), his other major book, Rawls revises his original argument for justice as fairness to make it more compatible with the pluralism of liberalism. He argues that assuming that different philosophical, religious, ethical views are inevitable in liberal society, the most reasonable basis for social unity is a public conception of justice based in shared moral ideas, including citizens’ common conception of themselves as free and equal moral persons. The stability of this public conception is provided by an overlapping consensus.
본 과목의 목적은 동양윤리사상에 대한 이해와 그 특성 을 연구하는 데 있어서 필요한 동양의 주요 사상인 유가, 불가, 도가 등의 윤리철학적 개념 등을 제시하는 한편, 이들을 통하여 현대사회와 고인한 서양 일반적인 가치관 등으로 인하여 야기되고 있는 윤리적 문제점들에 대한 해결책을 마련하기 위한 윤 리사상과 학습 및 연구방법론 등을 모색하는 데 있다. 이를 위하여 유가 불가 도가의 주요 사상들의 인문성과 문제의 본형 그리고 변화과정 등을 비교한 동양윤리사상 연구에 대한 연구와 아울 럼사상의 사상가들의 윤리성찰을 간의 상이점등을 비교 분석하는 것을 본 과목의 내용과 범주로 한다.

The purpose of this course is to study concepts and ethics theories of Confucianism, Buddhism, and Taoism that are necessary in studying features and deeper understanding of Oriental ethics theory.

By doing this, students are trying to find out theories and research methodology that can be the solutions on ethical problems caused by Western oriented sense of moral value. The contents and scope of this course will be to study on Treatise of Human Nature and Ontology of Confucius, Buddha, and other great thinkers and general Oriental ethics thoughts together with comparing and analyzing the disparities between ethics thoughts of Western great thinkers.

714.533 동양윤리연구 3-3-0

Studies in Oriental Ethics

본 과목은 대표적인 현대도덕교육론을 고찰하고 한국의 중 동도덕교육과 교육에 출 수 있는 시점을 모색하는 데 중점을 둔다. 대표적인 현대도덕교육론에는 구성주의적 도덕교육론, 인 조직주의, 공동체주의의 도덕교육론, 배려교육론, 덕교육론 등이 포함된다. 이 과목에서는 이러한 현대도덕교육론들의 특성을 개별적으로 고찰한 후, 이들간의 관계를 비교연구적 관점에서 분석하고 한국의 중동도덕교육과 교육에 출 수 있는 잠재를 찾는 데 초점을 맞추고자 한다.

This course is intended to examine what are representative moral education theories and how these diverse theories can contribute to Korean secondary moral education. Representative moral education theories include a character education theory, a constructivist approach, a virtue approach of moral education, and so on. This course examine these theories in greater or lesser detail and then questions how they relate to each other, and investigate what they give implications for Korean moral education.

714.534A 현대도덕교육이론연구 3-3-0

Studies on Contemporary Moral Education Theories

본 과목은 사회적인 가치 문제들을 잘 이해하고 합리적인 가치 분석과 도덕적 판단능력을 기를 만드는 데에 그 목적이 있다.

This course is intended to increase students' understanding of problems regarding moral values, thus developing students' ability for reasonable value analysis and moral judgment.

714.543 도덕성발달연구 3-3-0

Studies in Moral Development

본 과목은 우리 나라의 민주적 발전과 교육을 담당하기 위한 청소년 대상 교육의 당면문제를 분석하고 그 해결방안을 모색하는 데 목적이 있다. 특히 선진 서구국가의 경험하고 있는 문제가 그들의 접근방안을 분석함으로써 우리에게 도움을 줄 수 있는 아이디어를 습득하게 한다.

This advanced course on democratic civic education will focus on the teaching programs developed in a number of advanced democracies.

714.544 신유가윤리사상연구 3-3-0

Studies in Neo-Confucian Ethical Thoughts

본 과목은 사회적 가치 문제를 잘 이해하고 합리적인 가치 분석과 도덕적 판단능력을 기를 만드는 데에 그 목적이 있다.

This course is intended to help students develop wide and deep views on theories and practices of moral and ethical education, and so on. This course examine these theories in greater or lesser detail and then questions how they relate to each other, and investigate what they give implications for Korean moral education.

714.551 국가안보와 통일연구 3-3-0

Research on National Security and Unification

본 과목은 학생들에게 이해하기 어려운 국제안보 개념을 보다 정확히 이해시키고, 안보정책 결정과정 및 중요성을 가르치며, 통일과의 관계성을 모르는 학생들의 목적이 있다. 한반도 분단의 특수성으로 인하여, 국가안보와 통일문제는 서로 분리할 수 없으며, 이는 정치, 외교, 국방, 경제 정책 등을 포함하는 보편적 이해가 필요하다. 또한, 남북한 능력을 비교하여 독일과 주요국들의 안보 정책 및 전략도 다룬다.

This course is designed to deal with the concept of national security, the process of policy making, and its relations to unification. Due to the peculiar condition of the division in the Korean peninsula it is not possible to separate...
national security from unification issues, which requires a comprehensive understanding from politics, diplomacy, defense, economy, etc. In addition, it covers national security policies and strategies around the East Asia region as well as those in South and North Korea.

714.553 통일교육연구 3-3-0

Research on Unification Education

본 강좌는 북한과 동일문제에 대한 이해를 바탕으로 통일교육에 대한 심층 연구를 목적으로 개설되었다. 특히 다문화적 균질성 사회에서 요구되는 통일교육의 사회적 및 교육적 가치와 목표에 대한 탐색하고, 다문화교육과 글로벌에듀케이션의 임금력을 적용하여 통일교육의 내실화 방안을 모색한다. 또한, 문헌 분석, 질적 또는 양적 연구 방법 등을 활용하여, 새로운 데이터를 구축하고 이를 분석하여, 논문 방법론에 기초하여 학술 논문으로 출판할 수 있는 연구를 진행할 것이 요구된다.

This course is designed to conduct in-depth research on unification education based on solid understandings of North Korea and unification issues. Especially, students will investigate curricula and pedagogies for unification education from multicultural and global education approaches so that it meets the need of the multicultural and global society. In addition, graduate students are expected to utilize content analysis, qualitative or quantitative research, collect and analyze new data, and develop a methodology-based research paper that can be published in an academic journal.

714.554 국제윤리연구 3-3-0

Research on Global Ethics

본 강좌는 사회성의 개념을 중심으로 다양한 국제 문제들을 살펴보고, 개인윤리와 사회윤리의 확대 개념으로 국제윤리의 이론적 문제를 모색한다. 국가 또는 국제단체들의 활동과 관련된 문제들에 미치는 규범적 윤리적 문제점을 개별 윤리학 이론들로 적용하여 분석한다. 또한, 환경과 건강 문제 등을 비롯한 전지구적 관심사에 대한 윤리적 해결 방안에 대해 모색한다. 문헌 분석, 질적 또는 양적 연구 방법 등을 활용하여, 새로운 데이터를 구축하고 이를 분석하여, 연구 방법론에 기초하여 학술 논문으로 출판할 수 있는 연구를 진행할 것이 요구된다.

This course deals with a variety of global issues by applying the concept of social justice and it also explore the theoretical framework of global ethics by extending individual and social ethics. By applying theories of ethics students analyze normative and ethical issues that affect people around the world as a result of multinational nations and international organizations. In addition, students also investigate ways of resolving global issues such as environment and health. Graduate students are expected to utilize content analysis, qualitative or quantitative research, collect and analyze new data, and develop a methodology-based research paper that can be published in an academic journal.

714.602A 아태지역도덕교육실태비교연구 3-3-0

Comparative Studies in Civic and Ethics Educations in Asia-Pacífic Education

도덕교육 및 민주시민교육은 사회의 공동가치를 기반으로 사회적, 문화적 통합과 민주주의의 기본 이념과 가치들을 확산시키는 데 박차를 가하고 있다. 따라서 본 과목은 그러한 과정에 보다 효율적으로 대처하기 위하여 아시아 태평양 지역에서의 시민윤리 교육의 실태적 상황을 비교 연구하는 데 중점을 두고 있다. 그러므로 본 과목은 중국, 인도, 일본, 싱가포르, 대만, 말레이시아 등의 아시아 태평양 국가들이 실제로 행하고 있는 도덕교육 및 민주시민교육의 실태를 비교 연구의 관점에서 직접 고찰하고자 한다.

The focus of this course is on issues in morality and citizenship, and how these issues pose challenges for education in the Asian context. The term “moral education” includes value education, virtue education, character education and other variations. The term “citizenship education” includes civic education, democratic education, political education, ideological education and other variations. This course will involve comparative education in moral and citizenship education among Asian countries including China, India, Japan, Singapore, South Korea, Taiwan and Malaysia.

714.604 민주주의와 시민윤리 3-3-0

Democracy and Civic Ethics

시민으로서의 권리에 관한 정치공동체에서 구성원이 되고 참여자가 되었을 때 가지야 할 실질적이고 규범적인 이상을 말한다. 이러한 의미에서 시민은 그들의 관심에 대한 윤리적 해결 방안에 대해 모색한다.

This course deals with a variety of global issues by applying the concept of social justice and it also explore the theoretical framework of global ethics by extending individual and social ethics. By applying theories of ethics students analyze normative and ethical issues that affect people around the world as a result of multinational nations and international organizations. In addition, students also investigate ways of resolving global issues such as environment and health. Graduate students are expected to utilize content analysis, qualitative or quantitative research, collect and analyze new data, and develop a methodology-based research paper that can be published in an academic journal.
양자의 특성을 바탕으로 또 오늘날 우리의 윤리 문제를 해결하는 데 필요한 통찰을 얻는 것이다. 원래 비교 연구란 쉬운 과제가 아니다. 이것을 제대로 해내기 위해서는 다양한 비교의 척도가 설정되어야 할 뿐만 아니라 우리가 이 양자 모두를 잘 알고 있어야 하는 기 때문이라고 할 수 있다. 근대 동양 윤리사상은 대체로 고대의 출신(先斎) 윤의, 도가 및 제자백인이 불교사상 등에 뿌리를 두고 있는 반면, 서양 윤리에는 조명과 함께 근대 사회가 그 중심이 되고 있어서 서면적인 비교도 우선 쉽지가 않다. 그럼에도 불구하고 우리는 동양윤리와 서양윤리가 서로 비교될 수 있는 중요한 특징들이 있다고 생각하며, 이 양자 사이의 공통점과 차이점을 찾아 냄에 유토록 서로를 더욱 잘 이해할 수 있는 중요한 통찰에 이를 수 있다고 본다.

이 세미나에서 우리는 동서양 윤리사상에 대한 비교적 연구를 통해 서양의 윤리사상과 동양의 윤리사상의 차이를 파악한 다음에 서양의 윤리사상과 동양의 윤리사상의 특성을 파악하고, 이를 맡으므로 서로를 더욱 잘 이해할 수 있는 중요한 통찰에 이를 수 있다고 본다.

### 714.725 한국사상특수연구 3-3-0

**Topics in Korean Thoughts**

학습자들은 한국사상에 대한 이해를 깊이화시키고, 한국사상과 서양사상의 차이를 파악하고, 한국사상의 특성과 서양사상의 특성을 비교적 연구하는 것을 목표로 한다.

**가치론연구 3-3-0**

**Studies in Axiology**

본 과목은 가치의 이해 심화를 목적으로 하고, 가치론에 관한 흐른 연구동향을 연구하는 것을 목표로 삼는다. 과목의 운영방법은 가치론에 관한 저서와 논문을 읽고, 현실 세계에 적용된 사례를 통해, 가치론의 이해를 깊이화시킨다.

**응용윤리연구 3-3-0**

**Studies on Applied Ethics**

본 과목은 현대 이기의 이해 심화를 목적으로 하고, 응용윤리에 관한 연구를 통해, 응용윤리의 특성과 학문적 근거를 파악하고, 응용윤리의 문제와 해결방안을 제시한다.

### 714.736 동양윤리사상특수연구 3-3-0

**Topics in Oriental Ethics**

동양의 사상적 상황에서 나타난 윤리적 문제를 다루고 그 값을 현대적 시각에서 재조명하는 데 중점을 둔다.

**이 사상 과목은 현대의 인간의 삶에서 나타나는 환경문제, 삶과 죽음, 재단과 징벌, 사회적 신뢰구축, 남북경제교류협력, 국제사회에서의 협력, 근본주의, 문화 및 전통 교류 차별, 상호 존중과 협력을 기반으로 하는 사회의 구축, 그리고 현대의 윤리문제를 해결하는 데 치중한다.**

본 과목은 현대의 인간의 삶에서 나타나는 환경문제, 삶과 죽음, 재단과 징벌, 사회적 신뢰구축, 남북경제교류협력, 국제사회에서의 협력, 근본주의, 문화 및 전통 교류 차별, 상호 존중과 협력을 기반으로 하는 사회의 구축, 그리고 현대의 윤리문제를 해결하는 데 치중한다.
Reading in Oriental Ethical Classics

This lecture will introduce the classics of Asia, which have introspection and wisdom about life, to students and will help their comprehension about the essence of classical ethical thought. Reading original texts such as the scriptures of Confucianism, Buddhism, and Taoism, the students will figure out how each school of thought forms their concepts of moral education. For the purpose, this course provides graduate students with biological understanding on mechanisms of moral judgment, and cross-cultural differences of moral judgment mechanisms, and neuroscientific criteria for the selection of moral exemplars and dilemmas.

Neuroscientific understanding of morality

The main objective of this course is to deepen the neurobiological understanding on mechanisms of moral judgment and explore the methods to promote secondary school students’ moral development. For the purpose, this course focuses on the social intuitionist model, the dual process model, and cross-cultural differences of moral judgment mechanisms, and neuroscientific criteria for the selection of moral exemplars and dilemmas.

Program development of character and moral education

The main objective of this course is to improve the ability to develop character and moral education programs. For this purpose, this course provides graduate students with plentiful opportunities to examine the internal and external programs for character and moral education, explore the methods and procedures for the development of character and moral education programs, and develop useful educational programs for character and moral development.
M1865.000200 시민성 교육특강 3-3-0

Advanced Topics in Citizenship Education

본 수업은 시민성 교육을 둘러싼 최근의 논의들에 대해 비판적
으로 검토한다. 본 수업은 주제 중심 접근법을 채택하여 매년 시
민성 교육을 둘러싼 다양한 주제들에 대해 탐구할 예정이며, 각
주제에 맞추어 세계의 여러 나라들이 어떻게 시민성 교육을 실시
해왔고 실시하고 있는지에 대해서도 또한 살펴볼 것이다.

The main purpose of this seminar is to examine some ma-
jor issues on citizenship education, including but not ex-
clusively teaching about economic inequality through
school-based citizenship education, theories of political social-
ization, the source of disparity in adolescents’ civic com-
petence and participatory profile, among others. This course
is a theme-based course, and not designed as a study of in-
dividual countries. However, in exploring the themes and
trends that have dominated recent studies on citizenship ed-
ucation, we will also learn about how a variety of countries
around the world have implemented and are implementing
citizenship education.

M1865.000300 현대정치사상연구 3-3-0

Studies in Contemporary Political Thought

본 수업은 근대에서 오늘날에 이르는 시기의 서구 정치사상사
와 주요 문제들을 다룬다. 우리의 일상생활에서 경험하는 불평등
과 부정의에 대한 관심에서 출발하여, 권위, 자유, 공정, 정의, 힘
(권력) 등의 주제에 대해 비판적으로 검토한다.

This course will explore a selection of major works in
Western political thought from the early modern period to
the present. Motivated by a concern for inequality and in-
justices in our everyday life, it will entail critical engage-
ment with the Western cannon of political philosophy.
Themes that will be covered in this course include, but not
exclusively, authority, freedom, fairness, justice, and power,
among other.

M1865.000800 시민교육세미나 3-3-0

Seminar on Citizenship Education

본 세미나는 시민교육에 관련된 국제비교연구에서의 최근 연구
동향과 논의들을 다룬다. 보다 구체적으로, 국제비교교육의 관점
에서 수행된 시민교육 관련 연구에서 나타나는 이론적, 방법론적,
이해요소기반 논제들을 비판적으로 검토할 것이다. 본 세미나를
통해 수강생들은 자신이 속한 사회 및 국가 공동체 내에서의 사회
적, 정치적 이슈들에 대해 이해하고, 나아가 지구 공동체의 구성원
으로 살아가는 데 필요한 윤리적, 도덕적 자질들을 내면화할 수
있다. 수업은 각주의 림에 대한 에세이, 발표, 문헌리뷰 및 연구
프로포저 작성가 행행한다.

The goal of this seminar is to introduce students to the
international and comparative aspects of citizenship education
and to explore how comparativists have engaged in the theo-
retical, methodological, and ideological debates in the field
of citizenship education. The seminar exposes students to the
social and political issues at stake in their society or nation,
and requires them to possess ethical and moral qualities nec-
essary for the global community. The seminar also offers an
opportunity for students to think through and write scholarly
papers on issues relevant to citizenship education from an in-
ternational comparative perspective through the production of
reflective summaries of weekly readings, a paper proposal,
and a final interpretative literature review.

M1865.000900 시민교육연구방법론 3-3-0

Research Methods in Citizenship
Education

본 수업은 도덕교육 및 시민교육 관련 연구를 체계적으로 수행
하는 데 필수적인 철학과 기법을 소개하는 데 그 목적이 있다. 주
된 강의 내용은 설명과 예측을 위한 개념, 모형, 이론 가설 및 변
수의 설정, 사료수집의 원칙 및 자료분석의 기본 등이 포함된다.
본 수업은 통해 수강생들은 기존의 도덕교육 및 시민교육 관련
연구에서 사용되어왔던 방법론을 이해하고 관련 문헌들을 비판적
으로 평가하며, 나아가 스스로의 연구를 설계하고 수행할 수 있다.

In this course students are introduced to the basic con-
tcepts and techniques that are used in citizenship education
research. The course is divided into three sections, which
cover social scientific inquiry and research design, data gath-
ering, and analysis. As a result of taking the course, students
should be able to: (a) demonstrate their understanding of the
basic principles and procedures of research methodology;
and (b) critically evaluate research studies in the field of cit-
izenship education.

M1865.001500 윤리학개론 특강 3-3-0

Topics in Introduction to Ethics

윤리학은 인식론, 철학사상과 더불어 철학의 주요 분야이면서
또 도덕 윤리의 교육의 중요 분야이다.

본 세미나는 우선 현대 윤리학의 주요 이론과 철학을 소개하
며, 그 배경이 되는 인문학과 과학에 대한 이해와도 함께 접근해
도록 한다. 그러하여 윤리이론과 철학을 학문적 관점에서 보고
나아가 현대적 방향으로 칭찬하게 하기 위한 연구를 위한 기반
을 제공한다.

This seminar also tries to look over the many issues of
the contemporary applied ethics.

M1865.001600 동양윤리사상연구 3-3-0

Studies in Oriental Ethics

본 교과목의 목적은 동양윤리사상에 대한 이해와 그 특
성에 대한 연구를 하는 데 있어서 필요한 동양의 주요 사상인 유가, 불가,
도가 등의 윤리학설과 개념 등을 재조명하는 한편
그 배경이 되는 인물과 사조에 대해서도 깊이 있게 접근해보
아니라 현실 삶의 치열한 문제의식의 결과라는 것을 학생들로 하
여부 개개인 혜에 따라 다를 것이다.

M1865.001700 윤리학개론 특강 3-3-0

Topics in Introduction to Ethics

윤리학은 인식론, 철학사상과 더불어 철학의 주요 분야이면서
또 도덕 윤리의 교육의 중요 분야이다.

본 세미나는 우선 현대 윤리학의 주요 이론과 철학을 소개하
며, 그 배경이 되는 인문학과 과학에 대한 이해와도 함께 접근해
도록 한다. 그러하여 윤리이론과 철학을 학문적 관점에서 보고
나아가 현대적 방향으로 칭찬하게 하기 위한 연구를 위한 기반
을 제공한다.

This seminar also tries to look over the many issues of
the contemporary applied ethics.
시민성이라고 할 경우 정치공동체에서 구성원이 되고 참여자가 되었을 때 가져야 할 실질적인 균형적인 이상을 말한다. 이러한 의미에서 시민이 된다는 것은 공동체의 완전하고 평등한 구성원이 되어 정치과정에 참여할 권리를 가지고 있음을 의미한다. 따라서 이러한 의미의 시민성은 고유한 민주적 이상이라고 할 수 있다. 군주나 군사독재자들에 의해 저해를 받고 있는 사람은 `신민`일지, `시민`은 아니다.

고대 이탈리아에서 시민권은 일단 `유권`의 관점으로 이해되었다. 시민들은 돌아가면서 공적을 수행해야하고 그 과정에서 자신의 사생활의 일부를 희생할 수밖에 없었다. 따라서 현대 사회에서 시민권은 `유권`보다는 `권리`의 범주로 이해되고 있다. 시민들은 정치에 참여할 권리를 갖고 있지만, 정치참여보다 사적인 일을 중시할 수 있는 권리도 가지고 있다.

이런 시민성의 개념은 수동적인 권리의 향유를 강조하고 특별한 시민적 의무의 개념을 강화하고 있기 때문에 `수동적인 시민성`이라고 할 수 있다. 본 교과목에서는 바람직한 시민성에 관한 권리에 따른 수동적 향유의 책임이나 역할적 실천에 의하여 보완되어야 할 강조하게 될 것이다.

Citizenship refers to a substantive normative ideal of membership and participation in a political community. To be a citizen, in this sense, is to be recognized as a full and equal member of society, with the right to participate in the political process. As such, it is a distinctively democratic ideal. People who are governed by monarchs or military dictators are subjects, not citizens.

In ancient Athens, citizenship was viewed primarily in terms of duties. Citizens were legally obliged to take their turn in public office and sacrificed part of their private life to do so. In the modern world, however, citizenship is viewed more as a matter of rights than duties. Citizens have the right to participate in politics, but also the right to place private commitments ahead of political involvement.

This is often called ‘passive’ citizenship, because of its emphasis on passive entitlements and the absence of any civic duties. We will emphasize that the passive acceptance of rights must be supplemented with the active exercise of responsibilities and virtues.
### 715.516
**Topics in Analysis 1**

This course will cover measurable spaces, monotone convergence theorem, Riesz representation theorem, Lebesgue integral, L^p spaces, elementary Hilbert space theory, open mapping theorem, complex measures, product measure, and Fubini theorem.

### 715.520
**Topics in Topology 1**

This course will consist of an examination of the formation and development of mathematical concepts and the learning and teaching problems related to them.

### 715.526
**Studies in Mathematics Education 1**

This course will consist of an exploration of the formation and development of mathematical concepts and the learning and teaching problems related to them.

### 715.527A
**Studies in Mathematics Education 2**

This course will consist of an exploration of the methods for teaching mathematical problem-solving on the basis of heuristics as well as other major problems and issues of secondary school mathematics.

### 715.528A
**Materials of Mathematics Education**

This course will consist of an analysis of the mathematical, philosophical, mathematics historical, psychological, and educational bases of school mathematics and the development of new teaching materials.

### 715.531A
**Psychology of Learning Mathematics**

This course will consist of an examination of the history of mathematics education from ancient Greece to the movement for the improvement of mathematics education in the early 20th century.

### 715.532
**Topics in Computers & Mathematics Education**

This course will deal with computers curricula, mathematics assessment, and teaching-learning environments related to computers and the Internet. Focus will be on algebra-geometry education employing logo microworld and DGS as well as computer-creative mathematics education.

### 715.533A
**Numerical Analysis 1**

This course will cover measurable spaces, monotone convergence theorem, Riesz representation theorem, Lebesgue integral, L^p spaces, elementary Hilbert space theory, open mapping theorem, complex measures, product measure, and Fubini theorem.

### 715.537
**Topics in Combinatorial Matrix Theory**

This course will deal with design principles of SMART learning environments for desirable changes in learning strategies and teaching-learning environments related to computers and the Internet. Focus will be on algebra-geometry education employing logo microworld and DGS as well as computer-creative mathematics education.

### 715.538B
**Topics in SMART Mathematics Education**

This course will deal with design principles of SMART learning environments for desirable changes in learning strategies and teaching-learning environments related to computers and the Internet. Focus will be on algebra-geometry education employing logo microworld and DGS as well as computer-creative mathematics education.
715.539  

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6학과목으로 운영하되, 전공과정은 교육자원과 의학적 전제를 학습하고, 대학수학과 교육과정과 권고를 중요할 수 있는 능력을 합성한다. 학생들이 전공과정별에 있어서의 심리적 요인을 분석하여 학생들의 효과적인 기하개념 발달을 위한 교육방법과 평가방법에 교육과정을 개발한다.
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715.541  

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수학교육통계분석론 3-3-0
Statistical Methods for Mathematics Education Research

수학교육연구에 필요한 통계적방법론을 배운다.
수학교육연구의 양적자료의 각 유형과 구조에 적합한 통계분석법을 다루게 된다.
가설검정법, 회귀분석법, 범주형자료분석법, 요인분석법을 개발한다.
통계분석방법의 적절한 적용과 잘못된 적용을 구분하는 비판적 지식을 갖추게 된다.

이론과 실습을 극복한 통계적분석과정의 사용법을 배운다.
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715.542  

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수학교육측정연구법 3-3-0
Measurement Theory and Application in Mathematics Education

수학교육의 성취수준과 수학적 사고능력을 측정하는 객관적인 방법론을 배운다.
수학적 사고와 문제해결에 대한 일반적인 이론과 흐름을 고려한, 이후 영재 및 창의적 교육의 이해와 평가방법, 영재 및 창의적 수학교육과정의 개발, 영재 수학교육의 이해와 창의적 수학교육의 개발, 그리고 현학적 교육을 위한 교육과정과 교육과정과의 제도적 성장과 테크놀로지 등을 바탕으로 하는 영재 및 창의적 수학교육을 효과적으로 실천하는 방법을 다룬다.
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715.603  

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그래프이론 3-3-0
Graph Theory

그래프의 수학적 이론을 학습하며 그 과정 중에 응용과 알고리즘의 개발이 중점적으로 주어지는 입니다. 이론의, 이론성, 이론의, 이론의, 그리고 이론의, 그리
This course will consist of discussions on the nature and methods of research on mathematics education and a critical examination of research methods.
716.601 Foundations of Science Education

This course will explore the beginning and historical change of science education since the 19th century. The historical change of modern science education will be discussed in terms of its ideal and goals around the following issues: early science teaching, school science curriculum and in-service education for science teachers. Students will have opportunities to present their own research related in these three areas. Research trends and issues with higher interests of students will be selected with priority, and domestic and international specialists in each topic will be invited for presentation and discussion. Students conducting studies in these areas present their research in front of professional community for interaction and feedback.

716.620 Quantitative Research Methods in Science Education

This course will focus on the philosophical background of qualitative research and issues in qualitative research on science education. It will provide an introduction to the history, theory, assumptions, design, and methods of qualitative inquiry in educational settings. The course seeks to ground students in the foundational principles of qualitative and ethnographic research as they have been used to describe social phenomena. The central focus of the course will be on how these assumptions have changed over time. Therefore, the primary objective will be to discuss paradigms and their usefulness in understanding the assumptions of all inquiry.

716.635 History of Science Education

In this course, recent trends and research accomplishments in the areas of modern science education and modern multimedia based science education are introduced. Students have opportunities to present their own research related in these two areas. Research trends and issues with higher interests of students will be selected with priority, and domestic and international specialists in each topic will be invited for presentation and discussion. Students conducting studies in these areas present their research in front of professional community for interaction and feedback.

716.633 Science Education Seminar 1

This course will explore the beginning and historical change of science education since the 19th century. The historical change of modern science education will be discussed in terms of its ideal and goals around the following issues: early science teaching, school science curriculum and in-service education for science teachers. Students will have opportunities to present their own research related in these three areas. Research trends and issues with higher interests of students will be selected with priority, and domestic and international specialists in each topic will be invited for presentation and discussion. Students conducting studies in these areas present their research in front of professional community for interaction and feedback.
roduction of science practical work during the 19th century; science citizenship & everyday science movement, scientific inquiry, STS & constructivist movements, scientific literacy, informal science education etc. during the 20th century.

716.638 과학교육의 사회문화적 접근 3-3-0

Socio-cultural Approach in Science Education

This introductory course on gifted education, general education will be discussed. Topics will cover the theoretical and historical background of gifted children and youth, various identification processes, differentiated curricula for the gifted, different kinds of gifted program models, relationship between gifted education and science education, characteristics and identification of scientifically gifted students, and needs of science-gifted education.

716.812 창의력과 과학영재교육 3-3-0

Creativity and Science-Gifted Education

Creativity is the most frequently emphasized purpose of education these days. This course will cover the definition of creativity, relationship between giftedness and creativity, various methods of assessing creativity, theoretical background of creativity, current trends in research on creativity, development strategies for creativity and higher level thinking skills in science-gifted education, and role of creativity in science-gifted education.

716.640 과학박물관과 비형식 과학교육 3-3-0

Science Museum and Informal Science Education

This introductory course on gifted education, general education will be discussed. Topics will cover the definition of creativity, relationship between giftedness and creativity, various methods of assessing creativity, theoretical background of creativity, current trends in research on creativity, development strategies for creativity and higher level thinking skills in science-gifted education, and role of creativity in science-gifted education.

716.813 과학영재교육/학습 및 평가 3-3-0

Teaching/Learning Method and Assessment in Science-Gifted Education

This introductory course on gifted education, general education will be discussed. Topics will cover the definition of creativity, relationship between giftedness and creativity, various methods of assessing creativity, theoretical background of creativity, current trends in research on creativity, development strategies for creativity and higher level thinking skills in science-gifted education, and role of creativity in science-gifted education.

716.811 과학영재교육론 3-3-0

Theories and Issues in Science-Gifted Education

This introductory course on gifted education, general education will be discussed. Topics will cover the definition of creativity, relationship between giftedness and creativity, various methods of assessing creativity, theoretical background of creativity, current trends in research on creativity, development strategies for creativity and higher level thinking skills in science-gifted education, and role of creativity in science-gifted education.

716.903 과학·수학·컴퓨터 융합교육 3-3-0

Fusion Education in Science, Mathematics and Computer Technology

This introductory course on gifted education, general education will be discussed. Topics will cover the definition of creativity, relationship between giftedness and creativity, various methods of assessing creativity, theoretical background of creativity, current trends in research on creativity, development strategies for creativity and higher level thinking skills in science-gifted education, and role of creativity in science-gifted education.
deal with mathematical expressions relating to nature in science teaching. This class should be one of fusion educations dealing with science, mathematics and computer technology.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>716.904</td>
<td>Science Teachers as Researchers into Their Own Practice</td>
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<tr>
<td>716.907</td>
<td>Science Education Forum 1</td>
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<tr>
<td>716.908</td>
<td>Science Education Forum 2</td>
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<td>716.910</td>
<td>Research in Science Gifted Education</td>
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<tr>
<td>716.913</td>
<td>Classroom Interactions in the Science Classroom</td>
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The aim of this course is to critically deepen our understanding of the nature of science and its role and place on the school curriculum. It is of particular relevance to science teachers and curriculum planners. As one of many school subjects, what is significant and special about science; and how different is it from other subjects in the way children learn? Is science a special and different kind of knowledge, as some curriculum theorists have claimed? How might science teachers respond to the pervasive post-modern claims that science is just another metanarrative? This course takes an international as well as a local educational perspective, and draws heavily on the history and philosophy of science as well as curriculum and learning studies. Through interactive seminars and discussion, it challenges participants to think deeply and critically about the nature of science and science education, as a means to better understanding the importance of science education.

This course is aimed at providing opportunities of exploring highly creative and/or academic-valued research questions through approaching fundamental problems and recent issues in science education. Graduate students are expected to improve their research abilities to the world class level.
activities will focus on supporting students to a) become familiar with different types of interactions and patterns of interaction in the classroom; b) examine factors that influence these interactions; c) explore research on approaches to science teaching (including direct instruction, inquiry teaching, and use of small groups) and develop a repertoire of teaching moves (e.g., questioning strategies) that promote positive learning interactions; and d) examine equity and diversity issues in classroom science teaching and identify research-based methods for insuring that all students have an opportunity to learn science.

716.914
Integrating Children's Literature and Science Content Instruction in the Primary and Middle Grades

This course is designed to introduce students to the genre of children's picture books (both fiction and non-fiction) for science content instruction in the elementary and middle grades. Students will learn to critically assess both the content and the quality of children's literature to be able to select age and concept appropriate titles for different instructional purposes. This course also introduces students to current research examining effective methods for utilizing children's literature to develop and teach integrated content across the curriculum. Students will be expected to explore a wide variety of picture books and will have the opportunity to develop a content specific project focusing on utilizing picture books to teach science in grades K-8. This course is recommended for pre- and in-service science teachers in primary and middle grade levels. The course reading, lecture, and interactive activities will focus on supporting students to a) identify outstanding children's literature that can be used to promote science instruction; b) design age-appropriate activities that stimulate and extend children's literary experiences; c) discuss effective instructional techniques that feature children's literature in science teaching and learning; and d) develop a lesson/unit to integrate literature into science content area.

716.915
Theories of Science Literacy

The course will focus on the philosophical background of qualitative research and issues in qualitative research on science education. It will provide an introduction to the history, theory, assumptions, design, and methods of qualitative inquiry in educational settings. The course seeks to ground students in the founding principles of qualitative and ethnographic research as they have been used to describe social phenomena. The central focus of the course will be on how these assumptions have changed over time. Therefore, the primary objective will be to discuss paradigms and their usefulness in understanding the assumptions of all inquiry.
This course discusses basic concepts of electromagnetics and related educational issues. It deals with such topics as electric and magnetic fields, Maxwell equations, and propagation of electromagnetic waves. In addition, the course delves into the effective teaching methods for this field.

**Electromagnetism Education**

Hilbert space, perturbation theory, many-body problems, scattering & learning methods and design of experiments and demonstration for secondary students and pre-service teacher.

**Quantum Mechanics Education**

This course discusses the characteristics of the current theories on learning physics. It covers effective teaching methods in such areas as mechanics, electromagnetism, optics, as well as modern and thermal physics.

**Seminar in Physics Teaching**

Students will select more than one research topics and reports their progress in the form of seminar. Students are expected to select their topics from the journals for general readers in physics.
Physics in Daily Life

Connecting science to everyday tools and appliances is one of the important missions of the secondary school science teaching. In this subject, we will investigate in depth the scientific principles involved in manufacturing electronic appliances, office tools, medical equipments, transportation tools, and sensors and analyze the results for use in thesecondary school science teaching.

Special Topics in Solid State Physics

The course will cover the overview of the research methodology, history and recent research in the condensed matter physics.

Theory of Relativity

In this course, we read Einstein’s General Theory of Relativity (1916), drawing key issues in the Theory of Relativity education and discussing implications in terms of secondary school education and teacher education.

Reading and Research

This course is aimed at equipping students with the thorough understanding for writing dissertations.
화학전공(Chemistry Major)

718.601 화학교육론 3-3-0

Topics in Chemistry Education

This course discusses the current research topics of chemistry education. It provides qualitative methodologies such as interview, classroom observation, and content analysis. This class is for those students who have completed graduate courses on the understanding and the techniques of educational research.

718.603 화학실험교육론 3-2-2

Topics in Chemistry Experiment for Teachers

This course covers the principles of instruction in chemistry laboratories, relevant approaches and materials. It also discusses scientific experiments conducted in secondary schools.

718.613 고급물리화학 3-3-0

Advanced Physical Chemistry

This course deals with the chemical dynamics, centering around such topics as thermodynamics of gas and liquid solution, as well as fundamental chemical reactions.

718.615 고급유기화학 3-3-0

Advanced Organic Chemistry

This course provides an in-depth study of materials chemistry and bioinorganic chemistry as well as current issues in inorganic chemistry.

718.659A 고급분석화학 3-3-0

Advanced Analytical Chemistry

This course introduces the traditions and techniques of quantitative research method in science education. After discussing on research traditions in science education, it focuses on quantitative research topics such as sampling, assessment, experimental study, and correlational studies. Then students make their own research problems and quantitative research plans on the basis of the discussion on previous studies in science education.

718.652 유기화학론 3-3-0

Topics in Organic Chemistry

This course discusses related topics such as substituent effects, medium effects, and linear free energy relations.

718.661 컴퓨터와 화학교육 3-2-2

Computer and Chemistry Education

This course deals with the chemical education, centering around such topics as mechanism of organic reactions, acidity and acid catalysis, isotope effect, organic spectroscopy, stereochemistry, linear free energy relations, and molecular orbital theory. It also discusses the chemical education, centering around such topics as mechanism of organic reactions, acidity and acid catalysis, isotope effect, organic spectroscopy, stereochemistry, linear free energy relations, and molecular orbital theory.
우고, 이를 이용하여 교수 학습 자료를 개발한다.

This course discusses the use of CAI, CBI, and the Internet in chemistry education. In addition, the class deals with basic computer languages and programs in order to develop teaching materials.

718.662 화학교육 및 화학세미나 3-3-0

Chemistry Education and Chemistry Seminar

이 강좌는 화학교육 및 화학(분석화학, 물리화학, 유기화학, 무기화학) 중 한 분야를 필요에 따라 선택하여, 학기마다 부제목을 정하고 개설한다. 해당 분야의 최근 연구동향을 분석하고, 각 연구의 특성과 유용성을 논의하며 새로운 아이디어를 제시한다. 논의된 아이디어를 통해 연구과제를 포착하여 계획서를 작성하고, 소규모로 세미나를 실시하여 결과를 분석하고 소논문을 작성하여 발표한다.

This seminar is established a field of the following areas by turn: Chemistry Education, Analytical Chemistry, Physical Chemistry, Organic Chemistry, and Inorganic Chemistry. The course suggests new ideas and what discusses about each distinction, utility through analysis the current study of most recent in the chemistry education or a division of chemistry. It makes a schedule with capturing of subjects of the study through discussion and analyses of results, and makes a paper and report.

718.663 화학탐구론 3-3-0

Inquiry in Chemistry

본 교과목은 화학 전공 교과목의 대부분을 이수한 과학교사 및 예비교사를 대상으로 하며, 화학 내용을 소재로 하여 과학자들이 수행하는 과학의 과정에 대한 지식과 이해를 다룬다. 이를 통하여 학교현장에서 학교과학 내용을 바탕으로 프로젝트 기반의 탐구를 수행할 수 있는 역량을 기르고자 한다.

This lecture is designed for science teachers and pre-practice teachers who have listened most of chemistry contexts, pursuing practice knowledge and understanding of doing science as scientists do. This will enforce them to lead project-based inquiry in school science.

718.664 나노물질의 생물학적 응용 3-3-0

Biological Applications of Nanomaterials

바이오와 연관된 나노 물질의 응용성과 관련된 최근 연구동향을 살펴본다. 우선, 나노 스케일이 될 때의 크기 현상으로부터 오는 독특한 나노 입자의 특성을 알아본다. 또한, 나노 물질의 합성과 측정방법도 소개된다. 마지막으로, 나노 물질의 종류와 bio-conjugation methods, solution-based probes/sensors, in vitro and in vivo imaging, and nanoparticle therapeutics와 같은 그들의 응용성을 논의한다.

The objective of this course is to provide students with an overview of current topics in the applications of nanomaterials in bio-related fields. In the first part we will survey the unique properties of nanoparticles which result from the confinement of matter into nanoscale features. The preparation and characterization methods of nanomaterials will also be introduced. In the second part, we will discuss several types of nanomaterials and their applications, which include bioconjugation methods, solution-based probes/sensors, in vitro and in vivo imaging, and nanoparticle therapeutics.
This course analyzes essential contents in secondary biology education and develops a standard conceptual system. It also deals with a concept map and development of a standard conceptual system. It deals with a concept map and development of a standard conceptual system. It deals with a concept map and development of a standard conceptual system.

This course focuses on developing a conceptual atlas of biology content based on the science curriculum.

Courses:

**719.515**  
Studies on Biology Teaching Materials

This course provides seminars and covers all fields from biology to biology education.

**719.516**  
Seminar on Biology Education 1

This seminar covers advanced fields related to biology education.

**719.517**  
Seminar on Biology Education 2

This seminar covers advanced fields related to biology education.

**719.521**  
Seminar in Biology Education Research 1

This seminar covers advanced fields related to biology education.

**719.522**  
Seminar in Biology Education Research 2

This seminar covers advanced fields related to biology education.

**719.619**  
Topics in Molecular Biology

This course discusses gene regulation of eukaryotes. It includes DNA-dependent RNA polymerase, promoter, structure and function of transcription factor.

**719.622**  
Research in Biology Education

This course discusses gene regulation of eukaryotes. It includes DNA-dependent RNA polymerase, promoter, structure and function of transcription factor.

**719.624**  
Topics in High-tech Biology Education

This course discusses gene regulation of eukaryotes. It includes DNA-dependent RNA polymerase, promoter, structure and function of transcription factor.
Topics in ecological principle teaching includes reading and discussion of ecological papers, which had major roles in the formulation of ecological principles. Selected papers include general ecological themes such as lab experiment, field experiment, modeling, biodiversity, ecological management, restoration, etc. Students will learn about the forming process of ecological principles, design of experiment, result presentation, data interpretation, etc. and can teach other people ecology correctly.

719.627 습지생태학교육 3-3-0

Wetland Ecology Education

This lecture focuses on educational application of genetics, which are essential required in preparing the lectures in middle and high school.

719.629 발생학교육특강 3-3-0

Topics in Developmental Biology Education

This lecture focuses on educational application of developmental knowledge including fertilization, cleavage, gas-trolation, cell differentiation and organogenesis in vertebrate, especially mammals. It also includes recent issues such as in vitro fertilization, artificial insemination, transgenic animal, stem cells, animal duplication and biological ethics, which are emphasized more and more as time passes in the middle and high school.

719.630 컴퓨터접속생물실험연구 3-3-0

Studies in Microcomputer Based Laboratories in Biology

이 강좌는 중등 생물실험 교육을 개선하기 위해 중등 생물 실험장치를 컴퓨터와 데이터를 이용하여 도구로서 컴퓨터를 활용하는 방안을 모색한다. 이를 위해 본 강좌에서는 컴퓨터 접속 장치를 실험 장치로 사용하는 방법을 구현한다. 중등 생물실험 교육의 요구가 증가함에 따라, 컴퓨터 접속 장치는 교육의 효율성을 높이고, 교육의 질을 높여줄 수 있는 장비의 장점을 제대로 반영할 수 있도록 하였다.

This course examines the application of microcomputer based laboratories to the secondary school biology experiment education in order to extend experimental possibilities beyond standard laboratory apparatus and enable students to investigate phenomena previously not accessible.

Topics covered will include introductory discussion about MBL, specifications and their usages of electronic probes and interface that are interfaced with a computer, usage of data collection and analysis software, analyses of secondary school biology experiments, and application of MBL to the secondary school biology experiments.

719.631 환경과학특론 3-3-0

Topics in Environmental Sciences

In the context of environmental science, the term "environment" includes all natural or human-made factors that can affect the behavior of living organisms and their interactions with each other and with the surrounding environment. Understanding these factors is crucial for the development and implementation of environmental policies and practices, which can help to mitigate the negative impacts of human activities on the environment and promote sustainability.

This lecture focuses on educational application of environment science area including transmission genetics, and molecular genetics that are essentially required in middle and high school curriculum. Transmission genetics deals with Mendelism and chromosome theory in transmission genetics, and molecular genetics DNA structure and replication, and regulation of gene expression. Students study textbook as well as the landmark and recent papers in genetics area, which will help them to understand the principles of Genetics, which are es-
Environmental issues have grown in big social issues recently and environmental education became a crucial program to solve environmental problems. Especially we need to know recent environmental problems and scientific methods to solve these problems. This course deals with recent topics in environmental sciences as well as background, history, and problem solving process of environmental issues. Through this course, students can understand past environmental issues based on historical background, problems, and problem solving processes and select scientific methods to solve present environmental problems. Also, students will develop educational skills to teach environmental issues.

Biology concepts which students have difficulties in understanding are to be explored from the epistemological and ontological perspectives. Conceptual changes in the domain of biology are examined in relation with the students’ cognitive and affective characteristics, and psychological development. Topics include cognitive conflicts, generative learning, analogies, models, and metacognitive strategies.
지구과학전공(Earth Science Major)

721.624A \textbf{지구유체역학} 3-3-0

\textbf{Geophysical Fluid Dynamics}

지구유체는 지구의 중력장 속에서 자전의 영향을 받으면서 운동하는 유체를 말한다. 일반적인 유체역학에서는 유체 내에 존재하는 장애물 주위에 형성되는 유선의 모양에 관심을 가지는 대에 반하여 지구유체역학에서는 유체 자체가 여러가지 내적 또는 외적자극에 의해서 어떤 형상을 나타내는지를 다룬다.

이 강좌는 다양한 내적 및 외적 자극에 의하여 유체의 반응을 연구한다. 다양한 지구과학적 주제에 대하여 고찰하며, 특히 지진 또는 지진파의 전파 과정을 이해하는 데 필요한 지구과학적 기초를 제공한다.

721.633 \textbf{연근해해양학} 3-3-0

\textbf{Coastal Oceanography}

연근해해양학은 우리생활과 가장 관련이 깊은 해양학이다. 인류의 생명과 활동과 깊이 관련되어 있다. 주요 주제로는 해양의 환경과 해양의 생물 다양성이다.

이 강좌는 해양의 환경과 생물 다양성을 연구한다. 다양한 해양생물의 특성과 생태계를 이해하기 위하여 다양한 실험과 모델링을 사용한다.

721.635 \textbf{인공위성지구과학} 3-3-0

\textbf{Satellite Earth Science}

인공위성은 지구과학의 연구에 중요한 도구이다. 인공위성은 지구과학의 다양한 분야에 기여하는 역할을 한다. 본 강좌는 인공위성의 원리와 기술, 그리고 인공위성 데이터를 활용한 지구과학 연구를 다린다.

이 강좌는 인공위성의 원리와 기술, 그리고 인공위성 데이터를 활용한 지구과학 연구를 다린다. 또한 인공위성의 활용에 대한 이해를 바탕으로 다양한 지구과학적 주제에 대한 논의를 하여 결과에 이르는 방법을 제공한다.

721.645 \textbf{지구화학특강} 3-3-0

\textbf{Topics in Geochemistry}

지구과학의 핵심 주제 중 하나가 화학적 특성을 포함한다. 본 강좌는 지구과학의 화학적 특성을 이해하기 위한 주제를 다린다. 특히 안정동위원소 분배학과 관련된 주제를 다린다.

이 강좌는 지구과학의 화학적 특성을 이해하기 위한 주제를 다린다. 특히 안정동위원소 분배학과 관련된 주제를 다린다. 또한 화학적 특성을 이해하기 위한 다양한 실험과 모델링을 사용한다.

721.648 \textbf{고급지질학연습} 3-3-0

\textbf{Problems in Advanced Geology}

지질학 분야의 핵심 주제 중 하나가 지질학적 블록이다. 본 강좌는 지질학의 이론과 실제를 바탕으로 다양한 지질학적인 주제를 다린다. 특히 지질학적 특성과 관련된 주제를 다린다.

이 강좌는 지질학의 이론과 실제를 바탕으로 다양한 지질학적인 주제를 다린다. 특히 지질학적 특성과 관련된 주제를 다린다. 또한 지질학적 특성을 이해하기 위한 다양한 실험과 모델링을 사용한다.

721.651 \textbf{이론지구물리학} 3-3-0

\textbf{Theoretical Geophysics}

지구과학 전공의 핵심 주제 중 하나가 지구물리학이다. 본 강좌는 지구과학의 물리학적 특성을 이해하기 위한 주제를 다린다. 특히 지구과학의 물리학적 특성을 이해하기 위한 다양한 실험과 모델링을 사용한다.

이 강좌는 지구과학의 물리학적 특성을 이해하기 위한 주제를 다린다. 특히 지구과학의 물리학적 특성을 이해하기 위한 다양한 실험과 모델링을 사용한다. 또한 지구과학의 물리학적 특성을 이해하기 위한 다양한 실험과 모델링을 사용한다.
본 과목은 현행 교육과정의 실행과 더불어 발생되는 특별히 이슈나 새로운 문제로 제기되고 있는 지구과학교육 관련 테마들을 중심으로, 과거 관련 테마들 및 연구 논문을 중심으로 하여 긴급한 연구를 요구하는 연구 테마들 중심으로, 대학원 학생들과 연구자간의 토론을 통해 수업을 진행하게 된다. 본 과목의 특성은 연구 테마 관련 연구방법을 학습할 수 있는 기회를 가질 수 있는 토론형 세미나를 중심으로 하며 연구자들간의 실험적 연구를 통해 학생자원과 연구 과정을 타 학생 및 담당 교수의 주관으로 인하여 연구의 집중력을 향상시킬 수 있다.

The course can be proceeded to have discussions and make clear studies between students and a course facilitator to deal with issues, problems newly occurred, and research themes urgently asked according to taking the current earth science education curriculum in action. Throughout the course, the students can have opportunities to study research methods related to research themes. Their research contents can be presented to be guided by the other students and the course facilitator. Therefore the students in the course can be successful to increase their potentials to concentrate their research themes.

이 강의에서는 지구과학 교수-학습에 대한 최근의 발전 성과를 심도 있게 다룰 것이다. 교사 양성 과정에서 접한 실천 증상의 교수-학습을 바탕으로 하여, 사회문화적 접근 중심으로 지구과학 교수-학습을 바라보며 이해하며, 이에 기반한 교수-학습 전략을 모색할 수 있는 역량을 가르는 것을 주요 목적으로 한다. 주요 내용은 지구과학 학습 공동체의 유행과 특성, 구성과 운영, 지구과학 교수-학습의 사회문화적 이해, 지구과학 모델링 과정으로서의 지구과학 교수-학습, 지구과학 모델링의 유행과 특성, 지구과학 모델링의 사회적 공동 구성 등이다. 이 강의를 통해서 학생들은 지구과학 수업에 대하여 복잡적인 관점을 갖게되며, 사회적으로 역동적이고, 문화적으로 상호작용적임을 인식하게 된다. 또한 지구과학 모델링의 사회적 공동 구성은 다양한 전략을 익히고 개발하게 된다.

Recent developments in Earth science instruction-learning would be introduced in this course. Students' background in Earth science instruction-learning taught as an undergraduate course or experienced as teachers would be good starting point. The major purposes of the course are raising competencies to understand Earth science instruction-learning based on sociocultural approach, and exploring instructional and learning strategies based on sociocultural approach. The types and characteristics, building and managing of learning communities, understanding Earth science instruction-learning based on sociocultural approach, the types and characteristics of Earth science modelling, Earth science learning as social co-construction of modelling will be main topics of the course. Students are able to understand the multiple socially dynamic and culturally interactive nature of Earth science instruction-learning. They can also understand and develop various strategies for co-construction of Earth science models.

지구과학은 천문학, 대기과학, 해양학, 지질학, 지구물리학 등 여러 세부 연구영역을 다양한 연구방법을 통해 연구한다. 지구과학 세부 연구영역에 대한 연구 동향과 방법론에 대한 최신 정보를 공유하고 토론하는 세미나 수업을 통해 연구의 질을 높인다.

Earth Science consists of various research areas including astronomy/astrophysics, atmospheric science, oceanography, geology/geochemistry and geophysics. In this seminar, we share and discuss the up-to-date information, trends and research methods in various areas in Earth Science.
This course introduces research methods used in the field of kinesiology. Students are expected to comprehensively understand the diverse methods. Also, they should deepen their knowledge in specific research methods for specialization in their own sub-areas. The course topics include identification of a research problem, research design, and quantitative/qualitative research methods.

**Experimental Design in Physical Education**

This course provides the basic understanding on the qualitative research methods to be learned. Qualitative research is increasingly well recognized as an essential area in the field of all studies, both in the humanities and social sciences. The benefits of qualitative methods are being utilized across a wide range of research contexts, from education to psychology and sociology. The course aims to provide students with a comprehensive understanding of qualitative research methods, including data collection techniques, analysis approaches, and reporting strategies. It also emphasizes the importance of ethical considerations in qualitative research.

**Introduction to Kinesiology**

This course is divided into three parts: (1) an introduction to the academic field of kinesiology, which includes a review of the historical development and current frameworks; (2) a discussion on the methodologies and research paradigms in kinesiology, covering both quantitative and qualitative approaches; and (3) an exploration of contemporary issues and challenges in kinesiology, such as the integration of technology and society, and the evolving role of kinesiology in addressing global health and well-being.

**Qualitative Research Methodologies in Kinesiology**

This course provides the basic understanding on the qualitative research as a social scientific inquiry in the area of sport studies. The epistemological and methodological aspects of the qualitative research are described and critically understood. The important research methods developed from various intellectual traditions are analyzed in their respective advantages.

**Reading and Research**

This course is designed to help students develop their own plans for research projects, and conduct and write the research, periodically consulting faculty members. It covers various stages of the research process, from designing a study to interpreting the results. The course also explores the ethical considerations in research and the dissemination of research findings.

**Optimization Theories in Human Movements**

Numerous studies suggested that physical activity can reduce the social and economic burden of neurodegenerative diseases associated with aging such as dementia, Alzheimer’s and Parkinson’s diseases. The purpose of this course is to learn how the principles of physiological and biochemical searches have been used to study how exercise and physical activity impact neuronal diseases and mental health. This course also aims to help students to develop fundamental skills in designing proper training method for several neurological disorder subjects.
conditions required to maintain sports research as an independent area of study, and (3) the value and benefits of sports.

722.513 \textbf{세계체육사연구 3-3-0} \\
\textit{Studies in World History of Physical Education}

이 과목에서는 세계 여러 나라의 체육의 역사에 대한 개략적이고 포괄적인 이해를 통해서 체육의 보편성과 특수성의 차이를 설명한다. 이와 함께 특정 국가의 체육에 대한 체육관련 문헌자료를 탐색하고 해석하여 현재의 체육을 정확하게 전달하는 데 도움을 주며, 미래의 체육에 대한 생각을 제시한다. 특히 최근에 새로운 게재되는 연구 동향을 반영하고, 동서양의 경우와 비교하여 설명함으로써 체육의 보편성과 특수성이 드러난다.

This course provides an understanding of the history of sports and physical education of countries around the world. Students will study historical data concerning specific issue in physical education and sports. This course provides students with a blueprint of the past, present and future of sports. A characteristic of this course is the exploration of recent issues in physical education through the comparison of the East and the West.

722.522A \textbf{스포츠교육학연구 3-3-0} \\
\textit{Studies in Sport Pedagogy}

학문적 탐구영역으로서 스포츠교육학의 전반적 특성에 대하여 이해한다. 스포츠교육학의 학문적 발전과 주요 연구동향에 대하여 포괄적인 이해를 갖는다. 최근의 국내외 연구결과와 교육현장에의 적용가능성에 대하여 구체적으로 탐색한다.

This course provides a general understanding on the field of sport pedagogy as an academic discipline. The historical process of its academic development and main research achievements are comprehensively provided. Its newest developments in research topics and its practical possibility in schools of Korea and other countries are also investigated.

722.533 \textbf{스포츠사회학연구 3-3-0} \\
\textit{Studies in Sociology of Sports}

이 강의는 사회학의 주요 개념과 이론을 기초로 하여 스포츠의 이해를 돕고, 스포츠와 사회체계의 상호관련성을 규명함으로써 스포츠에 대한 사회학적 시각과 관심을 높이며, 특히, 오늘날 여러 사회제도에 대하여 중대한 영향을 미치는 스포츠의 영향력에 그에 수반되는 제반 문제점을 고찰함으로써 스포츠의 사회학적 사고력을 제고시키는 데 그 목적이 있다.

To explore the role of dance in contemporary culture, this course covers the combination of different areas of dance expertise, including individual dance, dance theory, and dance criticism. This course is designed to provide a comprehensive understanding of the field of dance, and it is intended for students with a serious interest in dance and its cultural significance.
ing, and viewing the pros and cons of each state. This will include the comparison of the sports condition in Korea with those of other countries.

722.605 体育教育学特讲 3-3-0

Topics in Teaching Methods in Physical Education

이 강의는 사회체육의 재현상을 설명하는 데 필요한 정의, 개념 그리고 사회체육의 본질적 특징을 밝히는 관련 사실이나 지식을 통하여 사회체육의 이해를 돕는 데 그 목적이 있다. 이를 위하여 사회체육의 본질, 유사관념, 참가요인 및 사회체육과 노동의 관계를 고찰하고, 사회체육의 주요 영역, 지역사회, 상업체육에 대하여 살펴본다. 그리고 사회체육의 핵심 구성 요소인 시설, 지도자, 행정 조직 및 정책에 대하여 살펴본 다음, 미래사회에서의 사회체육의 역할 및 기능을 조명해 본다.

This course will cover the factors needed to explain social physical education. The aspects, characteristics, essence, and general idea of social physical education will be explained. Also, local and commercial sports will be discussed. What general idea of social physical education will be explained.

722.607A 体育政策特讲 3-3-0

Topics in Sports Policy

This course will provide an understanding of the cultural and historical contexts of sports in terms of its dissemination, reception, and development since the establishment of modern sports. Also, sporting events such as the Olympics and the World Cup, which have evolved according to changes in world history, will be reviewed and studied in terms of comparative history.

722.612 女子とレクリエーション研究 3-3-0

Studies in Leisure & Recreation

This course will be studied in the context of the mythopoetic dimensions of sport. It reviews those sport studies which describe and analyze from the perspectives of literature, arts, and religion. It tries to highlight the characteristics of truth, beauty, and good inherent in such physical activities as sport, exercise, and dance. The works and thoughts of East

field will be pursued.

722.619 体育政策ミハクタク讲 3-3-0

Topics in Applied Sport Psychology

본 과목은 스포츠 현장의 응용을 위해 수행력, 학습력, 관련성을 가진 주제들을 연구하고, 고유한 성과를 위한 자문역할 및 일상사례, 심리학의 프로그램 개발에 초점을 맞추어 진행한다. 또한 일반인의 운동지속 참가와 참여효과를 규명하기 위한 방안을 모색한다.

This course will study and practically apply psychological theories and research related to physical education, exercise, and sports programs. Students will search for ways to enhance public participation in sports.

722.621 体育文化ミハクタク 3-3-0

Studies in Aesthetics of Dance

This course will study and practically apply psychological theories and research related to physical education, exercise, and sports programs. Students will search for ways to enhance public participation in sports.

722.622 体育文化ミハクタク 3-3-0

History of Sports Culture

This subject deepens the understanding of the mythopoetic dimension of sport. It reviews those sport studies which describe and analyze from the perspectives of literature, arts, and religion. It tries to highlight the characteristics of truth, beauty, and good inherent in such physical activities as sport, exercise, and dance. The works and thoughts of East
and West on physical activities expressed in such narrative forms of sport novel, poetry, music, sculpture, painting, picture, movie, meditation, and prayer are dealt with.

722.711 패턴학특강 3-3-0

Topics in Philosophy of Physical Education

This course will provide an understanding of physical education and the sports history of each country in the world in terms of political, economic, social, and military environments. Therefore, it will help students to recognize and to understand the future of physical education and sports. Also, it will provide an understanding of noteworthy Western and Eastern figures on physical education, from ancient times and to the modern era. Students will consider each figure's historical background and examine his or her ideas and values to the modern era. Students will explore reference materials and historical data to diagnose the future of physical education and sports. Also, it will help students to predict future developments in educational practice.

722.712 세계체육사특강 3-3-0

Topics in World History of Physical Education

This course will study the ideas of noteworthy Western and Eastern figures on physical education, from ancient times and to the modern era. Students will consider each figure's historical background and examine his or her ideas and values to the modern era. Students will explore reference materials and historical data to diagnose the future of physical education and sports. Also, it will help students to predict future developments in educational practice.

722.712A 초등체육교육특강 3-3-0

Theories and Practice in Elementary School Physical Education

This course will provide an understanding of physical education and the sports history of each country in the world in terms of political, economic, social, and military environments. Therefore, it will help students to recognize and to diagnose the future of physical education and sports. Also, students will explore reference materials and historical data on specific issues in physical education and sports such as the Olympics and the World Cup.

722.712A 초등체육교육특강 3-3-0

Theories and Practice in Elementary School Physical Education

This course will study the ideas of noteworthy Western and Eastern figures on physical education, from ancient times and to the modern era. Students will consider each figure's historical background and examine his or her ideas and values to the modern era. Students will explore reference materials and historical data to diagnose the future of physical education and sports. Also, it will help students to predict future developments in educational practice.

722.723A 스포츠전문인교육특강 3-3-0

Topics in Education for Sport Professionals

The purpose of this course is to enhance the students’ understanding of sports and its relationship with society on the basis of sociological concepts. For a close examination of the significance of sports in human life and modern social systems, students will study the definition and purpose of sports sociology and sociological theories of and approaches to sports in terms of politics, economics, mass media, sex, delinquency, social class, socialization, and education.

722.737 여가 및 레크리에이션특강 3-3-0

Topics in Leisure & Recreation

This course will give a comprehensive understanding on the significance of sports in human life and modern social systems, students will study the definition and purpose of sports sociology and sociological theories of and approaches to sports in terms of politics, economics, mass media, sex, delinquency, social class, socialization, and education.
between leisure and stages in human development, social class, and age, so as to help people to improve the quality of their lives and to achieve self-realization though sports. Also, the course will provide information on leisure administration, facilities, and circumstances, and discussions on suggested problems.

722.745 | Topics in Sport Management

This course will introduce major research areas of sports management in a seminar format. Its purpose is: (1) to arrive at an understanding of research trends in sport management; (2) to develop the students’ ability to analyze and criticize research papers on sports management; and (3) to identify particular research problems and to write their own research proposals.

722.761 | Theory in Body of Sport

This course will offer the ontological and epistemological bases of Western and Eastern theories of the human body, which are important to physical education and kinesiology. It will also apply the results of modern psychological and philosophical human science to physical education and kinesiology.

M1886.000100 | The Theory and Practice of Sports Psychology

Exercise training: principles and practices

M1886.001400 | Exercise training: principles and practices
In this course, students will understand training theories that enhance the performance ability and potential of athletes. This course also emphasizes general knowledge to plan muscle strengthening and conditioning programs for optimal performance as well as health improvement.

**M1886.000800** 하지의 운동역학 3-3-0

**Biomechanics of the Lower Extremities**

This course introduces the theories in physics and motor neuroscience to understand the mechanics and the control of human walking and running. Students are also expected to learn mathematical techniques to analyze the stability of the human walking and running. Students are also expected to acquire data from human movements in the laboratory environment, and analyze them to reach a meaningful conclusion.

**M1886.000600** 운동역학이론 3-3-0

**Biomechanics Theory**

The purpose of the course is to provide knowledge of the basic mechanics of human movement system and the physical and physiological principles upon which it depends. Upon completing this course, the student will be able to have an understanding of basic mechanical principles and how these principles apply to the human musculoskeletal system and to human movements in sports. Also, the students will be familiarized with terminology used in human movement science, specifically in biomechanics.

**M1886.000900** 스포츠공학실험 3-3-0

**Laboratory Techniques in Sport Engineering**

This course will focus on methods of interpreting muscular activity-related bioelectrical signals with respect to musclecontraction force output. Emphasis will be on: utilization of electromyography equipments; process of developing, propagating, and summing up the action potential in nerves and muscles; construction of electrode and EMG equipments; process of developing, propagating, and summing up the action potential in nerves and muscles; construction of electrode and EMG equipments; and review of EMG-related papers.

**M1886.000900** Laboratory in Biomechanics

This course will focus on methods of interpreting muscular activity-related bioelectrical signals with respect to musclecontraction force output. Emphasis will be on: utilization of electromyography equipments; process of developing, propagating, and summing up the action potential in nerves and muscles; construction of electrode and EMG equipments; construction of electrode and EMG equipments; and review of EMG-related papers.

**M1886.000800** 하지의 운동역학 3-3-0

**Biomechanics of the Lower Extremities**

The motor control and biomechanics of the lower extremities are different from those of the upper extremities. This course introduces the theories in physics and motor neuroscience to understand the mechanics and the control of human walking and running. Students are also expected to learn mathematical techniques to analyze the stability of the human walking and running. Students are also expected to acquire data from human movements in the laboratory environment, and analyze them to reach a meaningful conclusion.

These two courses together provide knowledge about the human movement system and the related theories. Students are expected to understand the principles and apply them to real-life situations. They will be able to plan muscle strengthening and conditioning programs for optimal performance as well as health improvement.

**M1886.000600** 운동역학이론 3-3-0

**Biomechanics Theory**

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**M1886.000900** Laboratory in Biomechanics

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In this course, students will understand training theories that enhance the performance ability and potential of athletes. This course also emphasizes general knowledge to plan muscle strengthening and conditioning programs for optimal performance as well as health improvement.

**M1886.000800** 하지의 운동역학 3-3-0

**Biomechanics of the Lower Extremities**

This course introduces the theories in physics and motor neuroscience to understand the mechanics and the control of human walking and running. Students are also expected to learn mathematical techniques to analyze the stability of the human walking and running. Students are also expected to acquire data from human movements in the laboratory environment, and analyze them to reach a meaningful conclusion.

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**Biomechanics Theory**

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이 과목에서는 뇌를 비롯한 중추신경계와 말초신경계 및 감각 수용체들의 해부학적 구조와 생리적 기능을 제시함으로써 인체의 운동에 기인하는 신경생리학적인 내용을 다룬다. 이를 통해 운동의 기초가 되는 근육의 기전은 신경계의 작용과 지배에 의해 발생하는 일련의 과정으로 이해할 수 있도록 능력을 얻을 수 있다. 또한 운동의 기전은 운동기전과 운동의 학습에 어떻게 작용하는지에 대해서도 적극적으로 다룬다.

This course will provide the neurophysiological basis of movement including the structure and function of the nervous system, peripheral nerve system, and proprioceptive receptors. It will thus help students to understand the mechanism of muscle contraction and how movement is produced by the action and control of the neural system. The course will also deal with how the mechanism of movement is applied to skills and the learning of movement.

722.613 스포츠상해 및 재활 3-3-0
Sports Injury & Rehabilitation

본 과목은 스포츠 행위시 발생되는 스포츠 손상의 분류와 원인, 그리고 예방법책, 손상시 측면적인 응급처치, 손상의 정도와 부위에 따라 이루어지는 재활에 대해 학습하며 스포츠 현장에서 실습을 통해 종합적인 이해를 도모한다.

In this course, students will be briefed on the common causes and types of sports-related injuries as well as their preventive measures, emergency care, and various rehabilitation steps corresponding to the degree and location of the injury. They will thus understand the injury of each body part for each sport. Furthermore, through discussions on injuries that occur in actual sporting fields and their first-aid and preventive measures, students will be provided with a practical and comprehensive understanding of the aims of the course.
이 교과목에서는 인간의 행동을 생리학적으로 규명하고 관찰하여 조절기전을 알아보는데 그 목적이 있다. 인간의 일상생활 움직임에서부터 복잡하고 다양하며 매우 빠르게 움직이는 스포츠 상황에서의 움직임까지 인체가 어떻게 관여하고 조절하는지에 대해 알 아보는 과목이다. 조절기전으로 내분비계와 중추신경계, 말초신경계에서 행동조절을 위한 메카니즘에 대해 자세히 다룬다.

This course will introduce what has been learned about the physiology of behavior, and more importantly, the methods that are used to investigate this problem. It will deal with not only daily activities but also the complicated, fascinating performance of sports.
Based on various theories, this course will overview the history and development of physical education for the disabled. It will thus provide an opportunity to discuss future directions of adapted physical education as well as to read the relevant academic literature.

722.760 Topics in Exercise Medicine

This course is for the understanding of special exercise therapies needed today because of increasing interest in fitness in general as well as illnesses such as geriatric diseases and obesity. The causes of such illnesses and their specific post-infection symptoms demand much attention. In the course, the effects of exercise on these illnesses will be studied on a molecular biological level and there will be many chances of studying in the laboratory or in the field. This course is designed to instill an understanding of sport consumer behavior.

Understanding Sport Sponsorship

Students will learn how and why consumers behave by examining how we use products to define ourselves and how this self-definition affects our attention and perception, our motivations to buy, our brand attitudes, product judgment and choice, customer satisfaction and brand loyalty.

In uncovering answers to these questions, students will develop a deep understanding of the psychological basis of sport consumer behavior within its self-defining context, while developing a customer analysis 'toolbox' for making informed decisions about marketing strategy based on how and why consumers behave by examining how we use products to define ourselves and how this self-definition affects our attention and perception, our motivations to buy, our brand attitudes, product judgment and choice, customer satisfaction and brand loyalty.

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722.650 Understanding Sport Sponsorship

This course is designed to instill an understanding of sport marketing theory and sport sponsorship theory that how they apply to practice in the sport industry as well as develop and enhance the student’s critical thinking and communication skills. Upon completion of this course, you should be able to:

- Discuss key sport marketing theories and concepts such as: the unique elements of the sport product, sport consumer behavior, brand management in sport, sport relationship marketing, sport sponsorship, and sport sales/promotion.
- Apply sport marketing theories within various settings and sectors of the sport industry.
- Analyze sport organizations to recognize strategic marketing opportunities.
- Develop marketing strategies to realize marketplace opportunities.

722.651 Principles of Sport Consumer Behavior

Principles of Sport Economics

This course aims to provide the basic understanding on sport consumer behavior with the sport industry as well as develop and enhance the student’s critical thinking and communication skills. Upon completion of this course, you should be able to:

- Discuss key sport marketing theories and concepts such as: the unique elements of the sport product, sport consumer behavior, brand management in sport, sport relationship marketing, sport sponsorship, and sport sales/promotion.
- Apply sport marketing theories within various settings and sectors of the sport industry.
- Analyze sport organizations to recognize strategic marketing opportunities.
- Develop marketing strategies to realize marketplace opportunities.

722.653 Studies in Sport Industry

This course aims to provide the basic understanding on sport consumer behavior with the sport industry as well as develop and enhance the student’s critical thinking and communication skills. Upon completion of this course, you should be able to:

- Discuss key sport marketing theories and concepts such as: the unique elements of the sport product, sport consumer behavior, brand management in sport, sport relationship marketing, sport sponsorship, and sport sales/promotion.
- Apply sport marketing theories within various settings and sectors of the sport industry.
- Analyze sport organizations to recognize strategic marketing opportunities.
- Develop marketing strategies to realize marketplace opportunities.
This course explores various aspects of the economics of sports and sports leagues, with a focus on empirical analysis. We will consider a number of topics, including the business and economic implications of professional team sports and sports broadcasting, analysis of competitive balance policies, player relations issues including analysis of the drivers of players' salaries, the public finance aspects of sports teams and stadium funding. A portion of this course will also discuss learning about conventional income sources such as tax support, financing, antitrust issues, and issues in collegiate sports.

This course explores the human resource management function in a sport setting and focuses on the development of knowledge and skills that all managers and leaders need. The course will focus on such subjects as the selection process, employment law, labor relations, compensation, performance development, corporate training and maintaining effective environments. The classes are designed to familiarize participants with current human resource practices and laws that apply to their careers regardless of their field. Course content is delivered through lectures, group discussion, learning activities, and case studies.

This course introduces undergraduate students to the analytic and normative study of international sport and its relations. Students will survey various theoretical perspectives in the discipline to help understand the chief problems, actors, and structures of international sport. Through the organizing concepts of security, identity, and political economy, students will explore a range of contemporary phenomena, including the state, nation, and ethnic group; international sport organizations and society; political change, resistance, and violence, normative concerns in the international sport.

This course introduces students to the division of international sport and leisure studies to broaden and develop their knowledge, skills, and aspirations related to sport & leisure organizations. This course focuses on a conceptual analysis of management in sport & leisure organizations through a systems perspective. This course provides ways to coordinate a variety of sport organizations by various managerial functions of planning, organizing, leading, and evaluating, and solve problems associated with each type of sport organizations.

This course aims to introduce students to key considerations of sport event. This course will help students understand what they plan, implement, and evaluate when designing and conducting a real sport event. In order to fulfill this purpose of the course, students will be planning, programing, administering, and evaluating a real local event and designing a hypothetical international event for a better understanding of sport event from the operations management perspective. Through the course lectures and projects, students are provided hands-on practice in the use of the neces-
sary tools for harmonizing any sporting event.

722.660 Studies in Sport Facility Management

Principles of Sport Facility Management

- The purpose of this course is to provide students with an introduction to the planning and management of sports facilities. The course will focus on elements of planning, design, and management, while examining functions related to maintenance, security, operations, and evaluation. The course will emphasize problem solving utilizing class discussions, guest speakers and facility site visitations as feasible.

722.661 Studies in Sport Communication

- This course is designed to introduce students to the concepts of sport communication applied to the unique aspect of sport. This course will be focusing on developing the skills necessary to apply basic principles of communication to sport. This course will be focusing on developing the skills necessary to apply basic principles of communication to sport communication applied to the unique aspect of sport.

722.662 Studies in Sport Development

- The Sports Development course focuses on developing the knowledge, skills and aptitudes of students intending to make a career in the expanding field of sports development. Not only does the course address the sport-specific aspects of the profession such as coach education, talent identification and volunteer recruitment and retention, but uniquely for this type of course, it also focuses on the relationship between sport and urban regeneration, health promotion, social inclusion, citizenship and crime reduction; areas that sports development professionals are increasingly working within.

722.664 Studies in Sport Ethics

- Studies in Sport Ethics is an introductory course on ethical issues in sport including the relative fairness of performance enhancing drugs and techniques, cheating and deception, the role of violence in sports, and the nature of sportsmanship. Other topics may include ethical issues in sport industry and the economics of sports.

Upon successful completion of this course, students will be able to:
- Understand the philosophical terms used.
- Identify and explain the ethical positions of the different issues discussed.
- Develop and defend one’s own ethical beliefs regarding these issues.

722.665 Survey of Sport and Technology

- Survey of Sport and Technology is an introductory course on the use and applications of technology in various professional fields. Students will explore the unique aspects of sport communication distinguished from just ‘communication’.

- The course is designed to be cross-disciplinary, with examples and activities drawn from sport science, computer science and new media technology for the sport industry. Various instructional methods are used to engage students and help identify similarities and differences between technology applications in various professional fields. Students identify current academic contributions by leading researchers, share those contributions with their colleagues, and link those contributions to the course content.

722.666 Studies in Sport and Legal Issues

- Studies in Sport and Legal Issues focuses on ethical issues in sport including the relative fairness of performance enhancing drugs and techniques, cheating and deception, the role of violence in sports, and the nature of sportsmanship. Other topics may include ethical issues in sport industry and the economics of sports.

Upon successful completion of this course, students will be able to:
- Understand the philosophical terms used.
- Identify and explain the ethical positions of the different issues discussed.
- Develop and defend one’s own ethical beliefs regarding these issues.

This course is designed to be cross-disciplinary, with examples and activities drawn from sport science, computer science and new media technology for the sport industry. Various instructional methods are used to engage students and help identify similarities and differences between technology applications in various professional fields. Students identify current academic contributions by leading researchers, share those contributions with their colleagues, and link those contributions to the course content.

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This course will analyze legal issues raised in the sport context.

Upon completion of this course, you should be familiar with the legal rights and responsibilities of sports fans, agents, coaches, doctors and reporters and identify issues in the context of sports law. Also students are able to apply substantive law of torts, contracts, civil procedure, constitutional law, and property to resolve problems and advise clients of their respective rights and responsibilities.

722.667 Principles of Sport Risk Management

 Upon successful completion of this course, students will be able to:

- Develop effective Risk Management plans.
- Develop a prioritized risk management action plan based on the risks identified in sport contexts and apply to a variety of risks.
- Develop an understanding of what risk is, how it can be measured and transferred, why individuals and sport organizations care about risk.

The goal of this course is to active discovery of risk management principles and have students understand the risk management principles so as to apply to the area of sport management principles and have students understand the risk management principles and have students understand the risk management principles and have students understand the risk management principles and have students understand the risk management principles and have students understand the risk management principles.

722.669 Sport Market Research

Studies in Sport Marketing

This course introduces the concepts and applications of sport market research through the marketing management approach. This course emphasizes the basic methodologies, as well as introduces a variety of techniques, and demonstrates how research applies to strategy, including sport marketing, advertising, and sport product design and development. Specific learning objectives are to:

- Understand the relationship between market research and decision making
- Learn the processes used in formulating and conducting sport market research projects
- Understand of the sport market conditions under which
research may be undertaken, and the impact of these conditions on the type of research to be conducted, including the methodology and project management.

- Comprehend the range of qualitative and quantitative techniques and methods available in sport market research, including applicability and limitations.

**Principles of Strategic Sport Planning**

**722.674**

본 강의는 스포츠경영 전략수립을 위한 이론적 이해와 실무적 능력을 기르는 것을 목적으로 한다. 본 강의를 통해 학생들은 최신의 스포츠경영이론과 함께 스포츠산업의 새로운 설계 및 구조를 습득하게 될 것이며 다양한 이론을 실제로 어떻게 적용할 것인가에 대해 학습하게 된다. 본 강의의 구체적인 목표는 다음과 같다.

- 스포츠 마케팅과 스포츠경영프로세스에 대한 이해
- 스포츠 환경분석 방법에 대한 이해
- 스포츠시장의 전략적 분류 및 타겟시장의 선정
- 스포츠 경영자의 행동과 의사결정 프로세스의 영향요소에 대한 이해
- 스포츠 경영의 전략계획프로세스의 이해 및 실행

This course provides both the theoretical study and hands-on practice of sport managing strategy. Students will learn the most advanced management theories and various hands-on practice of sport managing strategy. Students will learn the most advanced management theories and various hands-on practice of sport managing strategy. Students will learn the most advanced management theories and various hands-on practice of sport managing strategy. Students will learn the most advanced management theories and various hands-on practice of sport managing strategy.

**Studies in Sport Policy**

**722.676**

본 강의는 중앙정부 및 지방정부 단위에서 스포츠정책에 대한 조사와 스포츠정책의 평가하는 기회를 제공하는 것을 목적으로 설계되었다. 정책 프로세스에 대한 개발과 이해를 통해 학생들은 정책의 사회적 환경과 적합한 스포츠정책수립방법을 습득할 수 있다. 또한 본 강의는 글로벌 환경에서 여러 국가의 스포츠정책에 대한 이해를 도모하며 다음과 같은 구체적인 목표를 가진다.

- 스포츠정책의 원리와 정책개발기반에 대한 이해
- 정부와 지방자치단체의 스포츠정책에 대한 이해와 스포츠정책에 있어서 역할평가
- 정책 프로세스의 다양한 관점과 정책수행결과에 대한 영향요소 탐색
- 다양한 국가의 체육과 스포츠시스템에 대한 이해 및 정책 분석 평가

This course is designed to provide students with the opportunity to examine and evaluate sport policy at central and local government levels. In developing an understanding of the policy process students will know how to develop appropriate sport policy for their political and social context.

The course also aims to examine sport policy and practice in the context of global sport.

**Studies in Sport Media**

**722.675**

본 강의는 한국 스포츠미디어의 역할에 대한 비판적 시각을 기르는 것을 목적으로 한다. 수업에서는 먼저 스포츠미디어에 대한 개괄적인 이해를 통해 주요 개념 및 주제들을 살펴보게 될 것이다. 또한 스포츠미디어에서 인간·생활·국가주의·자본주의/소비상주의·폭력·스포츠산업 등 다양한 스포츠상황과 관련된 주제들에 대한 이론적 고찰 및 현장적 지식을 습득한다. 스포츠미디어와 한국 스포츠 환경과의 관계에 대한 이해를 통해 학생들은 스포츠의 성격, 역할과 관계 등 스포츠미디어의 일반적인 역할 및 융합적인 태도에 대한 비판적 접근과 역사적 고찰에 동시에 경험할 수 있으며, 스포츠현장에서의 말하기 및 글쓰기 능력을 향상시킬 수 있다.

This course is designed to help students more critically view the role of sport media in Korean society. It will begin with an historical overview of the sport and media industries, and an introduction to some of the key themes and concepts that will be explored. During the course, the influence of the relationship between sport media and issues such as race, gender, nationalism, capitalism/consumerism, violence and sport industry will be examined.

Students will think more critically about the general role of sport media in Korean culture and about ethical issues in sports journalism. They will also understand the history and processes involved in the development of sport media and will be able to demonstrate their learning through effective oral and written communication.

Discussions will touch upon a wide range of issues and theoretical approaches, with examples drawn from a variety of sports and sporting practices.

**Sport Negotiation**

**722.677A**

본 강의는 국제 협상과 관련된 여러 활동 및 이론에 관한 이해를 가지는데 목적이 있으며, 이를 통해 각 활동 및 이론의 스포츠산업현장에서의 적용과 비판적 사고 함양, 그리고 커뮤니케이션 능력을 얻는데 그 목적이 있다. 특히 본 수업은 국제적 사례에 중점을 두고자 한다.

The main intent of the course is to provide students with theoretical knowledge and practical skills. The students will be able through the learned skills critically analyze sport related negotiations, and cultivate their communications skills. Moreover, this course will treat international case studies. At the end of the course students will be able to apply efficiently their knowledge in the practical domain.
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| 722.770 | 스포츠 조직특강 (Topics in Sport Organizations) | 3-3-0 | 본 강좌는 국내외 스포츠 조직 경영에 적용할 수 있는 지식과 기술을 학습하고, 스포츠 조직 연구의 최근 이슈를 실험하는 것을 목적으로 한다. 시스템 분석을 통해 국내외의 여러 스포츠 조직과 관련된 문제들을 분석, 정리, 평가함으로써 해결책을 도출해내는 방법에 대하여 알아본다. 

This course is designed to help students develop their knowledge, skills, and aspirations related to sport & leisure organizations. This course focuses on a conceptual analysis of management in sport & leisure organizations through a systems perspective. This course provides ways to coordinate a variety of sport organizations by various managerial functions of planning, organizing, leading, and evaluating, and solve problems associated with each type of sport organizations. |
| 722.771 | 스포츠 커뮤니케이션과 미디어특강 (Topics in Sport Communication and Media) | 3-3-0 | 본 강좌의 목표는 스포츠 마케팅에 적용할 수 있는 다양한 개념과 학문적 이론을 학습하고, 아울러 스포츠 이벤트, 리그, 클럽 등의 다양한 스포츠 상품과 서비스에 대한 효과적인 통합 마케팅 기법을 소개하는데 있다. 한편, 스포츠 마케팅의 다양한 기법을 학습함에 있어 문화적 요소를 직극적으로 고려해 국제사회에 적용 가능한 스포츠 마케팅 심부름 아래 연구 수행 능력을 배양하도록 한다. 

The goal of this course is to introduce doctoral students to the fundamental concepts of theory and to examine a variety of theories that can be applied to the study of sport media and communication. Our challenge will be to translate theoretical concepts from a number of different fields and relate them to how sport media and communication works. Central ideas of the course will be conveyed through reading and discussion of articles and chapters. The readings are a blend of the classic studies and current ideas relevant to the study of sport media and communication |
| 722.772 | 스포츠 마케팅특강 (Topics in Sport Marketing) | 3-3-0 | 본 강좌의 목표는 스포츠 마케팅에 적용할 수 있는 다양한 개념과 학문적 이론을 학습하고, 아울러 스포츠 이벤트, 리그, 클럽 등의 다양한 스포츠 상품과 서비스에 대한 효과적인 통합 마케팅 기법을 소개하는데 있다. 한편, 스포츠 마케팅의 다양한 기법을 학습함에 있어 문화적 요소를 직극적으로 고려해 국제사회에 적용 가능한 스포츠 마케팅 심부름 아래 연구 수행 능력을 배양하도록 한다. 

This course covers the managerial aspects of sport marketing. Students learn how to design and evaluate integrated marketing strategies and programs for sports products and services such as sporting events, facilities, leagues and clubs. In addition, the influence of culture on integrated communications is stressed throughout the course as it relates to advertising, public relations, sales promotion, personal selling, trade shows and other methods of marketing in sports context. Students apply the concepts through individual assignments and a theoretical research project. |
| 722.773 | 스포츠 정책특강 (Topics in Sport Policy) | 3-3-0 | 본 강좌의 목표는 스포츠 정책 수립의 과정과 방식에 대한 학생들의 이해를 확대하는데 있다. 학생들은 주로 사례분석을 통해 스포츠 정책과 커뮤니케이션 이론을 이해하고 실제 학습연구에 적용할 수 있는 기회를 얻게 된다. 

The primary aim of this course is to help students understand who makes sport policy and why do we need it. Specifically, students will examine the complex relationships between modern sport, sport policy and development and other aspects of the wider society. These important issues are explored via detailed case studies. Each case study demonstrates the ways in which the sport policy and development fields have changed. In addition, the course helps the students understand the complexities of the sport policy-making process, the increasing intervention of government in the sport policy and development fields, and how the short-term, ever-changing and frequently contradictory political priorities of government come to impact on the practice of sport policy. |
logical researches regarding the cognitive process, memory, musical development, basic acoustics, and especially, the teaching and learning of music. They also discuss diverse research methods of cognitive psychology of music which have been rapidly developing since the 1980s.

**Philosophy of Music Education**

본 강좌는 음악교육의 위기 시마다 음악교육을 정당화하기 위하여 대두된 음악교육철학의 필요성과 당위성을 조사한다. 이를 위하여 음악교육과 관련된 다양한 미학적 이론들을 조사하고 이 이론들을 실제음악교육 문제에 적용하는 방법을 연구한다. 예술과 감정, 창의적 과정, 심미적 의미, 심미적 경험, 음악적 의미, 음악적 경험 등에 관한 조사한다. 또한 심미적 음악교육철학과 실제음악교육철학, 이 중간 입장을 분석하고 비교하며 비판한다.

This course examines the rationale and importance of music education philosophy which has developed to justify music education in the time of its crisis. Students research various aesthetic theories relating to music education, emphasizing their practical applications. They also examine the arts and emotion, creative processes, aesthetic meanings, aesthetic experiences, musical meanings, and musical experiences, in addition to analysis, comparison and critique of aesthetic, paraxial, and in-between philosophical positions of music education.

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704.550A 
**Foundation of Music Education 1**

본 강좌는 음악교육의 본질 및 중요성, 그리고 음악교육로서의 책임감 및 방향설정에 관한 지침을 마련해주기 위하여 개설된다. 이를 위하여 음악교육의 역사적, 철학적, 심리학적, 사회학적 기초를 조사하며 이와 같은 것들을 교육과정, 정책, 행정에 이용하는 다양한 방법들을 연구한다.

This course intends to provide students with the guidelines of the rationale, importance, responsibilities and orientation of music education. It also examines the historical, philosophical, sociological and psychological bases of music education, emphasizing the applications of these bases to the development of curriculum, policy and administrative leaderships.

704.551A 
**Foundation of Music Education 2**

본 강좌는 <Foundation of Music Education 1>에서 학습한 내용을 바탕으로 하며, 20세기 후반 이후 음악교육학에서 주요 이슈가 되고 있는 개념들과 관리사, 한국적 상황에서의 특수한 과제들에 대하여 토론한다.

This course is based on <Foundation of Music Education 1>, and intends to acquaint students with the current issues and topics in music education since the late 20th century in addition to the specific tasks in the Korean context.

704.552 
**Research Methods in Music Education**

본 강좌는 철학적, 실질적, 기술적, 역사적 접근방법을 기본으로 음악교육의 다양한 연구방법들을 이론적, 실질적으로 탐색하며, 음악교사들이 음악교육학적 연구정보를 얻는 방법 및 최근의 탐구들 로지를 이용하는 방법에 관하여 다룬다. 이와 더불어 현대의 음악 교사들에게 주어지는 도전들, 이들 해결하기 위한 실제적 해결책들 및 양적·질적 연구 원칙들을 통하여 학습한다.

This course examines the research studies and strategies for conducting philosophical, experimental, descriptive, and historical research in music education in theoretical and practical ways. It also deals with methods of getting research information in music education, in addition to employing the newest technological devices. Students will study the challenges for modern music educators and the problem solving skills in real situations through quantitative and qualitative research principles.

704.555 
**Psychology of Music Education**

본 강좌는 20세기 초반 이후 발전되어 온 음악심리학의 다양한 이론들을 조사하며, 최근의 음악심리학적 동향 및 연구들을 관할하여 연구한다. 인지 과정, 기술, 음악적 발달, 기초음악학, 그리고 특히 교수학습과 관련된 음악심리학적 연구들을 조사하고 학습하며, 특히 80년대 이후 급속히 발달된 음악인지 심리학의 다양한 연구방법들에 관하여 논의한다.

This course examines the diverse theories of psychological foundations of music education, have been developed since the early 20th century, focusing on the current trends and recent researches. Students examine and study music psycho-
704.563A 加強指導概 3-3-0

Teaching Methodology of Vocal Music

가창 및 합창 수업에 의하여 심미적 음악교육에 기여할 수 있는 방법을 연구한다. 단순히 기술의 훈련에 그치지 않고 가창 및 합창교육을 통한 개념 학습 및 포괄적 음악성의 함양을 강조하며, 가창 및 합창 지도를 통한 음악적 성장을 극대화시키기 위한 구체적 방법을 연구한다.

This course examines the vocal and choir instructions as a performing medium which can contribute to an aesthetic music education. It focuses not only on the training of vocal and choral techniques but also the development of comprehensive musicianship through vocal and choral education. Students also research concrete methods for maximizing the musical development of students through vocal and choral instructions.

704.572B 음악교수법 3-3-0

Music Teaching Methods

다양한 음악교수법들의 이론 및 실제에 관하여 연구한다. 특히 심미적 철학을 위한 수업원칙들 및 교수-학습 전략들을 연구하고, 전제적 음악 프로그램을 개선하기 위한 보다 효율적인 방법들을 탐색하고 연구한다.

This course will examine diverse theories and practices of music teaching methods. It will also examine the principles and teaching and learning strategies for developing aesthetic experiences. In addition, examine and explore the effective ways of improvements of overall music programs.

704.577 음악창작지도법 3-3-0

Teaching Methodology of Musical Composition

음악 창작 교수-학습과정의 심리학적 기초를 이해하고, 음악 작품 창작 교육 과정에서 학습자의 음악에 대한 미적 감각을 형성시킬 수 있는 다양한 효과적인 음악 창작지도 방법과 교수-학습과정 개발방법에 대하여 연구한다.

In this course, students understand the psychological foundations of teaching and learning process of creating musical works and study diverse and effective teaching methods of creating musical works and the way of developing teaching and learning materials that build up the learner’s aesthetic sense through creating musical works instructions.

704.579 국악교육론 및 국악교수법 3-3-0

Foundation and Methodology of Korean Music Education

국악교육론과 국악교수법의 통합과정이며, 국악교육의 철학과 역사 같은 천년을 다루며, 국악교수법은 이를 바탕으로 학교 현장에서 필요한 각론을 다룬다. 이를 통해 수강자는 체계적이고 철학적인 국악교수 능력을 갖게 된다.

This course is to combine ‘foundation of Korean music education’ with ‘methodology of Korean music’. The part of foundation deals with the general principles such as philosophy and history of Korean music education, while the part of methodology covers the details of the applications in school based on these foundations. With this, this course intends to provide students with systematic and creative teaching abilities.
This course addresses the history and current status of art therapy. It provides both theories and case studies of art therapy in relation to the form and content of visual art.

704.530 미술교육평가연구 3-3-0
Studies in Evaluation of Art Education

미술교육의 측면에 관한 이론적 배경을 탐구하고 새로운 대두되는 미술교육 방법론의 철학적, 교육학적 성격을 비판적으로 검토한다. 또한 이러한 방법론들이 실제로 어떻게 적용되고 있는지 알아보기 위해 최근의 선행연구들을 고찰하고, 다음 효과적인 미술교육 방법을 개발하기 위해 시도가 이루어져야 한다. 이를 통해 학생들은 연구사례의 이해를 갖추게 될 것이다.

This course probes into the evaluation methods for the establishment of creativity, criticism, and problem-solving ability through art education. It also covers the latest evaluation methods currently adopted and the development of new ones.

704.539 미술교육학방법론 3-3-0
Research Methods of Art Education

미술교육의 측면에 관한 이론적 배경을 탐구하고 새로운 대두되는 미술교육 방법론의 철학적, 교육학적 성격을 비판적으로 검토한다. 또한 이러한 방법론들이 실제로 어떻게 적용되고 있는지 알아보기 위해 최근의 선행연구들을 고찰하고, 다음 효과적인 미술교육 방법을 개발하기 위해 시도가 이루어져야 한다. 이를 통해 학생들은 연구사례의 이해를 갖추게 될 것이다.

This course provides various research methods in art education. It also discusses the philosophical and educational nature of newly presented methods of art education. Recent publications in the field are examined in order to see how these methodologies are practically applied, and attempts are made to develop more appropriate methods of art education. Through this course, students will achieve competence as researchers.

704.540 미술교육과 지역사회 3-3-0
Studies in Community-based Art Education

본 과목에서 지역사회 미술과 지역사회기반 미술교육에 대한 이론과 철학에 대하여 탐구한다. 지역적 차원과 세계적 차원에서 지역사회의 의미를 정의하고, 지역사회의 예술과 자연을 어떻게 활용할 것인지에 대해 연구한다. 이 수업을 통해 학생들은 지역사회에 대한 확장된 정의를 가지고 지역사회기반 미술교육의 연구방법에 대해 탐구하며, 지역사회에서 예술의 역할에 대한 심층적인 이해를 얻을 것이다.

This course explores theories and philosophies of community arts and community-based art education. This course will define community, both local and global. And it will guide students in the process of identifying and utilizing arts and resources within communities. Research methods in community-based art education will be discussed, and in this course students will obtain an in-depth understanding of the roles of art in communities.
704.542 미술문화교육정책특강 3-3-0

Topics in Policy of Culture and Education

This course will examine Korean laws and current legislation affecting the visual arts. Topics include the role of community and local organizations in shaping cultural policy, and there will be an emphasis on issues of cultural policy and responsibilities.

704.549B 아시아미술교육연구 3-3-0

Studies in Asian Art Education

This course will investigate the institutional history of art education, exhibitions, and markets and offer an introduction to social and political ideology from the traditional to the modern The history of collection, catalogue-making, art marketing will be also examined. Each semester will select a country of concentration to examine in depth the regional characteristics Comparative studies with other Asian countries and the parallel movements in the West will be made if necessary.

704.601 현대미술철학사 3-3-0

History of Philosophy in Contemporary Art Education

This course will pursue the origin of art education in the West as well as in Asia. Second, art education of the 19th century and visual art education for artists in the university will be discussed. Third, art education in public schools, art education in progressive education, and creative/self-expressive art education will be examined. Finally, the course will survey the discipline-based art education in the 1970s, and postmodern art education and multicultural art education in the 1980s. This course will explore the influence of the West on art education in Korea.

704.602미술교육연구 3-3-0

Studies in Teaching Materials in Art Education

This course will examine Korean laws and current legislation affecting the visual arts. Topics include the role of community and local organizations in shaping cultural policy, and there will be an emphasis on issues of cultural policy and responsibilities.

704.603A미술교육과미술사 3-3-0

Studies in Art Education and Art History

This course will examine the characteristics and possibilities of developing art textbooks that reflect the change of the paradigm of art education. For this purpose, students will discuss the educational value of art textbooks for art education in Korea and practice developing an ideal of art textbooks for the art education curriculum. Additionally, students will research the current situation and case studies of art education in elementary schools, middle schools, and high schools in Korea, as well as in Japan, China, and the United States.

704.603B미술교육과미술학 3-3-0

Studies in Art Education and Art History

This course will examine Korean laws and current legislation affecting the visual arts. Topics include the role of community and local organizations in shaping cultural policy, and there will be an emphasis on issues of cultural policy and responsibilities.

704.604C다문화미술교육연구 3-3-0

Studies in Multicultural Art Education

1895년에 시작된 베니스 미 |_|
본 세미나에서는 20세기 미술의 흐름에 영향을 끼친 제도, 국가, 전문인 등의 권력을 국제 전 분석으로 통해서 살펴볼 것이다.

As the history of the Venice Bienale, which is over 100 years old, shows, international art exhibitions have become the cultural, political, and economic competition field through artworks. Meanwhile, not only art exhibitions, but also professional staffs such as curators have influenced the trends of the art. In this seminar the topics on the power of art institutions, nations, professional staffs, etc., will be researched and analyzed.

704.618A 한국현대미술이론특강 3-3-0

Topics in Contemporary Korean Art Theory

본 과목은 현대미술에서 나타나는 다양한 미술담론들의 이론적 배경과 그 전개과정을 살펴보고 이에 관한 비평적 시각을 모색하려는 제2차 세계대전을 전후한 아시아와 구미의 미술운동에서 포스트모던 미술에 이르기까지의 주요 사조들에 관한 비평적 논의들에서 출발하여, 각 사조의 작품들에 나타난 양상을 고찰하여 현대미술의 문화적 대화에 대한 이해를 높이기 위한 역량을 갖추려 한다. 이를 통하여 현대미술교육에 필요한 배경지식을 얻는다.

This course explores the theoretical backgrounds and the development of various artistic discourses in contemporary art. From the artistic movements after the Second World War to the postmodern era, the major artistic discourses in Asia and the West will be closely examined and questioned along with thorough analysis of the art works. Through this course students will acquire knowledge on various discourses related contemporary Korean art necessary for art education.

M1841.000100 박물관⋅미술관 교육연구 3-3-0

Museum Education Program Development

박물관⋅미술관 교육 프로그램의 기획부터 시작하여 이를 개발하고 적용하는 전 과정을 실제 과제를 통하여 경험하면서 박물관⋅미술관 교육의 이론과 실천의 이해를 동시에 학습할 수 있도록 한다. 박물관⋅미술관 교육과 관련된 학습 이론을 바탕으로 다양한 계층, 주제, 목표를 프로그램 개발에 적용한다. 특히 실물기반 학습과 학교연계프로그램, 가족참여프로그램, 소외계층 대상 프로그램을 학습 이론과 접목하여 박물관⋅미술관 교육 프로그램 개발한다.

Students can gain an understanding of both theory and practice as they relate to museum education by successfully completing projects, from the planning of museum programs to developing and executing museum education programs successfully. Based on learning theories centering on museum education, various sources can be applied in a diversity of classes, themes, and purposes. Specifically, museum education based on authentic objects and school connection programs, family participation programs, and programs for the underserved can allow learners to graft concepts onto different educational theories in their efforts to develop effective museum education systems.
704.501A  
**Topics in Home Economics Education**

Gavejog and curriculum, including methodological and historical aspects, including the analysis of specific practices and their implications for the development of the field. This course reviews the nature, purpose, and history of home economics as a social science. It analyzes the ideals associated with serviceability, appearance, and comfort.

In this course, students are expected to be able to apply the knowledge gained from reading and studying existing research into this area. Students will be able to design and complete a research project, and to write a research paper based on their own research.

704.502A  
**Consumer Education**

Consumer Education

This course examines the concepts, history, and content of consumer education in general. It analyzes consumption and education in contemporary Korea on the basis of the fundamental principles of consumer economics.

704.504  
**Nutrition Education**

Nutrition Education

This course is designed to introduce students to the fundamental principles of nutrition and to develop a basic understanding of the role of nutrition in human health and disease prevention.

704.506  
**Clothing Construction Education**

Clothing Construction Education

This course studies the proportion of fibers and fabrics related to serviceability, appearance, and comfort.
가정문제와 가정환경세미나 3-3-0

Seminar in Development Problems of Adolescence and Family Environment

청소년기는 자아정체성의 발달을 비롯하여 신체적, 정서적, 사회적, 정직적으로 급격한 변화의 시기이다. 이 과정에서는 청소년기의 다양한 발달특성을 이해하고, 이러한 특성들이 부모자녀관계를 비롯한 가정환경의 요인들과 상호작용하면서 발생하는 청소년 문제를 식별한다. 청소년기 발달과 가정환경의 관련성에 대한 심층적 이해를 통해 가정환경의 역할에서 청소년에게 발생하는 다양한 문제의 발전과정을 이해하고 구체적인 해결방안을 모색한다.

The goals of this course are to understand qualitative, quantitative aspects of adolescence developmental phrases, and to review adolescent problem behaviors caused by interaction between the adolescent developmental characters and many factors of family environment, such as parent-child relations. In context of family environment, this course will seek to find the specific solution of various adolescent problem behaviors.
지하독, 교육하는 기술을 습득한다.

This course covers physical, psychological, emotional, and social needs of individuals through the life span. With an emphasis on the family relationships, this course examines how human relationships develop and how environments influence families. Teaching skills and curriculum development are discussed so that home economics education help balance between family roles and other roles and improve family life.

704.671 생애주기영양학교육론 3-3-0
Teaching Nutrition through Life Cycle

영양학적인 관점에서 선체 내 대사과정의 이해와 끊임없이 생애 주기별 생리적 변화에 따른 영양학적 특수성을 학생들에게 교육하는 방법을 연구한다. 즉, 임신기, 수유기, 영아기, 유아기, 학동기, 장년기, 노년기 등의 생애주기별로 영양학적 특성과 영양요구량, 영양문제와 해결방안, 심생활관리, 영양 전망의 실제에 관하여 공부하고 학생들이 쉽게 접근할 수 있는 방법을 토의하며, 최근 이슈를 중심으로 영양학 전반에 걸쳐 심도 있게 공부한다.

This course will cover educational issues concerning nutrition at different periods of the life cycle. Topics will cover the nutritional characteristics, food patterns, dietary intakes, nutritional requirements, and common nutritional problems of pregnant and lactating women, infants, children, adolescents, and aging adults.

704.672 조리과학학교론 3-3-0
Teaching Food Preparation

조리를 통해 일상생활에서 일어나는 과학현상을 학생들에게 교육할 수 있는 방법을 모색하고 과학적인 조리방법을 교육하는 방법을 토의한다. 식품이나 식품성분, 또는 향미성분 등의 구조, 물리적 화학적 성질, 산화를 포함한 화학반응, 식품성능 및 조리 가공 중의 변화에 대한 기본적 지식을 바탕으로 식품성분이 각종 조리 조작 시 일으키는 반응과 변화 현상을 연구하고 맛, 색, 절감 및 맛의 균형을 위한 조리법을 학생과 함께 개발할 수 있는 방법을 연구한다.

Physics and chemistry can be found in everyday life. This course will focus on the method to teach young students of science in the cooking process The influence of the composition, standard methods of food preparation and especially physicochemical changes of food components during processing will be discussed.

704.673 식품안전학교론 3-3-0
Food Safety Education

식품안전에 대한 조리교육을 목표로 학생들에게 안전한 식생활을 영위할 수 있는 기본 개념 교육에 대해 중점적으로 토의한다. 식품의 생산, 수확, 가공 및 취급 도중에 혼입 되는 감염 원인에 인자로서 세균성 식중독, 기생충, 전염병, 자선 생성물과 함께 가공, 저장을 위한 합이적 착가물, 환경오염에 따른 식품의 화학적 오염, 미생물 독소 등 여러 오염 물질 등을 식품위생에 대한 학생들이 식품내의 위험인자를 이해하고 이를 피할 수 있는 방법을 학생 스스로 모색하도록 한다.

This course will focus on the educational issues of the food safety. The significance and control of food borne hazards associated with pathogenic microorganisms, microbial toxins, and environmental contaminants will be covered. The panic concerning food safety and the insensitivity concern-

704.674 복식학교육특강 3-3-0
Topics in Clothing Education

복식 상품의 선택과 제작, 사회적 의미를 교육함으로써 가구 구성원이 바람직한 복식 행동을 영위할 수 있고, 결과적으로 긍정적인 자기 개념을 형성할 수 있는 것이 본 과목의 핵심 목표이다. 복식은 사회적 산물이고, 무성의 인지이며, 동시에 자기표현의 수단이라면 사회문화 상호적 특성을 가진다. 이러한 복식의 특성은 문화를 지속시키고 보존시키는데 기여하며, 개인의 사회화 과정에 적극적으로 관여한다. 본 과목을 통하여 복식이 개인의 사회적 현실과 창의성 발현의 장으로서 활용될 수 있는 방법을 마련한다. 또한 복식의 생산과 소비가 산업화됨으로써 복식 상품의 소비자로서의 교육이 필요한 바, 복식의 제작 과정을 이해하여 복식 상품을 무리하게 가짜복제품을 효용적으로 분배함과 동시에 복식 상품을 합리적으로 소비하는 주체로 상담할 수 있도록 교육 방안을 마련한다.

The goal of this course is to cultivate more members of the contemporary society who have a desirable self-concept and reasonable consumption behavior for the clothing item. Educating them how to produce and select clothing items as well as what are the social, cultural, historical, and individual meanings of clothing are the key topics of this course. To be more specific, clothing behavior will be handled as a key topic in relation to an individual’s socialization and inheritance and development of cultural traditions of a society. In addition to this topic, the importance of educating members of a household to be a reasonable consumer of clothing products will be delivered. To become a reasonable consumer, production process of the clothing item and efficient distribution of the family resources on the products will be discussed.

704.675 의복환경학교육론 3-3-0
Clothing Comport Education

의복을 “인체를 둘러싼 최인접환경”으로서 이해하고, 과학적 생활, 건강한 의생활 추구를 위한 의생활 교육을 목표한다. 이 를 위해 의복의 생활적 기능(기초복장기능, 전용복기능, 신체 보호기능, 신체표면결정기능 등)을 중심적으로 다루며, 의복의 사회적 요소와 인체의 각각에 대해 학습하고, 의복과 인체와 환경과의 관련성을 학습한다. 의생활교육은 신생아 기-학생 전 아동기-초등학교 아동기-중학생-장년기-노년기의 각 연령 및 생애주기에 따른 생리적 특성에 맞추어 구성된다.

This course will help students to understand clothing as “a microclimate surrounding human body” and to teach pursuing scientific and healthy wearing of clothing. Topics include biological performance of clothing and parameters from clothing side, human body side and environmental side. Also the relationship between clothing, human body and surrounding environment and clothing comfort in respect of human physiology are studied. Educational issues related to these topics will also be discussed.

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가정 복지의 중요성과 생애 단계별 가정 복지 요구를 이해하고 심습을 통해 귀족·식·의·주·소비생활과 관련된 복지 요구를 충족시킬 수 있는 방법을 학습한다. 또한 지역사회 내에서 가족이 이용할 수 있는 다양한 가정 복지 서비스 및 가정생활의 복지문제에 대해 학습한다.

In this course, students understand the importance of family welfare and study the methods which satisfy the demand for welfare related to family, food, clothing, shelter, consumer life through practice. In addition, students study various family welfare service and the problem of family life in the community.

가정과교육의 논문 작성에 관한 과학적 접근방법, 연구문제 및 가설, 측정, 연구 설계에 대해 살펴본다. 아울러 연구결과를 집중하는 데 적합한 통계방법을 선정하여 자료를 분석한 후 그 결과를 보고하는 방식을 학습하도록 하며, 특히 관람 연구 분야에서 주제를 선택하여 스스로 연구계획서 및 보고서를 작성해 본다.

This course studies various scientific research methodology, experimental problems or hypotheses to the methodology, survey and research designs to writing a paper. In addition, students are taught how to analyze the most accurate data and to single out the most suitable statistical method. This course is particularly beneficial for those students who wish to be more learned in the area of selecting a good topic and making a solid research plan.

실수와 직결의 구조와 성격, 가공, 이화학적 특성에 대한 이론적 토대를 바탕으로, 다양한 의류소재의 성능과 관련된 연구동향을 이해한다. 또한 의복과 환경과의 관계를 연구시켜 과학적 의복과 기후형성에 대한 연구를 중고등학교의 가정과교육에 접목시켜 과학적인 의생활교육을 구현할 수 있도록 한다.

This course is designed to provide students with the theoretical background of textile science and its application for home economics education in middle and high school. Based on the structures, composition, process, and chemical characteristics of fibers, textile and fabrics, students understand current research topics related to clothing and textiles. Further, the role of dressing and health in climate changes is studied to be reflected in the disciplines of middle and high school curriculums, which contributes to scientific education in clothing and textiles.

아동성장 및 발달의 원리, 발달단계에 따른 특성과 요구를 심리학적, 생물학적으로 고찰하여 파악하고, 건강한 아동관을 갖게 하여 이에 따른 올바른 양육방법을 제시함으로써 아동의 발달에 대한 이해를 높인다. 또한 아동발달에 대한 지식과 아동의 삶에 대한 깊은 이해를 바탕으로 가정과교육에서의 효율적인 교수방법을 모색한다.

This course is designed to provide students with the theoretical background of child development and its application for home economics education in middle and high school. This course provides psychological and biological examination about the characteristics of children’s development. It offers proper methods of bringing up children.
723.507 Teaching Children with Learning Disabilities

The course is designed to provide an overview of the educational needs of children with learning disabilities. Students will design their own models of education for children with emotional and behavioral disorders. Students will develop an outline of a possible integration educational program.

723.508 Teaching Children with Mental Retardation

This course will deal with the following topics: the causes and the percentage of the mentally disabled; education for students with minor mental disorders; and education for students with serious mental disorders. Introduction to the theories behind the instruction for children with mental retardation. Case studies and the present condition of educational services will be covered. Learning disability is a common maladjustment among the mentally disabled; education for students with minor mental disorders; and education for students with serious mental disorders will be the focus of investigation, study, presentation, and discussion by students. Students will design their own models of education for children with mental disorders.

723.509A Emotional and Behavioral Problems and Educational Counseling

This course will cover the following topics: the definition of emotional and behavioral disorders; understanding the causes and percentage of autistic children; the grouping and characteristics of emotional and behavioral disorders; applied behavior analysis; and educational program development for children with emotional and behavioral disorders. Students will receive a theoretical introduction about instruction for children with emotional and behavioral disorders through lectures. Case studies and the present condition of educational services will be the focus of investigation, study, presentation, and discussion by students. Students will develop their own models of education for children with emotional and behavioral disorders.

723.511 Seminar in Inclusion

This course includes the overview of counseling which is specially performed and applied. Topics will include the following: the focus of the curricula for each disorder being discussed. Students will design their own models of education for children with disabilities.
related to counseling assistance systems of the types of disabilities, personal counseling, and group counseling for student with disabilities. In additions, consultation, mediation, and counseling in relation to the kinds of problems for general teachers will be discussed. Instruction will be provided by lecturers followed by student’s discussion based on the case of counseling in relation to disability types. Students are required to conduct case studies as well as individual presentation.

723.701 Research in Applied Behavior Analysis and Single Subject

Research in Applied Behavior Analysis and Single Subject

Applied behavioral analysis and single subject research are indispensable to those whose work is related to special educational or language therapy. This course will be on the theoretical bases of the single case study, methodological characteristics, and explanation of observations for individual study execution and study design methodologies.

723.703 Seminar on Special Education Research

Seminar on Special Education Research

In the special education research seminar, each student will select his or her own research subject and complete a research paper. Topics to be covered include global research trends, research trends in Korea, research areas, and research for special education laws.
724.501 Seminar on Environment Education

This course will deal with the teaching and learning methods in environment education. Students will search for mental education at primary and secondary schools and non-institutional environmental education. It will focus on environmental system, and sustainable development and environmental ethics.

724.502 Instructional Design and Teaching Methods in Environment Education

This course will examine changes in the physical and human environment of Korea, focusing on environmental education for the resolution of environmental problems. Physical environments include land form, climate, vegetation, and soil; and human environments include industry, economy, and cities. Students will discuss and search for the causes of and solutions to environmental problems and explore the role of environmental education.

724.502A Change of Land Use and Environment Education

The objective of this course is to enhance the students' understanding of the principles and methods of environmental teaching material development.

724.503A Development of Environmental Education Program

This course is designed to help students to develop practical contents and teaching materials for environmental education.
education. It will cover educational content development for schools and lifelong education.

724.511B 환경교육특강 3-3-0
Topics in Environmental Education

This course will provide an introduction to environmental applications studied in the Department of environment and environmental education. This course will be develop graduate students capabilities necessary to environmental educator based upon interdisciplinary academic activities.

724.516 환경교육연구방법론 3-3-0
Research Methods in Environmental Education

The course requirement includes writing a research proposal and conducting a research study by considering personal interest and recent trends in environmental education. Students are required to review key ideas and diverse research methods in environmental education research. Based on these theoretical backgrounds, it is expected that all students are able to identify their own research questions and develop appropriate inquiry processes.

724.517 Seminar in Teaching of Green Leadership

This course focuses on the direction in education to foster green leaders who can view various phenomenon of modern society where environmental issues is getting important, with insight of sustainability. Social issues related to environmental issues require creative thinking skills, leadership and communication skills to be solved, due to the complexity of interaction among factors of humanities and nature, and conflicts of interest. The goal of this course is therefore to discuss how to support students to be green leaders through secondary school education, and to investigate specific research topics and methods.
360.501 유아교육론세미나 3-3-0  
 Seminar in Foundations of Early Childhood Education  

유아교육의 기초가 되는 영유아 발달 및 교육 이론과 유아교육의 역사적 배경, 현대적·심리적·사회문화적 기초 및 인구방법에 대해 살펴보고, 관련 이론에 근거하여 영유아교육 프로그램을 구성한 후, 그 내용을 현장에 적용하는 방안에 대해 토론한다. 21세기 한국 사회의 요구에 맞는 유아교육의 방향을 제시받을 수 있도록 현재의 교육내용, 유아교육과정 및 유아교육방법에 대한 심도 있는 논의를 통해 발전적 평가를 시도한다.

This course reviews the following: studies of child development and educational theories; the historical foundations and research methods in early childhood education; examination of practical experiences; and evaluation of early childhood programs based on theories. Topics dealing with new directions of early childhood education in the 21st century will be discussed.

360.504 영유아발달세미나 3-3-0  
 Seminar in Early Childhood Development  

현대 발달 심리학의 주요 이론과 연구 경향에 중점을 두어 영유아의 신체적, 정서적, 인지적, 언어적, 사회적, 정서적, 도덕적 발달 특성에 대한 최신 연구를 강조한다. 이를 기반으로 하여 발달적으로 적합한 유아교육 프로그램 구성을 위한 이해를 높이고, 유아의 현장에서의 적응 방법을 탐색한다. 이와 함께 영유아 발달이론과 문화적 관계성에 관한 모색이 높이, 한국사회에 적합한 유아교육 프로그램의 구성을 위한 시사점을 제공받는다.

This course examines the characteristics of physical, cognitive, emotional, social, moral, and language development of infants and preschoolers, and their implications, by reviewing recent researches. Organization and practical application of early childhood programs proper to the needs of Korean society will be possible for students after learning the theoretical background.

360.505 유아교육과정연구 3-3-0  
 Curriculum for Early Childhood Education  

교육과정의 새로운 이론과 실제의 철학적, 사회적, 심리적·정서적·영유아의 경향성을 분석하고 이를 기초로 하여 우리나라 유아교육과정의 적용 가능성을 탐색한다. 이를 위해 유아를 위한 교육과정 구성의 관련 이론을 고찰하고, 다양한 유아교육 프로그램의 접근을 이해한다. 교육과정의 예시에서부터 실행, 평가에 이르기까지의 과정이 유기적이고 통합적으로 이루어지도록 이끄는 유아교육과정의 모범을 모색하고, 이를 실제에 적용·평가해 봉으로써 현장 개선을 위한 시사점을 제시한다.

This course provides presentations and discussions of basic principles underlying the development and planning of curriculum in early childhood education. The course consistently interweaves theory and practice for the examination of curriculum areas and models. Through discussion, presentation, and observation of preschools, students have the opportunity to examine their own philosophical framework.
Assessment of Early Childhood Development

The purpose of this course is to provide students with an understanding of theories and techniques of testing as applied to the assessment of the level of early childhood physical, cognitive, emotional, social and language development, and the diagnosis of their integrity. Students have the opportunity to utilize various assessment tools, and then discuss and the diagnosis of their integrity. Students have the opportunity to utilize various assessment tools, and then discuss

Knowledge of theories and techniques of testing are applied to the assessment of the level of early childhood physical, cognitive, emotional, social and language development, and the diagnosis of their integrity. Students have the opportunity to utilize various assessment tools, and then discuss their respective strengths and weaknesses. Students will also explore the development and application of new assessment tools through these processes.

Play in Early Childhood Education

Play is an expression of children’s own thoughts, feelings, and ideas. It is a valuable opportunity for children to learn and develop various ways for children to express themselves. Children express their emotions, ideas, and thoughts through play. Play is a natural way for children to explore their environment and express their feelings. Play also helps children develop social skills and relationships. This course will provide students with knowledge and skills to understand and support children’s play.

Teaching Children with Special Needs

This course introduces critical issues related to educating children with special needs. Students will learn various ways of assessing children with special needs from screening to behavior observation. Students will have an opportunity to develop their own viewpoints through examining recent researches about early intervention and early childhood special education programs. This course will provide an in-depth understanding of children with wide range of abilities and disabilities who are included in regular early childhood programs as well.

Theory in Early Childhood Education

This course is designed for students to deepen their theoretical knowledge and skills in early childhood education. Students will explore major issues in early childhood education and learn to develop effective teaching strategies.
### Advanced Course of Counseling for Young Children

**360.521**

- **Course Title:** Advanced Course of Counseling for Young Children
- **Description:** Focuses on preparing students to become efficient managers in education institutions and communication skills in order to become a manager in education institutions. It provides opportunities to think about principles/practices related to the foundation, organization and management of early childhood settings.
- **Key Concepts:** Management, organization, and communication skills.

### Seminar in Parent Education

**360.523**

- **Course Title:** Seminar in Parent Education
- **Description:** This course deals with the planning, management and evaluation of principles/practices related to the foundation, organization and management of early childhood settings. It includes theories teaching strategies and institutional materials for the science education for young children.
- **Key Concepts:** Parent education, management, and evaluation.

### Studies in Materials and Methods for Early Childhood Education

**360.524A**

- **Course Title:** Studies in Materials and Methods for Early Childhood Education
- **Description:** This course provides advanced concepts and principles of instructional media in early childhood education. It covers classroom conditions, contents, and characteristics of the children, students have the opportunity to examine their own instructional media such as the computer and the internet.
- **Key Concepts:** Instructional media, classroom conditions, contents, and characteristics of children.
742.601 영아발달과 교육프로그램 연구 3-3-0

Advanced Studies in Infant Development and Educational Programs for Infants and Toddlers

최근 사회 변화로 유아교육기관에 다니는 유아들의 연령이 급격히 낮아지고 있습니다. 영아기와 강아기 유아의 경우 보육에 대한 요구가 높아 다양한 교육프로그램을 통한 인지적 자극과 사회적 경방의 확대에 대한 관심이 높아지고 있습니다. 본 수업은 영아기와 강아기 유아의 발달에 영향을 미치는 사회문화적 요인과 가족적 맥락을 이해하고 학습을 통해 영아기와 강아기 유아의 발달에 적합한 교육프로그램을 분석하여 영아교육의 방향을 제시합니다.

The need for care and education for infants and toddlers has increased regardless of parents’ working conditions. And early childhood professionals are realizing to the importance of early childhood years in brain development and in laying educational foundations through high quality early childhood care and education programs. This course is an advanced-study examining a wide range of educational programs for infants and toddlers for supporting their development in context of family, society and culture.

742.602 영유아교육 및 보육 정책 세미나 3-3-0

Seminar on the Policy of Early Childhood Education and Care

영유아교육 및 보육기관의 형태가 다양해짐에 따라, 점점은 교육과 보육서비스에 대한 요구가 높아지고 있습니다. 또한 저출산으로 인한 사회적 변화는 유아교육의 의무교육화와 영유아교육의 통합에 대한 중요성을 더욱 심각하게 제기하고 있습니다. 따라서 본 수업을 통하여 이러한 사회변화와 반영한 정책의 동향을 분석하고 영유아교육에 대한 시각을 조망합니다.

Children must be understood within their family, culture, community and the society they live in. Therefore, the policy of early childhood education and care that gives directions for the various schools and programs is critical for young children and their families. This seminar provides a comprehensive review on the policy of early childhood education and care for infants, toddlers, and young children.

742.603 유아 인지발달 및 창의성 연구 3-3-0

Advanced Studies in Children's Cognitive Development & Creativity

유아의 인지발달에 대한 최근의 연구는 학습과 연구과정을 바탕으로 투자발달에 대한 연구와 창의력발달의 연구결과를 적극적으로 반영하고 있습니다. 또한 인지발달의 새로운 관심 영역인 유아의 창의성 발달에 대한 다양한 이론과 최근 연구동향에 대해 이해를 바탕으로 유아의 창의성 발달에 도움을 주는 교육방법과 프로그램을 연구한다.

Recent research on cognitive development has been expanded through the advances in neurosciences and cognitive psychology. In addition, the increased interest in creativity extended the research on young children in various directions. This course provides an in-depth study examining various theories and recent research on young children’s creativity and educational programs designed to promote creativity development.
742.607 유아교육의 쟁점과 최근 동향 3-3-0

Current Issues and Trends in Early Childhood Education

사회의 변화에 따른 유아교육의 새로운 쟁점과 최근 동향을 탐색한다. 예를 들어 유아교육의 새로운 연구주제가 되고 있는 유아를 위한 다문화교육이나 장애유아 통합교육 등의 현안을 분석하여 유아교육현장에 대한 시사점과 유아교육연구의 지평을 확대한다.

이 수업을 통해 학생들은 다양한 영역의 업계에 대한 이해를 바탕으로 자신의 관심분야에 따라 유아의 입양이나 기관의 특성에 따른 프로그램을 제안해본다.

742.608 유아건강교육세미나 3-3-0

Seminar on Health Education for Young Children

유아의 건강과 관련하여 유아의 영양과 운동발달 및 안전과 관련된 현안 및 정책에 대한 이해를 바탕으로 유아의 건강증진을 위한 다양한 교육프로그램을 분석하고 유아교육현장에 주는 시사점을 모색한다.

이 수업을 통해 학생들은 다양한 프로그램에 대한 이론적 배경과 교수방법에 대하여 분석한다. 예를 들어 유아를 대상으로 한 멀티미디어교육, 동작교육, 건강교육 뿐 아니라 유아를 대상으로 한 영어교육프로그램의 이론적 근거를 바탕으로 유아의 발달에 미치는 영향을 논의한다. 이 수업을 통해 학생들은 다양한 유아교육프로그램을 분석하여 자신의 관심분야에 따라 유아의 연령이나 기관의 특성에 따른 프로그램을 제안해본다.

742.609 유아교육프로그램연구 3-3-0

Advanced Study on Early Childhood Program

유아교육의 다양한 프로그램에 대한 이론적 배경과 교수방법에 대하여 분석한다. 예를 들어 유아를 대상으로 한 멀티미디어교육, 동작교육, 건강교육 뿐 아니라 유아를 대상으로 한 영어교육프로그램의 이론적 근거를 바탕으로 유아의 발달에 미치는 영향을 논의한다. 이 수업을 통해 학생들은 다양한 유아교육프로그램을 분석하여 자신의 관심분야에 따라 유아의 연령이나 기관의 특성에 따른 프로그램을 제안해본다.

이 수업을 통해 학생들은 다양한 영역의 업계에 대한 이해를 바탕으로 자신의 관심분야에 따라 유아의 입양이나 기관의 특성에 따른 프로그램을 제안해본다.
This course provides an overview of Korean education has developed over recent decades with respect to planning, process, policy and structure. Students will analyze the roles of education in promoting economic development and how various stakeholders contributed and responded to educational development in the Korean context. This historical-sociological approach will help to reveal particular causal relations between education and social development.

Education for Sustainable Development

Education for Sustainable Development (ESD) will be closely examined in terms of benefits and limitations. The UN's agenda, DESD (2005–2014) will be specifically addressed. Debates, resolutions, strategies, and alternative approaches of international education development cooperation will be discussed. This course is a seminar which various issues of international education development cooperation will be discussed. Debates, resolutions, strategies, and alternative approaches will be addressed.

Education and Gender Equity

Gender inequality is at the heart of many issues in global education development cooperation at an international level. Education is understood as a major means of social participation and empowerment for women and girls. Feminism has raised the challenges of gender discrimination and has proposed alternatives to the traditional gender relations.

Development Strategies

Global influences on educational reform will be explored. International flows of students, money, knowledge, scholars and workers will be examined along with economic growth goals.

Theories of International Education

This course will examine the link between education and development on a global scale. International flows of students, money, knowledge, scholars and workers will be explored. Global influences on educational reform will be studied at the domestic and international level. Social, political, community and spiritual goals of education will be examined along with economic growth goals.
This course is a seminar which various issues of international education development cooperation will be discussed. Debates, resolutions, strategies, and alternative approaches will be addressed.

743.802 Practice of Writing Research Proposal

This seminar will have students review existing project/program reports. Students will examine such reports for strengths and weaknesses and be guided to make high-quality reports for international development in education. The course is intended provide practical help to generate revenue and resources.

743.803 Dissertation Research

This course is for students who are writing their thesis under close consultations by thesis readers. It is expected that academic discussions and theoretical discourses will be taken place during the semester. Research topics, research methods, and research design should be addressed during this time period. The class requires that students submit a progress report to his/her advisor for comments. Grading is Pass or Failure.

743.804 R&D Practicum

This course provides students with credit for participating in an internship as preparation for future professional work in international development cooperation of education. Students will have opportunities to work in government bodies, research centers, international organizations, and NGO/NPOs within the limit of opportunities. Every advisee under advisor’s approval takes on one site for R&D internship and is supposed to follow the rules and guidelines of the institution. Grades are Pass or Fail.

M1905.000100 International Education Development: Theories and Practices

International Education Development: Theories and Practices

This course explores theoretical approaches which link education to national, social, political, and economic development. The functions and roles of education in relation to international development are to be discussed. The course will provide students with a theoretical framework as well as introduce them to current topics and debates in the field of International Educational Development. In addition, practices in the field are provided and discussed in relation to theories in class.

M1905.000200 Education and Development in Developing Countries

Education and Development in Developing Countries

M1905.000300 Education Development Cooperation of NGOs

Education Development Cooperation of NGOs
본 강좌는 교육개발협력을 둘러싼 정치·경제학적 이론과 논쟁을 비판적으로 검토하는 것을 목적으로 한다. 국제사회에서 개발협력의 재원을 확보하고, 특정한 지원분야를 선정·지원이 이루어지는 과정은 순수한 인도주의적 이념에 터해 있지 않다. 국제기구간의 서로 다른 이념적 특성, 지원방식(다자, 양자, 빌바이), 예산의 규모, 지원지역 및 대상 단체 등의 특정 성향에 대해서 자료를 수집하고, 이를 비판적이고 분석적으로 다루게 될 것이다. 이 수업을 통하여 학생들은 국제사회의 교육 지원을 둘러싼 복잡한 정치·경제학적 정치·경제학적 이념에서 이해하게 될 것이고, 이념으로부터 자유로운 교육지원을 위한 방안을 논의하게 될 것이다.

This course aims at critically reviewing the discourse on social political economics in education development cooperation in terms of by whom to aid for, what subsectors in education to be chosen, what ways to be taken (either multilateral, bi-lateral, or multi-bilateral), and what size of total budget to be allocated. Considering that education policies reflect complicate arguments based on various ideology, it is significant to put education development and cooperation onto the table of politico economics. Then, students will grasp a certain form of political and economical maps in global level to critically discuss education perhaps free from undesirable intervention of political authority.
The course aims to discuss effectiveness of education policies and planning in different level of implementation of global agenda while global education agenda is to be critically reviewed. Asking questions of how education policies run by each nation and international organizations have anything to do with actual practices in individual school level, this course will help students understand inter-related political social cultural and economic meanings of education policy and how they are linked to educational planning. Theories and practices upon such as ‘policy flowing,’ ‘policy borrowing,’ and ‘policy lending’ will be dealt as main themes of discussion.
생활과학대학
College of Human Ecology
Advanced Principles of Nutrition

영양소의 소화, 흡수, 제대기능, 대사 과정을 이해하고 영양소 대사과정과 질환의 연관성을 파악하며 영양관리에 적용하는 능력을 갖춰야 한다. 각 영양소의 조화와 특성을 설명할 수 있으며 예를 들면 대사과정과 관련된 영양소의 특성을 파악한다.

The objective of this course is to provide students with the fundamental understanding on nutrients. Types and functions of various nutrients, digestion and absorption of nutrients, metabolic pathways of nutrients, and the relationship between metabolic disorders and the development of diseases will be covered. Energy balance, nutrition in aging, and antioxidant nutrients will be covered.

Clinical Nutrition Research

임상영양연구를 구성하고 실행할 수 있도록 여러 연구 방법론에 대하여 학습하여 연구결과 자료를 분석하고 이해하는 능력을 배양하는 데 목적이 있다. 특히 논문을 검토하여 연구 방법 및 연구결과의 기술 등을 이해할 수 있는 능력을 기르며 새로운 가설을 세우고 임상영양연구를 설계할 수 있도록 한다. 통계분석 방법, 연구 용어, 근거증명의학, 연구계획서 작성, 인증 등을 주요 학습내용으로 한다.

The objective of this course is to provide students with the fundamental understanding on various nutritional research methods and data analysis methods in order to develop the ability to plan and execute clinical nutrition research. Students are expected to gain the ability to critique research methods and interpretation of the data using current research articles. Students are also expected to be able to develop a hypothesis and research plans in the area of clinical nutrition. The topics include statistics, evidence-based therapy, research ethics, writing research proposal, and etc.

Seminar in Food and Nutrition 1

대학원 석사과정 학생이 학위논문과 관련된 주제에 대해 최근 연구경향과 연구결과를 과학 논문을 통해 조사 및 연구하여 논문작성에 도움을 주는 한편, 관련 분야의 학문적 지식과 이해의 폭을 넓혀 식품 및 영양에 관한 연구를 이행해 나갈 수 있는 자질을 갖출 수 있도록 한다.

This course will cover the development and writing of research projects, reports, and manuscripts. Discussions on current topics in nutrition and food science will also be included.

Seminar in Food and Nutrition 2

대학원 박사과정 학생이 식품 및 영양에 관한 분야에 관심이 있는 다른 분야에 대해 관심 있는 주제를 설정하고, 해당 주제에 관련된 최신 과학 논문을 조사하여, 새로운 연구방법 및 연구결과의 분석법을 제시함으로써 관련 분야의 최신 연구성과와 연구결과 등에 관한 이해를 돕고 다양한 정보를 제공하여 학부생단원연구를 이행해 나갈 수 있는 기본 자료 습득의 기회를 제공한다.

This course will cover the development and writing of research projects, reports, and manuscripts. Discussions on current topics in nutrition and food science will also be included.

Studies in Advanced Food Science

다양류, 지질, 단백질, 섬소, 바형 성분, 2차 대사 산물 등의 화학 구조, 성질, 반응 및 식품의 변화, 조리 가공 중의 변화 등 식품 합성 과정에서 갤럽 실제방법을 학습한다.

Intended primarily for first-year graduate students, this course will review food science and the chemistry and biochemistry of food components and their changes during processing.

Advanced Food and Nutrition Analysis Lab.

기본적인 식품의 성분 분석과 식품의 미량 원소의 분석 및 성향에 사용되는 실험기기의 원리를 이해하고, 실험 실험을 통해 기기의 사용법을 숙지하여 식품의 분석에 필요한 이론과 실험 기술을 학습한다. 식품학 연구하는 데 필요한 연구방법론과 실험 방법을 학습하고, 동물 실험기술 및 실험 기기의 원리를 분석하여 적용을 통해 조리 시료를 분석하도록 한다. chromatography, spectroscopy, spotchem 등의 기기 사용 방법을 습득하고, 분석 분석, 동물 조리, 및 western analysis 등 을 학습한다.

The objective of this course is to provide students with the fundamental understanding on 1) the analysis of food composition using instruments used in Food Science research, and 2) the principles of tissue sample analysis used in nutrition research. Students are expected to gain ability to use instruments such as chromatography, spectroscopy, and spotchem, and to perform animal tissue sampling, western blot analysis, and rheologic analysis.

학점구조는 "학점수-주당 강의시간-주당 실습시간"을 표시한다. 한 학점은 15주로 구성됨. (The first number means "credits"; the second number means "lecture hours" per week; and the final number means "laboratory hours" per week. 15 weeks make one semester.)
Carbohydrate and Lipid Chemistry

The course will cover the metabolism of vitamins including their fundamental aspects in nutrition and health.

Mineral Nutrition

This course will cover the nutritional role of minerals including their biochemical and physiological functions, biological availability, metabolism and hormonal regulation, requirements, deficiency and excess, relations between minerals and chronic disease, and interaction with other nutrients.

Protein Chemistry and Enzymology

This course will cover the chemistry and physical chemistry of proteins with respect to current methods of characterizing and purifying proteins. Functional properties of protein in food systems will be emphasized.

Clinical Nutrition Therapy 1

The objective of this course is to provide students with the fundamental understanding on nutrition and diagnosis-related care of patients and use of evidence-based nutrition intervention for the management of patients. Students are expected to gain the ability to prioritize nutritional diagnosis, and execute and monitor nutrition intervention. The topics include malnutrition, obesity, diabetes, cardiovascular disease, and execute and monitor nutrition intervention. The topics include malnutrition, obesity, diabetes, cardiovascular disease, and chronic disease, and interaction with other nutrients.

Clinical Nutrition Therapy 2

The objective of this course is to provide students with the fundamental understanding on nutrition and diagnosis-related care of patients and use of evidence-based nutrition intervention for the management of patients. Students are expected to gain the ability to prioritize nutritional diagnosis, and execute and monitor nutrition intervention. The topics include malnutrition, obesity, diabetes, cardiovascular disease, and chronic disease, and interaction with other nutrients.
set up appropriate nutritional management goals and plans, and execute and monitor nutrition intervention. The topics include renal disease, neoplastic disease, critically ill patients, pediatric nutrition, geriatric nutrition, enteral and parenteral nutrition.

352.623 고급영양상담 및 교육 2-2-0

**Advanced Nutrition Counseling and Education**

본 교과목은 개인이나 집단의 식행동 변화를 통한 영양상태 개선, 건강 증진에 목표를 두고 있다. 구체적으로 식행동을 이해하는 데 필요한 행동설명이론을 익히고 영양교육과 상담에 필요한 인소, 상담기법, 행동수정 방법, 교육방법에 대해 학습한다. 그리고 영양교육과 상담에 활용되는 도구와 매체에 대해 학습한다. 이에 병원 등 현장에서 수행되는 영양교육과 상담의 실제를 살펴보고, 영양상담과 교육 프로그램 계획, 효과적인 교육과 상담을 수행하는 능력을 배양하고자 한다.

The objective of this course is to provide students with 1) the knowledge on human behavior to help understand the eating behavior and 2) the knowledge on communication, counseling, and education techniques. Students will also study the educational tools used in nutrition education and counseling practice. Students are expected to gain the ability to plan nutrition education program and to execute an effective and practical nutrition education and counseling for patients, which will lead to improvement of nutritional status through behavioral modifications.

352.704 고급식품미생물학 3-3-0

**Advanced Food Microbiology**

식품의 저장, 발효, 변패, 식중독에 관계하는 미생물들의 생태, 생리 및 생화학 등에 대하여 공부한다.

This course will cover a critical evaluation of recent literature on the microbiology of food systems.

352.706 식품발효학 3-3-0

**Food Fermentation**

식품의 발효에 관여하는 미생물의 특성, 미생물 효소, 발효 증에 일어나는 식품 성분의 변화 및 각종 발효 식품의 특성 등에 대하여 학습한다.

This course will cover the characterization of microorganisms involved in soybean, dairy, and other food fermentation and factors influencing their activity as well as natural and controlled fermentation.

352.710 식품학특강 3-3-0

**Current Topics in Food Science**

식품학에 관련된 특정 주제에 관한 최근 지식과 정보를 얻기 위해 국내외의 학술 저지를 읽고 요약하며 토론한다.

This course will cover a critical evaluation of recent literature on food science.

352.715 영양조사 및 평가법 3-3-0

**Nutritional Survey and Assessment**

식이섭취 조사, 신체계측, 생화학적 지표 등을 이용하여 개인과 집단의 영양 상태를 평가함에 있어서 응바른 조사 계획, 각 방법에 이용될 수 있는 표준화된 방법 및 기구, 공인된 평가 기준 등 을 배워 실제 연구에 이용할 수 있도록 한다.

This course will cover comparisons of the strengths and weaknesses of various dietary survey methods. Topics will cover the techniques of anthropometry and biochemical methods in nutritional assessment and the evaluation of standards.

352.722A 식품생리활성론 3-3-0

**Food Functionality**

효소반응속도론, 역제인자 및 활성인자, 조효소 등 효소의 기본 작용 원리에 대하여 학습하며, 식품의 성분 변화를 일으키는 식품내 효소와 그 반응조건 및 역제조건 등을 조사한다.

This course will cover the principles of enzymology including enzyme kinetics, cofactor, inhibitor, and activators as well as the functions, reaction mechanism, and reaction conditions of intrinsic food enzymes.

352.723 모자 및 성장기영양 3-3-0

**Maternal and Child Nutrition**

임신, 분만, 수유기의 생리적 생화학적 특성 및 성장기의 특성 그리고 이에 따른 영양문제를 연구한다.

This course will cover the physiological changes and nutritional requirements that occur during pregnancy and lactation. Nutritional factors for optimum growth of infants and children will also be examined.

352.726 영양정책 3-3-0

**Nutrition Policy**

가공식품의 성분변화 3-3-0

식품의 저장, 발효, 변패, 식중독에 관계하는 미생물들의 생태, 생리 및 생화학 등에 대하여 공부한다.

This course will cover a critical evaluation of recent literature on the microbiology of food systems.

352.727 가공식품의 성분변화 3-3-0

**Chemical Changes During Food Processing**

식품가공과 저장, 조리가 식품 내의 영양성분에 미치는 영향을 관찰한다. 여러 가지 가공방법에 따른 영양소 파괴구조를 연구한다. 식품저장 및 보관에 따른 영양성분의 변화 및 영양성분의 예측과 예측을 통해 식품성분의 변화를 예측하고자 한다.

This course will cover the chemical changes in food components and the stability of nutrients during the processing, storage, and preparation of foods from raw materials to products for human consumption.
consumer acceptance. Methods for measuring these qualities, underlying physiological principles, and statistical methods for analyzing the results will be discussed.

Research Methods in Foodservice

Methods for measuring these qualities, underlying physiological principles, and statistical methods for analyzing the results will be discussed.

Students will learn about research methods in the field of food service management and will advance techniques of writing a research proposal in the field. The lectures will focus on research designs and statistics frequently used in food service management research and students are to critically discuss about research methods in the published research papers in the field. In addition, the lectures will be given on writing a research proposal and students are to be assigned to write a proposal on the topic chosen on their own as the final report.

Advanced Food Preparation

Advanced Food Preparation focuses on research designs and statistics frequently used in food service management research and students are to critically discuss about research methods in the published research papers in the field. In addition, the lectures will be given on writing a research proposal and students are to be assigned to write a proposal on the topic chosen on their own as the final report.

Nutritional Physiology

This course will cover the mechanistic elucidation of bodily functions, nutrient metabolism, and physiological processes including cell communication, integration, homeostasis, and regulation on cellular and molecular levels. Also included will be reviews of recent literature on nutritional physiology—the endocrinal control of nutrient metabolism, growth, reproduction, and aging.

352.734 영양역학 3-3-0

Nutritional Epidemiology

Nutritional Epidemiology is a study of the relationship between diet and health to find ways to improve the health of the nation through dietary change.
352.738 식품안전성평가 3-3-0

Safety Assessment of Food

식품의 가공, 저장을 위한 인위적 첨가물, 환경오염에 따른 식품의 화학적 오염, 미생물 독소 등 여러 오염물질에 대해 식품의 안전성을 측정하는 여러 과학적 방법들을 논의하고, 품질실험에 의한 평가 자료로 인해 적용하는 방법을 익혀야 할도록 학습한다.

This course will cover the toxicological evaluation of foods that will lead to national and international regulations pertaining to the quality, wholesomeness, and safety of foods.

352.739 임상영양실습 1 2-0-8

Clinical Nutrition Internship 1

임상영양사교육 프로그램의 과정 학생은 임상영양실습 협약 의료기관에서 실습교육훈련을 해야 한다. 임상영양실습을 이 과목을 통해 학생들은 환자의 영양관리 실제를 현장실습을 통해 배우고 임상영양사로서의 역량과 수행능력을 갖출 수 있게 된다. 교육 내용은 다음과 같다. 신체계측을 하고 평가한다. 식사기획과 24시간 회상법을 이용하여 식사취취량을 조사하고 분석 평가한다. 영양제한을 한다. 영양갑감을 한다. 환자식을 설명한다. 환자식을 작성한다.

Every graduate student in Clinical Dietitian Education Program are asked to work as an intern student at the hospital affiliated with the program. Students will learn the nutrition care system in the hospital setting and gain the ability to work independently as a clinical dietitian. Topics covered include anthropometric assessment, dietary assessment using 24hr recall and dietary records, nutritional diagnosis, therapeutic meals, prescription of appropriate diets.

352.740 임상영양실습 2 2-0-8

Clinical Nutrition Internship 2

임상영양사교육 프로그램의 과정 학생은 임상영양실습 협약 의료기관에서 실습교육훈련을 해야 한다. 임상영양실습을 이 과목을 통해 학생들은 환자의 영양관리 실제를 현장실습을 통해 배우고 임상영양사로서의 역량과 수행능력을 갖출 수 있게 된다. 교육 내용은 다음과 같다. 신체계측을 하고 평가한다. 식사기획과 24시간 회상법을 이용하여 식사취취량을 조사하고 분석 평가한다. 영양제한을 한다. 영양갑감을 한다. 환자식을 설명한다. 환자식을 작성한다.

Every graduate student in Clinical Dietitian Education Program are asked to work as an intern student at the hospital affiliated with the program. Students will learn the nutrition care system in the hospital setting and gain the ability to work independently as a clinical dietitian. Topics covered include anthropometric assessment, dietary assessment using 24hr recall and dietary records, nutritional diagnosis, therapeutic meals, prescription of appropriate diets.

352.741 임상영양실습 3 2-0-8

Clinical Nutrition Internship 3

임상영양사교육 프로그램의 과정 학생은 임상영양실습 협약 의료기관에서 실습교육훈련을 해야 한다. 이 과목을 통해 학생들은 환자의 영양관리 실제를 현장실습을 통해 배우고 임상영양사로서의 역량과 수행능력을 갖출 수 있게 된다. 교육 내용은 다음과 같다. 교육 자료를 개발한다. 임상영양치료를 NCP 모형에 따라 실시한다. 환자식 식단을 작성한다. 집단영양교육 시험 강의를 한다.

Every graduate student in Clinical Dietitian Education Program are asked to work as an intern student at the hospital affiliated with the program. Students will learn the nutrition care system in the hospital setting and gain the ability to work independently as a clinical dietitian. The topics include the development of nutrition education materials, medical nutrition therapy using NCP model, the development of patient menu, group nutrition education for patients.
Reading and Research

식품영양학을 전공하는 석사 및 박사과정 학생들의 논문지도를 원활하게 하기 위한 과목이다.

This is a course designed to improve the graduate students’ masters thesis or doctoral dissertation.

Seminars in Retail Service

본 과목은 전통적인 리테일 서비스뿐 아니라 변화하는 리테일 서비스의 현황 및 최근 이슈를 이해하는 것을 목적으로 한다. 특히 전통적으로 리테일 산업의 주류를 차지하는 식품과 의류 분야를 주요 예로 하여 서비스의 질 향상을 위한 고민을 하며, 이를 위한 방향을 모색하고자 한다.

This purpose of this course is understanding the current status and issues in retail service. Students will participate in presentation and discussion on improving the quality of retail service and therefore increasing customer satisfaction, especially focusing on the retail sectors of food and clothing.

Experimental Design in Food and Nutrition

식품영양 분야에서 실험적, 역학적 연구에 필요한 연구설계와 수집된 자료분석에 사용되는 통계적 기법을 익힌다. 특히 통계적 기법의 수련이 필요한 관리지표 자료와 survey 자료분석에 중점을 두어 실제 자료수집, 분석의 실습훈련을 병행한다.

This course will cover statistical methods in food science and nutrition research, and experimental design and the interpretation of results.

Advanced Sensory Science

식품에서 감각을 유발하는 이화학적 인자 및 그의 측정, 감각생리학, 감각인지과학 등의 기초 이론을 기반으로 한 감각 및 인식의 이해, 최신 방법론 및 감각과학의 최신 연구 동향 및 각각의 기초를 유발하는 식품의 내적 및 외적 요인과 그 기전에 대해 복잡하게 다듬을 목적으로 감각과학에 대한 이해를 심화한다.

In this class, students will learn physicochemical components that derive sensory perception and their measurements. Mechanisms of perception and cognition based on sensory physiology and sensory cognitive sciences will be addressed. Overview of the latest research trend in sensory science will provide deeper understanding of external and internal factors affecting sensory perception and hedonic responses.
의류과학(Dept. of Textiles, Merchandising and Fashion Design)  

353.501 외국문학연구방법론 3-3-0  

Research Methods in Clothing & Textiles  

의류학을 과학적으어 연구하기 위하여 필요한 연구설계 및 자료 분석방법을 학습한다. 연구설계의 내용으로는 연구의 개념, 연구의 절차, 변수와 측정, 적도 자료수집방법, 실험설계 등이 포함되며, 자료분석의 내용으로는 원시적 기술을, 상관관계, 회귀분석, 경로 분석, 인자분석, 분산분석 등이 포함된다. 이를 통해 자신의 연구를 스스로 설계하고 자료를 통계적으로 분석할 수 있는 능력을 기른다.

This is an introductory course on the research methods for collecting and analyzing quantitative data in the clothing and textiles area. Major topics include scientific problem solving, measurement, scales, descriptive statistics, parametric statistics, and non-parametric statistics.

353.502A 외국문학세미나 1 3-3-0  

Seminario in Clothing & Textiles 1  

피복재료, 피복정리 및 의복생물학에 관한 과학적 연구방법과 보고문에 대한 논의 및 토의를 통해 과학과 전반부의 연구동향과 최신정보를 익혀들이고 보다 효과적인 자식, 연구능력과 발표 능력을 키울 수 있도록 한다. 세미나에는 국내외의 각종 학술지 및 학술논문을 위주로 토의, 평가를 거쳐 논문을 완성하는 데 도움이 되도록 한다.

In this class, students will review and discuss current theoretical and research developments in the area of textile chemistry, detergency, and clothing physiology. Applications for research as well as practices of presentation are explored through seminars.

353.502B 외국문학세미나 2 3-3-0  

Seminario in Clothing & Textiles 2  

복식분야에서 발표되는 학술연구논문을 읽고 평가해보며 학문의 체계를 이해하고 그 분야의 최신 정보와 연구동향을 익혀들이며 보다 과학적인 연구방법을 습득한다. 대상의 연구논문은 국내외의 학술지 및 미국과 일본 등 복식학 연구가 앞선 나라의 학술지와 학문논문으로 한다.

Trends and issues in clothing research are discussed in this course. Students are required to read recent articles published in related journals, and criticize them in terms of problem identification and research procedure. Through these activities, students will draw conclusions and develop their own research theories. The journals to be discussed are selected from those of Korea, Japan, and America.

353.601A 패션디자인발상연구 3-1-4  

Studies in Creative Ideas for Fashion Design  

창조적인 패션디자인을 위해서 급구는 새로운 아이디어의 발상과 전개는 매우 중요하다. 학부 과정에서 익히고 습득한 디자인과 제작에 관한 기초적인 지식을 바탕으로 이의 활용 효과를 극대화하기 위한 전략을 마련한다. 이를 통해 다양한 디자인의 조형적 특성에 대해 고찰하고 뛰어난 다양한 디자인의 작품을 포괄적인 시각에서 고찰함으로써 디자인 발상의 폭을 넓히고 이를 패션디자인에 적용하기 위한 아이디어 전개 능력을 키우는。

학점구조는 "학점수-주당 강의시간-주당 실습시간"을 표시한다. 한 학기에는 15주로 구성됨. (The first number means "credits"; the second number means "lecture hours per week"; and the final number means "laboratory hours per week. 15 weeks make one semester.)

For most creative fashion design, coming-up with new ideas, developing and making them possible are the very critical factors. Based on existing ability gained through previous courses, this course is for maximizing the effect of applying the new ideas. Students will be requested to get the original ideas from various design areas such as industrial design, visual design, furniture design or so not only from the fashion design. Creating a collection of innovative garments with diverse materials and techniques which are required.

353.603A 한국복식사후론 3-3-0  

Topics in History of Korean Costume  

한국복식의 변천과정을 시대별로 분석하고, 동북아시아에 위치한 중국, 한국, 일본 간의 복식에 있어 상호 영향을 미치는지를 비교 연구하며, 복식의 종류와 생활양식, 구조적인 차이, 시중의 조성, 색상, 문양, 기타 복식에 부속되는 장식품 등에 대해 비교, 고찰한다.

This course conducts an analysis of the changes in Korean costume over time as well as a comparative study of the traditional costumes of the North-East Asian Countries China, Korea, and Japan. Specific topics include types of costume, lifestyle, construction, fabric selection, color, pattern, and accessories.

353.604A 한국복식학특론 3-1-4  

Topics in Construction of Korean Costume  

조선조양 이후 전래되어 온 여러 가지의 관복 중 대부분고도 미려한 여자예복에 대해, 의례에 따른 예복의 종류 및 부속품, 장신구 등을 포함한 조화를 세우고 그 의미를 우수하도록 한다. 또한 예복에 따른 구성법을 분석하고, 현대 의생활에 활용할 수 있는 방법도 연구한다.

This course studies Korean women’s costume that are worn during special rituals. We will analyze the meaning, structure, design, and colors of Korean women’s costumes since the Chosun Dynasty. Students will be encouraged to design clothing that harmonizes traditional aspects with modern fashion.

353.605A 의복체형론 3-3-0  

Somatology for Clothing  

마틴측정방법과 3차원 측정 방법 등 다양한 측정 방법을 배우고 측정결과의 수직적, 시각적 분석과 해석 능력을 기르는. 또한 인종, 생활, 연령, 시대별 제작 차이에 대하여 학습한다.

Students will study various anthropometric methods such as the Martin’s Method and how to use a 3-D scanner. They will develop mathematical, optical abilities through these methods. In addition, students will evaluate the differences in body type resulting from factors such as ethnicity, gender, age and time.

353.606A 세척원리 및 평가 3-3-0  

Detergency: Theory & Testing  

세탁과 세척의 원리에 관하여 학습하여 주로 계면활성제의 성질, 오염과 세척의 기구, 세척단계방법 등에 관하여 논한다. 강의 내용은 계면활성제의 종류와 특성, 오염의 성분과 특성, 고형오염


**353.609 Clothing and Human Behavior**

This course provides an introduction to the chemical composition, form, function, role, self-concepts, personality, body image, and social status.

**353.614A Fiber Chemistry and Finishes**

Students are offered an in-depth coverage of important aspects of human behavior related to clothing. Specific topics include impression formation, conformity, fashion, role, logical theories to analyze human behavior. Specific topics are studied in this course. We will apply social and psychological theories to analyze human behavior. Specific topics are studied in this course. We will apply social and psychological theories to analyze human behavior.

**353.618 Textile Conservation**

The study on textile conservation includes principles and procedures used to conserve, exhibit and store historic textiles, costumes, and accessory items. A study on the chemical properties and dyes that cause the aging of fibers is offered in this course.

**353.621 Advanced Fashion Design**

This course concerns a range of conceptual approaches that are necessary for studying the aesthetics of dress. There will be an emphasis on the functional beauty and decorative beauty of dress in the industrialized society. Studio work of creative designs and its production accompany the lectures of this course.

**M1461.001800**

- **Fiber Chemistry and Finishes**
- **Advanced Fashion Design**
- **Clothing and Human Behavior**
- **Textile Conservation**
- **Textile Design**
- **New Synthetic Fibers for Clothing**
- **Special Topics in Fashion Marketing**
- **New Textiles**
- **Topics in Fabrication of Special Apparel Textiles**

This course is an advanced course on fashion marketing. Fashion fundamentals are applied to current social environments, and we will deduct according marketing strategies. Students are required to identify current problems and issues of the Korean fashion industry, and make marketing suggestions using this theoretical information.
The objective of this course is to acquire an understanding of the fabrication of clothing materials, chemical and physical application of finishing, and other new techniques to improve the comfort and appearance fabrics, knots, and non-wovens.

**Special Topics in Clothing Physiology**

This course examines the physicochemical principles of dyeing, and diffusion of dyes into fibers. Topics include the classification of dyes, kinetics of dyeing. We will study current issues related to clothing physiology, which includes comfort, microclimate inside clothing, and body temperature regulation.

**Functional Apparel Design**

This course focuses on the functional aspects of clothing design, considering the psychological and physiological influences on the apparel industry. Students will learn about the role of comfort, microclimate, and temperature regulation in clothing design.

**Principles of Dyeing**

This course concentrates on the physicochemical principles of dyeing. Topics include the classification of dyes, kinetics of dying, and diffusion of dyes into fibers.

**Topics in Fashion Industry**

This course offers studies on advanced research methods in clothing and textiles. Students will become skilled in using statistical analysis in researching clothing and textiles. Issues such as segmentation, brand equity, pricing, and consumer involvement are possible areas of discussion.
be carried out from two perspectives: 1. characteristics of the human shape and mechanism 2. psychological. Through these fundamental theories, students will then be able to produce clothing that has reflected upon the wearer’s effectiveness, sensitivity and sense of security.

353.738A 복식조형론 3-3-0
Theories of Formative Features of Fashion Design

This course examines how costumes of China and India, the birthplace of ancient civilization, have evolved in relation to its natural and social environments. It will also cover how the cultural exchanges among Korea, China, and Japan have influenced their costumes cross-sectionally and longitudinally. Students will apply the knowledge of historic costumes to their own costume designs in the Oriental style.

353.732 동양복식사 3-3-0
History of Eastern Clothing

(1) 동양문명의 발상지인 중국과 인도를 중심으로 자연환경, 사회 환경에 따른 복식의 형성과정을 이해한다.
(2) 중국, 일본, 한국을 중심으로 복식의 변천과정을 살펴보고 문화 교류에 따른 지역간 복식문화의 형성, 종교 교류를 이해한다.
(3) 복식사적 자료를 현대적으로 재조명하여 동양 이미지의 이상 디자인 개발에 활용하도록 한다.

This course examines how costumes of China and India, the birthplace of ancient civilization, have evolved in relation to its natural and social environments. It will also cover how the cultural exchanges among Korea, China, and Japan have influenced their costumes cross-sectionally and longitudinally. Students will apply the knowledge of historic costumes to their own costume designs in the Oriental style.

353.734A 온열생리학 3-2-2
Thermal Physiology and Lab.

인체의 방위체력 중 중요한 기능인 체온조절, 환경적응 메커니즘, 수면, 운동, 작업시의 체온조절 메커니즘 등을 학습하여 의복, 온돌, 실내환경, 목욕, 기후 등의 생활 속의 온도와 관련된 생활환경을 평가할 수 있는 능력을 키운다.

The course develops one’s ability to evaluate the thermal environment such as outdoor and indoor climate, working environment, sleeping environment, Ondol, bathing environment, and exercise environment. We will study body temperature regulation mechanism at different conditions.

353.736 복식과 색채론 3-3-0
Theory of Fashion and Color

색채의 이론은 모든 디자인 분야의 기초과목으로 본 과목은 복식디자인의 조형적인 문제를 해결하는 능력을 개발하고 운동, 안정성 등의 복식인간공학적 요소와 현대적 디자인에 응용능력을 개발한다.

Color theories are fundamental in designing. This course on color theories deal with topics such as the coloring system, coloring intuition, coloring effect, coloring contrast, and coloring psychology. Other elemental principles such as formation, texture, unity, proportion, balance, and emphasis are also possible study topics. Students will endeavor to apply the aforementioned basic elements in their design work.

353.737 의복인간공학 3-3-0
Clothing Ergonomics

인간과 복식, 환경과의 관계를 인간공학적 측면에서 다각적으로 파악, 분석하기 위한 과정이다. 인체특성을 형태, 운동 기구적인 측면과 관능성능력의 측면에서 연구하고, 인체의 특성을 만족시키기 위한 평가 측면에서 의복 특성에 대하여 학습한다. 이를 통하여 인체 특성을 고려한 의복의 착용능, 착용감, 안정성 등의 종합적 평가를 만족시키는 의복조형의 종합적 설계능력을 기른다.

To train students so that they will be able to understand and analyse the relationship between human, clothing and the environment from an ergonomic perspective. Research will
M1461.00400 패션미디어 및 비평 3-3-0

Fashion Media and Criticism

오늘날 정보화의 가속화로 미디어의 중요성이 점차 증대되고 있는 추세이다. 이에 패션미디어의 변천 과정을 살펴보고, 신문, 패션전문지, TV, 디지털미디어 등 현대사회에서 주로 활용되는 패션미디어들의 특성들을 파악함으로써 패션미디어의 효과적인 활용 전략을 수립할 수 있다. 또한 각종 미디어에 담겨있는 패션 기사들을 분석하되 패션에 관한 비평적 시각을 배양한다.

Today the importance of media has been gradually increasing with the acceleration of ICT. This course examines the vicissitudes of fashion media, analyzes the characteristics of fashion media which is mainly utilized in modern society - such as newspapers, fashion magazines, TV, digital media, etc., and then tries to establish an effective utilization strategy of the fashion media. In addition, by analyzing fashion articles appearing in various media, students will cultivate the critical perspective on fashion.

M1461.00500 패션상품디자인특론 3-2-2

Practice for Designing Fashion Goods

패션업체의 세분화된 요구에 부응하기 위하여 상업성을 지닌 제품을 직접 기획 및 디자인하고자며, 패션상품의 기획 및 디자인 능력을 증진시켜야한다. 개발된 시제품을 상품화하는 것에 중점을 둔다.

Through planning and designing their own fashion products that meet the needs of fashion companies, students will develop their capabilities of planning and designing fashion items. The ultimate goal of this course is to commercialize the developed prototypes.

M1461.001100 패션미학 3-3-0

Fashion Aesthetics

미학의 기본 개념에 대한 이해를 통해 패션에 있어서의 미의 본질을 파악하고, 패션을 예술, 몸, 성, 문화, 시대양식 등과 같은 다양한 주제와 연관하여 상품화함으로써, 미학적 측면에서 패션의 미학 형식뿐만 아니라 내적 의미의 중요성을 인식하도록 한다.

In this class, students are required to grasp the essence of beauty in fashion through an understanding of the basic concepts of aesthetics. They will review fashion in conjunction with such topics as art, body, gender, culture, and contemporary styles, and recognize the importance of inner meaning of fashion as well as the external form of fashion with respect to the aesthetic aspects.
shape, Understanding materials(fabric, lining and interfacing), Cutting and Sewing. Furthermore, the student will be improving clothes completion and problem-solving ability through making Standard Technical Package on the side of technical design.

M1461.001600 Digital Three-Dimensional Anthropometry

Recent whole body scanners enabled the use of 3D human body data in various research fields. 3D human body data plays an important role in the definition of garment sizing system and the pattern design. This lecture aims at providing the students with the basic knowledge required for developing their own body measurement or pattern design system by introducing the principle of 3D scanners, 3D computer graphics, and various 3D data analysis methods.

M1461.001700 Healthcare Textile Materials

Modern 3D whole body scanners facilitated the use of 3D human body data in various research fields. 3D body data plays an important role in the definition of garment sizing system and the pattern design. This lecture aims at providing the students with the basic knowledge required for developing their own body measurement or pattern design system by introducing the principle of 3D scanners, 3D computer graphics, and various 3D data analysis methods.
This advanced class presents regression diagnostics and the econometrics analysis of equations with categorical or truncated dependent variables, simultaneous systems, time-series data, and panel data sets.

Topics in Consumer Behavior

Students are encouraged to focus on SAS and SASS under supervision.

Topics in Consumer Education

Students are encouraged to practice the application of selected statistical methodologies using SAS and SASS under supervision.

Advanced Seminar in Consumer Science I

Students are encouraged to practice the application of selected statistical methodologies using SAS and SASS under supervision.

Advanced Seminar in Consumer Science II

Students are encouraged to practice the application of selected statistical methodologies using SAS and SASS under supervision.

In this course, multi-disciplinary theories regarding the consumers, industries and profit maximizing firms are applied to analyze and understand the consumers and market. This course will emphasize on advanced topics relevant to analysis of the current market mechanism.

Topics in Analysis of Market Environment

358.546 소비자시장환경분석특론 3-3-0

358.550A 소비자교육특강 3-3-0

358.552 고급소비자학세미나 I 3-3-0

358.553 고급소비자학세미나 II 1-1-0
 profesional advanced topics relevant to analysis of the current consumers and market mechanism and share the research ideas on consumers and the market.

358.631 소비문화특론 3-3-0

_topics in Culture and Consumption_

문화적인 차원에서 상품소비의 의미를 분석함으로써 상품소비와 대중문화의 상호작용을 검토한다.

This is a course examining interaction consumption and culture. Students are encouraged to analyze consumption behaviors as an cultural aspect.

358.635 소비자정보특론 3-3-0

_topics in Consumer Information_

불완전한 정보로 인한 시장문제와 소비자 문제를 바탕으로 소비자들의 정보탐색활동을 평가하고, 매체로부터의 정보를 분석함으로써 바람직한 정보정책의 틀을 제시한다.

The topics in this advanced course include economic analysis of consumer information in the marketplace, the effectiveness of public and private sector policies directed toward consumer information deficiencies, and product safety. Students will carry out the analysis and evaluation of consumer performance in the marketplace under conditions of incomplete information using empirical micro-data.

358.638 소비자보호법특론 3-3-0

_topics in Consumer Laws_

현대산업사회에서 구조적으로 일등한 지위에 있는 소비자를 보호하기 위한 소비자법을 연구하여 소비자피해구제와 소비자주권 회복에 대한 구체적인 방안을 모색한다.

This course provides an analysis of the roles played by both the courts and the governmental regulatory legislation in altering consumer markets, consumer behavior, and consumer welfare. Topics include analysis of contract law, products liability, and accidental law, as well as the activities of government regulatory agencies.

358.640B 소비트렌드분석특강 3-3-0

_topics in Consumer Trends Analysis_

트렌드는 경제변동 중 장기적으로 걸쳐 나타나는 상상, 정제, 후퇴 등의 움직임으로 변화하는 시장환경과 더불어 여러 분야에서 빠르게 변화하고 있다. 이에 본 과목을 통해 시장환경과 다양한 소비문화에 대한 지식을 바탕으로 소비트렌드의 특징과 변화양상을 분석하며 이를 통해 새로운 시장기회를 개발하는 능력을 얻는다.

Trend is a movement that appears in a long and short term of economic fluctuations, trend is changing very rapidly in various areas with a changing market environment. This course identifies new directions both consumer attitudes and behavior and in consumer culture, develops techniques for gathering and analyzing the raw data that procedure our insights into consumer market, and identifies strategies for getting “on-trend” and extrapolating a trend’s future direction.

358.649 소비자교육프로그램개발연구 3-3-0

_topics in Consumer Education Program Developments_

개별 소비자 및 가계가 자원을 획득, 배분, 소비, 사용 및 처분하는 과정에서 직면하는 제 문제를 사례를 통하여 진단하고 분석함으로써, 소비자문제를 예방하고 치유하기 위한 소비자상담이론과 상담기법을 연구한다.

This course is a practicum in the role of consumer advisors. Individual clients provide opportunities to apply counseling knowledge and techniques. It requires work with clients from different socioeconomic levels.

358.650 소비자유통특강 3-3-0

_topics in Consumer Retailing_

소비자와 만나게 되는 물리적 장소인 유통은 급변하고 있는 국내외 유통환경에서 제조업자와 유통업자 모두에게 시장기회와 위협을 동시에 제공하며 결국 소비자의 소비생활에도 영향을 미치고 있다. 유통학에서 논하는 마케팅 믹스(상품, 가격, 유통, 프로모션)의 중요한 요소로서 소비자와 직접 접촉하는 점에서 소비자학적 관점으로 논의할 필요가 있다. 이에 본 과목은 유통에 대한 체계적인 지식을 쌓을 수 있는 기회를 제공하며 주요한 유통문제 및 유통과정에서 발생할 수 있는 소비자문제에 대해 연구한다.

Distribution is a place to meet a consumer and provides both the market/demand side and the channel/supply side with market chance and threat. Therefore eventually distribution effects consumer’s consumption life. Because distribution is one of the most important factors of marketing mix, we need to understand it from consumers’ perspectives. This course provide a chance to get systematic knowledge of distribution and discuss major distribution problems or consumer problems.

358.730 고급소비자학연구법 2 3-2-2

_Advanced Research Methods in Consumer Science 2_

소비자, 관리와 관련된 체 문제 및 현상을 올바르게 기술, 설명, 예측하기 위하여 통계학의 지식 및 전산을 통한 자료처리 기
This advanced class offers a variety of qualitative research methods as the means for better understanding a complex social phenomenon. It deals with how data are gathered through participant observation & in-depth interviewing, and then analyzed qualitatively.

**358.731 한국가계분석론 3-3-0**
Economic Analysis of Korean Household Behavior

The course delves into various theoretical approaches on the consumption society such as Marxist, Semiology, Historical, Cultural, Economical, Feminism, and special economic problems of these groups, and the implications for policy development.

**358.733A 소비사회론 3-3-0**
Topics in Consumption Society Theories

This course is a seminar in family economics applied to the economic well-being of Korean households and resulting policy issues, where the economic status of the Korean family is a factor. This course will focus on developing research proposals and analyzing urban households.

**358.738 특수유형소비자문제연구 3-3-0**
Problems in Special Groups of Consumers

This course is an overview of issues and concerns related to consumers with special needs, such as children, women, and elderly consumers. Some topics to be dealt with are the characteristics, expenditure patterns, marketplace behavior, and special economic problems of these groups, and the implications for policy development.

**358.739 비교소비자정책특론 3-3-0**
Topics in Comparative Analysis on Consumer Policy

This course is a systematic comparison of consumer policies and programs relating to consumers among various countries. Policies promoting consumer information and protection, as well as service-provision programs, are explored in terms of cost-benefit relationships.

**358.740A 소비자주의특강 3-3-0**
Topics in Consumerism

This advanced class offers a variety of qualitative research methods as the means for better understanding a complex social phenomenon. It deals with how data are gathered through participant observation & in-depth interviewing, and then analyzed qualitatively.

**358.747A 가계복지정책특강 3-3-0**
Topics in Household Welfare Policy

This course is a seminar in family economics applied to the economic well-being of Korean households and resulting policy issues, where the economic status of the Korean family is a factor. This course will focus on developing research proposals and analyzing urban households.

**358.748B 소비자재무설계상담특강 3-3-0**
Topics in Personal Financial Planning and Consulting

This course is a seminar in family economics applied to the economic well-being of Korean households and resulting policy issues, where the economic status of the Korean family is a factor. This course will focus on developing research proposals and analyzing urban households.

**Topics in Comparative Analysis on Consumer Policy**

This course is a systematic comparison of consumer policies and programs relating to consumers among various countries. Policies promoting consumer information and protection, as well as service-provision programs, are explored in terms of cost-benefit relationships.
학습하고 개인과 가계 단위의 소비자 재무설계 및 상담 능력을 함양한다.

According to various household income level and life-cycle stages to manage consumer’s financial resources very effectively, this course focuses on efficient management of household financial resources over the life-cycle and different household income. Develops the ability of professional in consumer financial planning and counselling by studying economic principle of financial management economic risks and the protection of assets, optimization and maximization of income and retirement planning.

358.752 소비자신용특론 3-3-0

Topics in Consumer Credit

소비자의 신용사용의 이론적인 틀을 이해하고 소비자신용이 소비행동에 미치는 영향을 살펴보며 적절한 소비자신용관리방법을 학습한다.

This course provides an intensive analysis of economic, social, and legal aspects of consumer credit, concentrating on issues of public policy. It also covers the management of consumer credit institutions, and issues such as collection procedures and cost & credit analysis.

358.754A 금융소비자특강 3-3-0

Topics in Consumers of Financial Market

금융소비자특강은 금융시장을 이해하고 금융시장에서 발생하는 소비자문제를 예방하고 해결하기 위해 필요한 이론과 전략을 습득하는 과목이다. 특히 금융소비자문제를 예방하기 위해 필요한 금융소비자교육프로그램을 개발하고 방안이 되는 금융소비자문제를 해결하기 위한 대안을 연구한다.

This course focuses on the financial market and the consumer issues in financial market. To prevent and solve the consumer problems in financial market, theories and strategies will be reviewed. Especially, this course is designed to practice the development of education program and alternatives to solve the consumer issues in financial market.

358.755 은퇴설계특강 3-3-0

Topics in Retirement Planning

의학의 발달 및 식생활의 질적 향상으로 평균수명이 연장되면서 은퇴 전후의 노년기 문제에 대한 특별한 설계가 필요하게 되었다. 이에 개인의 특성 및 은퇴 후에 따른 재정적 특성에 적합한 은퇴 계획 모델과 프로그램을 이해하고 새로운 모델 및 프로그램을 개발·연구한다. 또한 은퇴자들의 다양한 필요를 충족시키는 다양한 은퇴설계 모델과 프로그램을 개발하고 연구한다.

According to medical science and quality of dietary life has been improving, the average life span can be longer than before and we need a special plan for old age before and after retirement. This course focuses on retirement planning, models and programs can be applied to personal and financial aspects following retirement and develops new models and programs. Also discusses practical techniques and theories of recent elder problems.

358.756A 소비자학이론특강 3-3-0

Topics in Consumer Science Theory

사회의 기능이 분화되고 복잡해지면서 소비자가 당면하는 문제도 다양해졌다. 이에 본 소비자학이론의 현황 및 변화방향을 파악함으로써 소비자학을 이해함으로써, 소비자의 복지 향상을 위해 소비자학 이론의 학습을 통해 소비자학의 이론적인 토대를 이해하고 실용적 적용방안을 모색한다.

As various social function are being divided and complicated, problems that consumers confront has gotten complex as well. Therefore, it is needed to identify political solutions to enhance the quality of consumer welfare, by approaching the current and changing consumer science theories over multi-faceted disciplines in order to understand consumer science better. The purpose of this course is to explore the main theories related to consumer science through studying various consumer science theories.

358.803 대학원논문연구 3-3-0

Reading and Research

소비자학을 전공하는 석사 및 박사과정 학생들의 논문지도를 원활하게하기 위한 과목이다.

This is a course designed to improve the graduate students’ masters thesis or doctoral dissertation.

M1467.000100 글로벌소비자특강 3-3-0

Topics in Consumer and Global Market

본 과목에서는 글로벌 시장에서 나타나는 소비행동과 유통·마케팅·정책 환경 등을 학습하고, 이를 토대로 온·오프라인 글로벌 시장에서 우리나라 소비자가 경험하는 소비자 문제를 고찰한다. 또한 글로벌 시장에서 소비자 권익을 신장시키기 위한 방안을 논의한다.

This course provides a understanding of consumer behaviors and consumer issues in various global markets and discusses implications to empower and protect consumers in the global market. Topics such as consumer behaviors, retail environments, marketing strategies, and consumer laws and policies in the global market are discussed to understand new consumer issues in the global market.

M1467.00020 리테일문화 세미나 1-2-0

Seminar in Retail Culture

소매유통은 소비자가 상품 및 서비스를 직접 만나는 접점이 된다는 점에서 소비자선택과 복지에 중요한 영향을 미친다. 본 과목은 소매유통에 관련된 다양한 이해관계자들과 소비자와의 상호관계를 이해하고 체계화되는 소비자문화의 특성과 발전에 대한 논의를 중심으로 한다.

Retail culture is important to consumers in the sense that retail is the setting where consumers actually face products and services and make their choices. Topics such as introduction to retail environment, stakeholders and their interests sought and retail culture that enable harmonious coexistence of various stakeholders will be discussed.
Topics in Consumer Psychology

현대 소비시장에서 상품과 유통경로가 다양해짐에 따라 소비자들의 의사결정과정이 복잡해지고, 그 의사결정이 내려지기까지의 심리적 과정에 대한 학문적·실천적 수요가 커지고 있다. 본 교과에서는 구매, 사용, 처분에 이르는 소비의 전과정에서 소비자에게 어떠한 심리적 과정과 기제가 작용하는지에 대한 이론을 학습한다.

This course provides a methodological tools to understand consumers’ psychological process and decision making mechanism by studying various theories on consumer psychology.

Topics in Consumer Safety Regulation

소비자들의 ‘안전한 권리’는 당연히 보호되어야 하지만, 이를 위해 채택된 각종 규제장치에 대해서는 여러 가지 반론이 공존하고 있다. 예를 들면 소비자선택권을 제한한다는 반론에서부터 적절한 시장영향평가도 없이 규범적으로 도입되고 있다는 반론까지 다양한 비판이 있다.

To protect the “consumer right to safety” are asserted by consumer advocates but there has been controversy with the claim that much safety regulation infringes on personal freedom of choice and public intervention has been undertaken without adequate analysis of its consequences. In this course, the rationales for public protection from the hazard and risk will be dealt. And by reading many research articles in consumer safety issues in food, consumer products, and services, the general consumer safety rules adapted by various countries will be reviewed with relate to monitoring and warning instruments designed to analyse and prevent risks, and to remedy dangerous situations.

Studies in Elderly Consumers

고령화가 진행되며 고령소비자 비중이 지속적으로 증가하고 있으며, 고령소비자 특성도 다변화되고 있다. 이에 고령소비자의 다양한 소비행태와 소비자문제를 파악하고, 고령소비자가 소비사회에 시 갖는 행위와 변화하는 시장환경에서 고령소비자의 역량 강화를 위한 방안을 논의한다.

The elderly population will continue to grow and the their consumption power and market for them are growing fast. The goal of this course is to understand the consumption behaviors of those population and find implications to contribute to elevate the welfare of the elderly population in the new market environments. The topics in this course include characteristics and consumption behaviors of near elderly and elderly population and emerging markets/industries for those population.
This course is an advanced course examining relevant theories in child development. It will provide an opportunity for developing the ability to deal with practical and theoretical research issues in child development.

359.553A 아동과 전통문화 3-3-0

Child Development and Korean Culture

한국문화의 특수성을 발전해온 유아교육에 대한 독특한 철학, 목적, 내용, 방법, 평가 전반에 걸친 이론과 실제를 고찰하여 타국의 관련이론 및 실제와 비교 연구하며 나아가 유아교육의 발전적 기반을 모색한다.

This course provides readings and discussions regarding the philosophies, goals, contents, methods and evaluations of traditional Korean early childhood education. Theories and practices of other nations/cultures are reviewed for comparison.

359.554 특수아동발달과 지도 3-3-0

Development & Guidance of Special Children

수체아동과 장애아동의 발달상 특징과 원인 및 지도에 관한 학문적 지식을 제공하며, 이들의 양육과 지도에 필요한 의학적, 심리학적, 교육학적, 복지적 차원에 관한 지식과 태도, 기능을 학습한다.

This course is an introduction to the biological, cognitive, and emotional aspects in the development of special children. Emphasis will be placed on the development of antecedents of maladaptation, current theories, intervention strategies, and family therapy.

359.555A 고급영유아사회성교육론 3-3-0

Advanced Studies of Children's Social Development & Education

영유아의 사회성 발달에 관한 이론들과 이론적성과의 경제학적 점을 검토하고 영유아기의 사회적 관계형성과 적응행동 학습에 대해 살펴본다. 사회성 발달에서 농동적 존재로서의 아동의 역할을 환경과 개인의 상호작용이라는 관점에서 파악하고, 사회성 발달특성과 관련 요인들을 살펴보아 이를 촉진시키는 방법을 모색한다.

This course is an advanced course examining relevant theoretical approaches and empirical findings regarding the social development of children. Contrasting theories are compared and critically reviewed. Methods of promoting children’s optimal social development in the home and educational institutions are devised.

359.555B 고급영유아인지교육론 3-3-0

Advanced Studies of Children's Cognitive Development & Education

영유아의 발달단계별 인지발달에 대한 이론과 기본지식을 습득하고 이를 바탕으로 하여 실제 가정과 유아교육현장에서 영유아의 인지능력을 향상시키는 방법과 전략을 모색한다.

This is an advanced course examining current theories and recent research on intellectual development from early infancy through middle childhood. Methods of promoting cognitive development of children in the home and educational institutions are discussed.

359.557A 고급영유아언어교육론 3-3-0

Advanced Studies of Children's Language Development & Education

영유아의 언어 학습에 대한 이론적 배경과 언어 학습이 주는 환경요소, 의사소통의 발달과 적응 등의 나아짐을 구성한다. 첫째, 언어학습이론은 생리발달이론을 비롯하여 학습이론, 사회심리학이론 및 심리학 등의 논의로 구성된다. 둘째, 언어발달에 미치는 환경의 영향은, 특히, 가정 및 학교의 영향과 영유아의 상호작용의 영향이 논의된다. 그리고 이러한 논의를 바탕으로 언어 교육의 방법이 제시되고 실제실습과 언어학습이 포함된다.

This course provides an examination of theories in language acquisition including biological-maturation, environmental-learning, social-psychology, and pragmatism. The influence of environmental factors (peers, home, kindergarten and school) and parent-child interaction on language development are discussed.

359.563A 가족관계연구 3-3-0

Studies in Family Relations

가족학을 연구하는 이론적 동향에 대하여 문헌을 중심으로 분석한 다음 가족관계의 특성적 특성을 정상가족과 이상가족으로 나누고, 고찰하고 미래를 전망한다.

This course will present an integrative and comprehensive assessment of contributions in the field of family relations. Other topics include major theories and research, family problems, and critical issues in family studies.

359.564A 현대가족이슈 3-3-0

Issues in Contemporary Families

본 교과는 현대사회에서 나타나는 가족의 다양한 이슈들을 분석하고 논의하는 세미나 방식의 교과이다. 가족을 둘러싼 환경의 변화에서 존재하는 가족관계, 가족행동, 가족제도의 변화를 살펴보고, 이러한 변이가 가족의 삶과 사회에 미치는 영향을, 글로벌 환경에서 한국가족과 외국가족의 경험과 삶의 양식이 어떻게 비교될 수 있는지 살펴보고 논의한다.

This is a seminar course to discuss various contemporary issues in families. Families experience many changes with respect to recent technological trends and globalization. We discuss what impacts these contextual changes could bring and how families adapt to these changes. Included are topics such as trans-national families under globalization, child birth technology, and demographic trends in families.
### 359.656 비교문화가족연구 3-3-0

*Seminar in Families in Cross-Cultural Perspective*

가족학분야에서 시도되고 있는 비교문화적 연구를 소개한다. 문화간 비교연구를 할 수 있는 능력을 배양하기 위해 문화유형별로 가족생활유형, 가족의 구조적 특성, 가족관계 등을 현지조사자료를 중심으로 소개한다.

This course provides a comparative study of kinship, marriage, family organization, the family life cycle, and modes of family functioning across cultures. Topics include the relationship between the economic, political, religious and other institutions, with an emphasis on the adaptation of the family to urbanization and industrialization.

### 359.657 고급가족이론연구 3-3-0

*Advanced Seminar in Family Theories*

가족학 연구의 기초가 되는 이론들의 습득과 적용을 위해 가족에 대한 기존의 이론들을 포괄적으로 검토한다. 그 이론들의 기본적인 개념, 가정, 명제들을 파악하고, 그 이론들에 기초한 연구결과들을 살펴보면서 가족학 연구에서의 이 이론들의 위치와 실제 적용상의 한계나 문제점 등을 비판적으로 검토한다.

This course provides a comprehensive and integrative review of classic and contemporary theories about the family. Other topics include research review and critical issues in applying the theories to family research.

### 359.658 가족스트레스연구 3-3-0

*Seminar in Family Stress*

가족 내외의 규범적, 비규범적 변화와 스트레스에 대응하는 가족의 구조, 행동, 가족기능성, 적용과정 등을 가족 스트레스와 대처론 등을 중심으로 다룬다. 아동가족체계에서 나타나는 역기능적 가족행동이나 위기에 개입할 때 이러한 이론들을 어떻게 적용할지를 고려해 본다.

This course deals with theories related to family development, structure, and behavior in response to social and psychological stress. Normal and dysfunctional family behavior will be studied. The emphasis will be on application to crisis intervention in family systems.

### 359.659 아동놀이이론 및 실제 3-2-2

*Theory & Practice in Child Play*

놀이가 아동의 사고방식과 행동양식을 형성해 주는 기제임을 알한다. 놀이 유형별 발달과정, 놀이와 아동발달의 관계를 학습하고 놀이지도에 관한 지식을 습득하고 실습한다.

This course will examine theories on the function of play in the development of children and implications of recent research for facilitating play experiences for young children. The meaning and validity of play in the lives of young children, the different ways that children play and the value of each, and the effect of environment in enhancing and supporting play are explored.

### 359.653 영유아보육실습 3-1-4

*Practice in Infant Educare*

영유아의 발달에 관한 이론과목에서 학습한 지식을 실제현장에 적용해 보는 실습과목이다. 대상아동의 연령별 발달수준에 따라서 만을 개개로 편성한다. 영아는 1개월 이상, 6개월 미만, 7개월 이상 12개월 미만, 12개월 이상 18개월 미만, 18개월 이상 24개월 미만으로 나누고 유아는 3세부터 5세까지, 6세에서 7세까지를 개개의 만으로 구성해서 각각의 발달수준에 맞추어 보육, 교육하는 프로그램에 따라 보육실습을 행한다. 보육실습은 주로 온종일 영유아의 신체적으로 안전한 활동 및 정서적 안정을 위한 사회적 활동을 중심으로 한 물보기와 언어와 인지발달을 위한 교육내용으로 구성된다.

This course is designed for the practice of developmentally appropriate infant educare programs. Opportunities are given to students to teach and care for infants in various levels of classes (1–6 months, 7–11 months, 12–17 months, 3–5 years, and 6–7 years). There will be practices on providing children with optimal care, physical and social activities, lessons for language, and cognitive development.

### 359.657 유아교육현장실습 3-2-2

*Advanced Teaching Experience in Preschool*

이 과목은 학사과정(어린이집, 영유아보육원 등 포함), 유치원, 유치원에서 보조교사 또는 대리교사로서의 지도경험을 중심으로 한다. 즉, 유아교육활동(과거지도)별 지도방법의 적용, 돌보모니어의 구조와 기술 및 지도, 평가, 유치원의 운영과 경영설계, 학부모교육, 유아상담사례연구, 유아교육시설개설준정에 비추면시설평가 등에 대한 이론과의 개요에 포함된다.

This course will provide students with experience as a teacher’s assistant in a supervised practicum in early childhood settings (daycare, childcare center, preschool, and kindergarten). It includes the planning and implementing of various learning activities, constructing children’s play-materials, managing a center, working with parents, and evaluating equipments.

### 359.664 가족생활교육프로그램구성법 3-2-2

*Program Construction Methods in Family Life Education*

가족생활의 질을 향상시키고 가족위기를 예방하는 차원에서 가족 내 각 유아집단을 위한 가족생활교육 프로그램을 탐색하고 가족학과 인문학 등 다양한 학문을 바탕으로 구체적인 가족문제에 적용시켜 본다.

This course studies methods for planning, developing and implementing family life education programs. It covers various learning activities, constructing children’s play-materials, managing a center, working with parents, and evaluating equipments.
대학원(Graduate School) :: 아동가족학과(Dept. of Child Development and Family Studies)

359.750B 고급아동가족연구법 1 3-2-2

Advanced Research Methods in Child and Family Studies 1

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아동 및 가족과 관련된 제문제와 현상을 올바르게 기술, 설명, 예측하기 위해 통계학의 지식 및 연산을 통한 자료처리 기법 등을 포괄적으로 다룬다. 특히 각자 주제를 선정하여 과학적 연구슬 자료 거쳐 개별연구를 수행하여 소논문을 작성해본다.

The basic concepts and tools of statistics employed in child and family studies are examined. An overview of basic statistical concepts, models, and methods using computer software to calculate statistics for the analysis which is needed in practical research will be performed.

359.752 부모자녀관계특론 3-3-0

Topics in Parent-Child Relations

부모-자녀의 심리적 갈등, 세대간 차이와 조화 등 부모-자녀관계를 가정생활에서 주제별로 학습하고 출생 후부터 노년기까지 부모와 관계를 인간발달적 측면과 가족발달적 측면에서 학습한다.

This course provides an examination of current theoretical and research perspectives in parent-child relations. Issues of child-rearing practices and socialization practices are emphasized.

359.755 아동복지정책론 3-3-0

Child Welfare Policy

아동복지의 역할 또는 철학적 토대를 이해하고, 사회변화에 따른 아동복지와 그에 관한 아동복지의 법물적, 행정적 정책의 내용과 범위를 모색한다. 이러한 학습과정에서 아동의 아동복지와 연계된 가정의 기능을 학습하며 그의 학교이나 사회와 같은 거시환경을 아동의 복지와 관련하여 그 심층을 분석하고 종합한다. 특히 사회발전 정책에 따른 아동복지기구의 설립과 기능의 변화 등을 고찰하고 아동복지와 관련하여 복지행정정책의 효율성 정도를 검토한다.

This course provides an overview of historical/philosophical bases and legal/administrative issues of child welfare. Issues of child environments such as family, school, and society are examined in relation to the welfare of children. Child welfare systems are compared among nations which are different culturally, ideologically and economically.

359.756 고급아동상담이론 3-3-0

Advanced Theory in Child Counseling

상담심리학의 이론을 도입하여 아동의 성장, 발달, 적응 그리고 교육에서의 제반문제들 다루어 본다. 그리고 아동상담의 기본원리와 자료를 기초로 하여 특수아의 문제를 모색해보고, 교육효과와 복지적 효과를 동시에 향상시킬 수 있는 방법을 모색해 본다.

This is a course designed for the study of theories, issues, problems and new approaches in child counseling. Areas such as optimal child development and adaptation, counseling of special children, child education and child welfare are reviewed.
초과발달자료의 발달과 비슷할 많은 발달과정을 수행하는 동시에 모든 면에서 발달과 성숙을 이루는 시기이다. 지적발달에서의 양적·적절 성장을 이해하고 자아정체감과 그 발달과정을 살펴보며, 이들의 정서적·사회적 관계의 특성을 통해 청년기의 발달도 이론적·실제적으로 탐구한다.

This course is an in-depth study and discussion of research readings representing a broad range of areas in adolescent development. The focus will be on the understanding of qualitative and quantitative intellectual development, development process of self-identity, and the relationship between emotions and society in adolescents.

이 과목은 영아기, 유아기, 아동기 및 청소년기 이상발달의 전반적 개요를 살펴보고 각종 발달장애의 원인, 특성, 전단, 치료 및 예방에 관한 최근 연구동향의 과학적 성장 원칙을 이해하는 데 어떤 주제 및 연구문제들이 부각되고 있으며, 이들 연구주제들을 이런 방법을 통하여 탐구하고 있는 다양한 경향을 소개하고 가족학 연구방법론의 넓은 영역에 대한 세미나로 이루어질 것이다.

This course focuses on the prevention and treatment of various problems in family dynamics. The course provides a broad exposure to the contemporary family theories and approaches, and techniques in counseling including diagnosis and assessment based on various theoretical models. It will advance the student’s understanding of the family counseling through analyses and discussions of current counseling cases as well.
359.774 아동환경론 3-3-0
Environment and Child Development

This course reviews the issues related to family, gender, and work. The course also discusses gender socialization process and the role of gender in the context of family development. Gender differences and gender behaviors will be examined with an emphasis on biological, psychological, economic, and scientific changes and child's physical and social issues as effect of recent demographic, social, political, economic changes of contemporary Korea. It aims to examine of such relationship between child's development and environmental changes and differences among generations are emphasized.

359.776 아동가족 대학원 세미나 2 1-0-2
Graduate Seminar in Child Development and Family Studies 2

This course is designed to help students understand the relationship between child's development and environmental changes of contemporary Korea. It aims to examine of such issues as effect of recent demographic, social, political, economic, and scientific changes and child's physical and social development. It also covers various risk factors and protective factors found in various environments of Korean child. Exploration of child development and support system through analysis of Korean social and cultural context out of which they have arisen.

359.777 센터와 노년기 생활세계 3-3-0
Gender and Aging

This course is designed to improve the graduate students' master's thesis or doctoral dissertation. The purpose of the seminar is twofold. One purpose is to provide students the opportunities to take special lectures and presentations given by scholars or experts in the field. The other purpose is to give the opportunities of presentation training. Students are expected to participate in the seminar through a presentation and discussion in English.

359.777 가족, 젠더, 일 3-3-0
Family, Gender, and Work

This course reviews the issues related to family, gender, and work. The course also discusses gender socialization process and the role of gender in the context of family development. Gender differences and gender behaviors will be examined with an emphasis on biological, psychological, economic, and social factors. It also present the perspective of feminism regarding gender discrimination and gender stratification.

359.803 대학원논문연구 3-3-0
Reading and Research

This is a course designed to improve the graduate students’ master’s thesis or doctoral dissertation.
In this course, students will gain knowledge in various theoretical perspectives, concepts, and approaches that are useful to understanding multicultural families and children. We will discuss theoretical and empirical works on families and children in other multicultural societies, such as the United States along with current discourses and research in Korea. For each class, students are expected to critically reflect on assigned readings, prepare presentations, and actively participate in discussion.

This course aims to provide an in-depth understanding of literature for children and adolescents. Students apply the theory of children’s literature to interpret and criticize literary works. In addition, they study the latest researches on children’s literature and make their own research design, and select excellent literary works for each developmental stage to construct educational plans.

This course is a required course for all graduate students in the department of Child Development and Family Studies. Students will learn about writing empirical papers in English, and submission and review processes of international scholarly journals. Students will also receive information about library DB and research ethics.

The purpose of this course is to deeply understand the development process of children’s literacy from infancy to school-age and to find implications for applying them to educational fields. Students will explore not only classical reading and writing development, but also the relationship between child development or education and visual literacy, TV literacy, technical literacy that extend to digital media.
수 의 과 대 학

College of Veterinary Medicine
Methodology of Veterinary Research

The students will be asked to participate in case studies and seminars which are regularly held in the hospitals. The total practice time is also more than 144 hours, and the students should submit at least one case report until finishing this course.

This course is for graduate students in clinical department of veterinary medicine and the object of the course is to provide students with increasing medical knowledge as well as practical ability. The students should participate in clinical practice in Seoul National University Hospital for Animals under supervising from professors in clinics. The students are also asked to participate in case studies and seminars which are regularly held in the hospitals. The total practice time should be more than 144 hours and the students should submit at least one case report until finishing this course.

Seminar in Veterinary Science

This course provides new developments and current R&D trends in veterinary sciences to students in one-hour lecture of invited speakers.

Grand Round in Veterinary Clinical Cases

This course covers anatomical structure and function of laboratory animals. Species covered include rabbit, rat, guinea pig and gerbil.

Practice in Animal Hospital 1

This course is for graduate students in clinical department of veterinary medicine and the object of the course is to provide students with increasing medical knowledge as well as practical ability. The students should participate in clinical practice in Seoul National University Hospital for Animals under supervising from professors in clinics. The students are also asked to participate in case studies and seminars which are regularly held in the hospitals. The total practice time should be more than 144 hours and the students should submit at least one case report until finishing this course.

Advanced Veterinary Embryology

This course covers the essential parts of research activities in the fields of veterinary medicine such as experimental design, good research practice, writing research papers and proposals, and securing patent and its transfer to the industry.

Advanced Veterinary Histology

This course will cover the essential parts of research activities in the fields of veterinary medicine such as experimental design, good research practice, writing research papers and proposals, and securing patent and its transfer to the industry.

Advanced Veterinary Embryology
in an organism, the target organ or tissue of the developmental stages in which many researchers are very interested embryologically and molecularly, to treat abnormalities and cancer.

551,568 전자현미경전공학 3-3-0
Electron Microscopy
전자현미경을 이용한 초미세구조의 관찰은 최근의 여러 연구분야에서 필수불가결한 방법이다. 이에 본 강좌에서는 전자현미경의 구조와 사용법을 이해하고, 전자현미경 시료를 만드는 과정에 대해 투과전자현미경과 주사전자현미경의 경우를 예로 들어 그 각각에 대해서 상세히 공부한다.

In this course, graduate students will study not only the workings of the electron microscope, but also the major techniques for biological specimen preparation. This course also gives the students a chance to study the theory, techniques, applications and biological implications of the use of the transmission electron microscope and scanning electron microscope, respectively.

551,586 동통조절기전론 3-3-0
Special Topic in Pain Modulation
본 강좌는 동통의 생리학적인 특성 및 진통기전을 이해하는 데 강조하는 목표를 두었다. 이를 위해서 본 강좌에서는 동통의 인지 및 진통의 발현기전에 관련된 신경계의 일반적인 특성에 관해 강의하고자 한다.

The purpose of this lecture is to understand the physiological properties of pain and the mechanism related to analgesia. Therefore, this course will provide basic information about the neural systems underlying pain perception and the production of analgesia.

551,589 약력학특론 3-3-0
Pharmacodynamics
약물의 효능을 분자, 세포, 조직, 개체수준에서 평가하는 이론적 배경과 그 기법에 대하여 강의하여 소개하는 과목이다. 주요 강의내용으로는 약물 수용체이론, 약력학적 분석방법등이 있다. 강의자료: Pharmacologic analysis of drug receptor interaction. (T Kenakin).

This course provides the basic principles of efficacy and affinity in drug action and their measurements at the levels of molecule, cell, tissue and whole body. Main topics include the major receptor theory and analysis of drug action. Textbook: Pharmacologic analysis of drug-receptor interaction.

551,592 수의약동학 3-3-0
Veterinary Pharmacokinetics

This course introduces the major pharmacokinetic models, the clinical application of pharmacokinetic parameters in normal and diseased animals, and their statistical analysis. The emphasis will be on the pharmacokinetic understanding of tissue residues, determination of withdrawal times, and extrapolation of pharmacokinetic parameters for different animal species. Leture materials include “Comparative pharmacokinetics” (1999, J Riviere) and “Clinical pharmacokinetics” (1995, M Roland & T Tozer).

551,594 침술의 신경생리학적 기전 3-3-0
Neurophysiological Basis of Acupuncture
현대의학계 및 신경과학 전반에 가해 침술이 가져지는 다양한 임상 효과가 제기되고 있으며, 침술이 나타내는 치료효과에 대한 기전은 과학적으로 해석하려는 노력이 활발히 진행되고 있다. 이에 수의과학자를 공부하는 대학원생로서 침술의 기전에 대한 올바른 이해와 과학적인 접근이 필요할 때가 된 것이다. 이에 본 신경과학 과정에서는 침술이 가지는 다양한 임상효과 중에서 진통, 면역증진 및 내분비계계에 미치는 효과에 기인한 신경과학적인 접근과 방법론을 이용하여 해석하고자 한다. 나아가 침술의 기전을 과학적으로 해석할 수 있는 실험적 기초를 마련하려고 하여 본 논문을 중심으로 침술이 가지는 다양한 임상효과들에 대한 기전을 연구하는 방법에 대해 토론하고, 실험의 설계에 필요한 기본 지식을 강의할 계획이다.

Recently, there has been a focus on the various therapeutic effects of acupuncture in the fields of medicine and neuroscience. For this reason, new therapeutic trials have been developed in veterinary medicine, using acupuncture. In addition, many research groups have performed elaborate experiments to elucidate precise mechanisms that are related to acupuncture effects. Therefore, this course will provide the basic neurophysiological knowledge and information for understanding acupuncture. The various effects of acupuncture, including antinociception, immunological improvement, and endocrinological effect will be discussed in the class.

551,598 아생동물보전유전학 3-3-0
Wildlife Conservation Genetics
인간에 의한 서식지 파괴, 환경오염, 길림 등으로 인하여 많은 아생동물 종들이 사라져 가고 있어 생물다양성을 보전하는 일은 21세기를 맞는 인류에게 있어 초보의 관심사가 되고 있다. 보건유전학적 접근은 보건생물학에 있어 중요한 도구의 하나로 부각되고 있으며, 본 과목은 이에 따라 다음과 같은 주제들 강의, 선파, 세미나 등의 형식으로 다루고자 한다: 분자유전학적 방법에 의한 유전자 흐름의 분석, 유전자 흐름과 상호작용 연구, 근교와 근교간의 유전적 다양성과 적응도, 자연적 선택의 영향, 비침습적 방법에 의한 유전자 흐름, génétique et génétique, 근교간의 유전적 특성, 조건적 유전자 효과, 근도면계의 분포와 유전적 다양성, 아생동물의 유전적 특성 등.

Conserving global bio-diversity is one of the most important issues facing humankind in the new millennium. The genetic approach is emerging as an important tool in conservation biology. This course, in lectures, discussions, and seminars, deals with the following topics on conservation: molecular phylogenetics and conservation genetics; genetic diversity and fitness; measuring genetic diversity by molecular methods; molecular genetic analysis using non-invasive techniques; inbreeding depression; population substructure and gene flow; kinship and paternity assessment; captive breeding and reintroduction, etc.
551.619 Topics in Veterinary Genome Research

This course will cover the definition of the genome, comparative genomics, and research tools for genome analysis related with the animal disease in the field of veterinary medicine. Topics include the following: history, future, and issues in genomes; whole genomes and comparative genomics; genome map, organization and chromosome dynamics (cytogenetics); genome project in animal disease; genetic analysis technologies (animal disease-associated genes), gene therapy; genetic testing and veterinary cancer genetics; and the application of genome information. This course will cover the anatomical organization of the central nervous system and function.

551.818 Topics in Veterinary Biotechnology

This course is designed for graduate students to deal with a wide range of contemporary topics in veterinary anatomical
research. Topics will include the latest research findings in
gross and microscopical anatomy and neurobiology. Each stu-
dent will present a topic of choice, followed by discussion.

551.824 마우스 유전체학 및 발병학 3-3-0

Genomics and Embryology of Mouse

Maus is one of the most popular and the strongest tools
for understanding of human genome functions. Expecially
mouse embryology and genetics could contribute to analyze
the phenotype of genetically engineered mice (GEM) to sequestration or repulsion.

Mouse is one of the most popular and the strongest tools
for understanding of human genome functions. Expecially
mouse embryology and genetics could contribute to analyze
the phenotype of genetically engineered mice (GEM) or repulsion.

This course will provide an introduction to the biology of
neurological dysfunction and gain proficiency in interpreting
research contents of other researchers by presenting and dis-
cussing research and review papers on neurological diseases.
This course will cover pathogenesis, pathophysiology, mech-
nism, and clinical features of major neurological diseases,
including neurodevelopmental diseases, cognitive disorders,
and neurodegenerative diseases. Students are expected to build an
understanding of the cause and pathogenesis of neurological
dysfunction and establish basic concepts for developing ther-
apic strategies.

551.825 수의생화학및분자생물학특강 3-3-0

Topics in Veterinary Biochemistry and
Molecular Biology

This course provides the basic concepts and practical ex-
pertise in major research topics and techniques in the vet-
erinary pharmacology via lectures and laboratory activity.

551.853 야생동물의 비교해부학 3-3-0

Comparative Anatomy of Wild Animals

This course is designed to provide an introduction to the
anatomical differences between the herbivore and the carnivore will be especially emphasized.

The comparative anatomy of the wild animals will be lec-
tured in this course. The anatomical differences between the
the herbivore and the carnivore will be especially emphasized.

The knowledge which can be obtained in this class will be
useful to understand the evolution and adaptation of the
mammals. The end of the class, the field trip to the zoologi-
cal park or the museum will be planned to integrate your
knowledge.

551.859 동물세포생리학 3-3-0

Animal Cell Physiology

This course is designed to provide an introduction to the
anatomical differences between the herbivore and the carnivore will be especially emphasized.

The knowledge which can be obtained in this class will be
useful to understand the evolution and adaptation of the
mammals. The end of the class, the field trip to the zoologi-
cal park or the museum will be planned to integrate your
knowledge.

551.826 수의신경과학특론 3-3-0

Special Topics in Veterinary Neuroscience

This course is designed to provide an introduction to the
anatomical differences between the herbivore and the carnivore will be especially emphasized.

The knowledge which can be obtained in this class will be
useful to understand the evolution and adaptation of the
mammals. The end of the class, the field trip to the zoologi-
cal park or the museum will be planned to integrate your
knowledge.
Living organism reproduce themselves by transmitting genetic information to their progeny. The individual cell is the minimal self-reproducing unit, and has specific functions. In here, we study about the structure of cell, internal organization of cell, and cells in their social context. In structure of cell, biological membrane characteristics and its roles will be discussed. And the mechanisms for membrane transport and intracellular protein sorting and trafficking with feature of intracellular protein and cytoskeleton will be suggested in internal organization of cell. In last section, we study about extracellular environment.

Animal Cell Signaling

This course conveniently divides in two parts. The first half provides the nuts and bolts of what might be termed ‘classical’ signal transduction. It concentrates mainly on hormones, their receptors, and the generation and actions of second messengers, particularly cyclic nucleotides and calcium. It was the advances in this area, particularly the discovery of the G-proteins, that originally gave rise to the expression ‘signal transduction’, although the term ‘transduction’ was stolen from elsewhere. In the second half of the course, attention is concentrated on transduction processes set in action by growth factors and adhesion molecules, particularly the GTPases that activate phospholipase C, a key enzyme in the transduction of extracellular signals into second messengers.

Topics in Molecular Cellular Regulation

To understand the molecular regulation of cell fate. Also to study the cellular and systemic functions of the genes by gene expression and knock-out. To study the cellular reprogramming process and its regulation.
홍콩신학 대학원(Graduate School) 수의과학(Dept. of Veterinary Medicine)

551.646 화학물질의 안전성평가법 3-3-0
Safety Evaluation of Chemical Products

 인간은 많은 화학물질과 불가피하게 접촉하게 되며, 그 해로 인한 질병 발생 양상을 연구함으로써, 안전성을 평가하는 과정은 매우 중요하다. 본 과목은 화학물질의 안전성 평가 방법론, 그에 따른 실험동물의 안전성 평가, 그리고 실험동물의 생물학적 특성을 이용한 능력을 갖춘 연구를 위한 기반을 마련하고자 한다.

551.650 독성병리학 3-3-0
Toxicological Pathology

신약 개발 과정에서, 신약의 안전성 평가는 매우 중요하다. 본 과목은 안전성 평가 방법론, 그에 따른 실험동물의 안전성 평가, 그리고 실험동물의 생물학적 특성을 이용한 능력을 갖춘 연구를 위한 기반을 마련하고자 한다.

551.655 분자역학개론 3-3-0
General Molecular Epidemiology

본 과목은 질병 발생 양상을 유전자분석법에 의한 역학적 관점에서 분석하고자 한다. 본 과목의 핵심 주제는 질병 발생 양상의 조사 분석 방법론, 그리고 집단의 역학적 특성에 따른 면역학적 관련성을 분석하고자 한다.

551.509 현대면역학비평 3-3-0
The Critique on Modern Immunology

현대 면역학은 특정 유전자나 생체 반응을 분석하여, 병원의 원인을 검정하고, 그에 따른 대처방안을 제시하는 과학이다. 본 과목은 현대 면역학의 한계에 대한 이해와 이를 극복하기 위한 방법론을 중심으로, 면역학 과학의 기본 개념을 강화하고자 한다.

이 과목에서는 수의공중보건학과 관련하여 관심 분야에 관한 논문을 읽고, 세미나를 통해 여의도의 의전교육을 함으로써 수의공중보건학과 분야별로 줄게 심도 있게 다룬다.

In this course, all the participants will read interesting papers related to veterinary public health and study each field of veterinary public health in detail, communicating with each other through seminars.

551.509 현대면역학비평 3-3-0
The Critique on Modern Immunology

일찍이 현대면역학은 환원론적 분석방법에 의거하여 특정 유전자나 생체 반응을 분석하여, 병원의 원인을 검정하고, 그에 따른 대처방안을 제시하는 과학이다. 본 과목은 현대 면역학의 한계에 대한 이해와 이를 극복하기 위한 방법론을 중심으로, 면역학 과학의 기본 개념을 강화하고자 한다.

이 과목에서는 수의공중보건학과 관련하여 관심 분야에 관한 논문을 읽고, 세미나를 통해 여의도의 의전교육을 함으로써 수의공중보건학과 분야별로 줄게 심도 있게 다룬다.

In this course, all the participants will read interesting papers related to veterinary public health and study each field of veterinary public health in detail, communicating with each other through seminars.
551.668 독성물질의 작용기전 3-3-0
Mechanisms of Toxic Action

본 강의에서는 독성물질이 생체 내 미치는 영향을, 즉 기전을 중심으로 공부하고자 한다. 독성물질의 기전을 보다 명확히 이해하기 위하여 그 기전은 분자생물학적 그러고 세포생물학적인 관점에서 깊이 있게 고찰하고자 한다.

The mechanism of toxic action will be reviewed in the molecular and cellular levels. Such understanding will help elucidate the effective method for the prevention and treatment of toxicities. Based upon the above concerted knowledge, we can predict toxicity and extend our understanding of the toxic mechanism.

551.672 어류병리학특론 3-3-0
Advanced Fish Pathology

이러한 실험기법, 어류 질환모델 동물 등을 강의한다.

This course is a lecture for laboratory methods with fish and aquatic disease-specific animal models.

551.675 독성학특론 3-3-0
Advanced Toxicodynamics

본 강의에서는 최근 혹은 사회적 문제가 되는 독성물질 혹은 주제에 대하여 심도 있는 토론을 진행할 예정이다. 이러한 내용을 바탕으로 보다 독성물질에 대한 보다 효과적이고 심도 있는 대책을 마련할 수 있다.

The mechanism of toxic action will be reviewed in the molecular and cellular levels. Such understanding will help elucidate the effective method for the prevention and treatment of toxicities. Based upon the above concerted knowledge, we can predict toxicity and extend our understanding of the toxic mechanism.

551.678 면역현상에 대한 철학적 접근 3-3-0
Immune Self as the Metaphor

현대면역학에서 중요한 주제인 ‘자기’에 대하여 형성되어 온 면역학적 지식과 기존의 철학적 사고의 접목을 통하여 학제간의 지식창출 구조를 점토함으로서 현대면역학에서의 ‘self’에 대한 규정을 시도한다.

Interdisciplinary study in immunology and philosophy has been focused on the “self” a central theme in contemporary immunology. Major philosophers in Western society, including the postmodernists, are discussed in the class.

551.681A 줄기세포생물학 3-3-0
Stem Cell Biology

현대의학이 풀어야 할 난치병으로 암, 노인성 치매 등에 있어서 줄기세포에 대한 이해가 매우 중요한 영역으로 자리 잡아가고 있다. 또한 인공장기의 생산, 세포폭 복제 등에서 있어서는 안 될 새로운 학문적 영역이다. 더 나아가, 이러한 줄기세포를 이용한 세포치료술이 앞으로 21세기를 이끌어가기 위한 중요한 의학적 학문분야가 될 것으로 생각된다. 따라서 줄기세포의 생체 내 분포, 줄기세포 분리 및 세포배양기술, 줄기세포의 분화 및 세포의 죽음 등을 배우고 응용적으로 이들 줄기세포의 실험적으로도의 이해에 있어서 실험관내 장기의 생장, 암의 기전연구, 세포주의 확립, 세포치료술 등에 관한 학문적 정보를 제공한다.

To understand stem cell is getting an important area in the disease of cancer or aging dementia of which modern medical science should cure. Also, the subject on stem cell is necessary for the production of artificial organ, somatic cell cloning and so on. Furthermore, it is thought that cell therapy using stem cell may be an important area of medical science in 21 century. Therefore, this course study about population of stem cell in the body and isolation, culture technique, differentiation, and death of stem cell.

551.682 환경물질의 분자역학 3-3-0
Molecular Epidemiology in Environmental Health

분자생물학과 역학을 포괄하는 개념으로 소개된 분자역학은 각종 질환, 특히 암의 원인 규명과 예방 연구의 중요한 영역이 되어 왔다. 이 강좌에서는 개체의 시료에서 채취되는 환경물질의 노출, 효과와 감수성에 대한 biomarkers의 개념을 설명하고, 각각의 이점과 한계를 그와 최근의 연구동향을 논의한다.

Molecular epidemiology has been introduced as the concept accommodating both molecular biology and epidemiology. This course covers biomarkers of exposure, effect and susceptibility for environmental compounds, and current research topics in this field of study.

551.686 환경물질의 생물지표 3-3-0
Biomarker of Environmental Toxicants

분자생물학적 기법의 발전은 환경물질에 의한 질환에 관련된 연구에서도 많이 영향을 주고 있다. 이와 관련하여 분자생물지표의 환경보건에서의 중요성이 강조되고 있는 데, 본 강좌에서는 분자생물지표 중 유전독성과 체내대사가 관련된 사항을 설명하고 최근의 연구동향을 논의한다.

Recent development of technology in molecular biology has significantly affected the research on environmentally-associated diseases, and the concept of the ‘biomarker’ has been introduced into toxicology and environmental health. This graduate course covers biomarkers related to genetic toxicology and metabolism, and current research topics.

551.743 동물의 세균성전염병특론 3-3-0
Advanced Bacterial Diseases of Animals

본 과목은 동물에서 국내외적으로 주의를 기울여야 할 널리 발생하는 세균성 전염병의 원인체의 분자생물학적, 면역학적 특성, 역학, 발병기전 등을 바탕으로 한 진단 및 치료에 대한 내용을 다룬다.

This course will cover the diagnosis, prevention, and treatment of important bacterial infectious diseases based on the molecular biological and immunological characteristics of bacterial agents, epidemiology, and pathogenesis.

551.756 조류질병특론 3-3-0
Advanced Avian Diseases

새로운 조류의 질병, 대표적인 질병사례, 최신 조류질병연구방법 등에 관하여 사례별로 발표하고 토의한다.

Topics covered in this course will be newly emerging avian diseases, analysis of diverse aspects of reference models of avian disease outbreaks, practical approach in serological monitoring and diagnosis and vaccination to avian diseases.
동물의 전염성 질병을 진단하기 위한 원인체 및 숙주동물의 분자·면역학적 특성, 병리학적 및 영역학적 특성 및 이를 기반 또는 특성을 이용한 동물의 전염성 질병의 진단방법에 대하여 다룬다.

이 과목은 백신을 만들고 디자인 하는 법을 다루게 된다. 즉 숙주의 면역체계와 병원체와의 관계, 백신개발의 역사, 면역반응, 백신의 일반적인 기술, 개별 종에 따라 백신의 분류, 직접적인 백신의 다자인 등을 다룬다.

이 과목은 돼지의 생산체계를 이해함으로써 돼지질병을 효과적 운영하기 위하여 위 과목들을 변경 신설한다. 그리고 기존의 선충학 흡충학 및 조충학을 근본으로 한다. 또한 필요에 따라서는 위의 각 주요 기생충들에 대한 콕시아와 린급증, 콕시아와 콕시아의 목시야 과목을 통합하여 시대의 흐름에 맞게 그리고 유연성 있게 운영하기 위하여 위 과목들을 변경 신설한다.

동물바이러스생물학 3-3-0

Biology of Animal Viruses

This course will cover advanced knowledges of animal vi- ruses including viral morphology, physiochemical con- struction, viral entry, proliferation, release, chemotheraphy, and prevention and control.

551.829

Immunogenetical Approach to Pathogenic Microorganisms

이 과목은 발병성 미생물(세균, 바이러스, 기생충)의 취입과 숙주의 반응, 발병성 미생물의 항원 발현과 T 세포의 수용체, MHC와 결합감수성, Cytokine와 Th1/Th2, 숙주의 면역체계를 조절하는 Pim-1 kinase, 슈바파테아노 비 등 수약학에서 중요한 동물 질병과 면역기전을 다룬다.

이 과목은 돼지의 생산체계를 이해함으로써 돼지질병을 효과적으로 관리하고자 하는 데 있다. 그러므로 기본적으로 돼지질병의 발생기전, 질병의 특성, 예방과 진단과 관련 문제를 생산체계와 연계하여 다룬다.

This course will provide practical knowledges to control swine diseases effectively on the basis of understanding swine production systems. To recognize the background of swine industry, students will examine the pathogenesis, disease characteristics, and prevention and control in association with the available production systems.

551.841

Biology of Animal Viruses

This course will cover advanced knowledges of animal vi- ruses including viral morphology, physiochemical con- struction, viral entry, proliferation, release, chemotheraphy, and prevention and control.

551.832

Special corse of Veterinary Parasitology

This course is the course for the graduate students integrated the graduated courses of Veterinary Nematodology, Veterinary Trematodology, and Coccidia of domesticated animals and poultry. Lecture contents are all kinds of parasitosis of all kinds of animals. The sub-courses for this special course are composed on sub-courses of Veterinary Trematodology Veterinary Nematodology, Veterinary Trematodology, and Veterinary Cestodology of all kinds of animals. Also, other sub-courses may be opened for this course, such as biology, pathology, immunology, epidemiology, treatment and control of all kinds of parasites. So that, the graduate students will be obtained the current research trends and found the way out of control of parasitosis.
This course is designed to understand the characteristics of food-borne pathogens related to food safety/sanitation and to study their diagnostic principles as well as recent DNA fingerprinting techniques for molecular epidemiological investigations. Foods from animal sources account for the majority of all food production worldwide. As foodborne zoonotic diseases due to global warming increase, hygiene and security for animal-source foods has been recognized as an important issue. This course covers diagnostics of foodborne pathogens related to post-mortem inspection, meat hygiene, milk sanitation, and fish and shellfish hygiene from farm to table. This course is ultimately aimed to prevent the transmission of foodborne pathogens to human by predicting and tracking their sources of contamination as early as possible.

554.504

Zoonosis of Industrial Animals

This course is designed to understand the characteristics of food-borne pathogens related to food safety/sanitation and to study their diagnostic principles as well as recent DNA fingerprinting techniques for molecular epidemiological investigations. Foods from animal sources account for the majority of all food production worldwide. As foodborne zoonotic diseases due to global warming increase, hygiene and security for animal-source foods has been recognized as an important issue. This course covers diagnostics of foodborne pathogens related to post-mortem inspection, meat hygiene, milk sanitation, and fish and shellfish hygiene from farm to table. This course is ultimately aimed to prevent the transmission of foodborne pathogens to human by predicting and tracking their sources of contamination as early as possible.

554.505

Molecular Approach of Emerging Animals

This course is aimed to understand molecular mechanisms related to emerging zoonotic diseases. It covers various kinds of molecular events related to evolution of zoonotic bacteria and viruses and resulting changes in pathobiological properties.

554.506

Foodborne Zoonosis

This course provides general approaches to major foodborne zoonotic diseases, mainly from animal, animal products which may cause human disease. Through the understanding of mechanism of diseases, students can develop effective control strategies at animal, farm, processing, transportation and consumer level in general which applicable concept on ‘Farm to Table’ so be capable with general management of integrated system on food chain.
Bioterrorism

This course is aimed at training the students competent enough to perform necropsy of diseased aquatic animals independently to make a right tentative or final diagnosis and enough to perform necropsy of diseased aquatic animals in real cases. This course will also covers various microbiological tools to diagnose zoonotic diseases in aquatic animals.

Diarhetic Animal

This course covers zoonotic parasites in Korea, life cycle, transmission pathway, recent preventive and therapeutic techniques. This course will also covers various microbiological tools to diagnose zoonotic diseases in aquatic animals.

Prion Diseases as Zoonosis

This course covers prion diseases. Pathology of prion and diagnosis, prevention and therapy of prion diseases.

Zoonotic Parasites

This course covers zoonotic parasites in Korea, life cycle, transmission pathway, recent preventive and therapeutic techniques, antigenic variation and mechanism of drug resistance.

One Health Theory and Practice

One Health is used to refer to a more integrated or holistic approach to human, animal, and ecosystem health. It is one of the most important issues in controlling emerging infectious diseases, zoonoses and ensuring food safety and sustainability.

This program deals with the theoretical concepts and methodology of One Health, systemic approach of One Health and problem solving through group lecture, discussion and team projects. The aim of this program is developing One Health competencies; communication, conflict resolution, system analysis/thinking, values and ethics, creating an enabling environment and advocating change, teamwork, leadership, and management.
(water-borne and food-borne, etc.) to describe control measures to prevent animal disease transmission.

임상수의학전공
(Clinical Vet. Sciences Major)

551.520 소동물피부과학특강 3-3-0

Topics in Small Animal Dermatology

반려동물과 함께 생활하고 있는 가정이 증가함에 따라 반려동물의 피부질환의 증가와 함께 이들 소동물에서 파거에는 발생하지 않았거나 혹은 진단되지 못한 피부질환들의 발생이 증가하고 있는 것이 현실이다. 본 소동물 피부과학 특강에서는 현재 지역 동물병원에서 진료의례 환자들에 대한 2차 진료 방식으로 운영되는 서울대학교 동물병원에 실제 피부질환으로 진료 의례된 증례들에 대한 진단적 접근법 및 치료법 적용에 관한 증례별 토론을 실시하는 토론식 수업을 진행하고 관련 증례보고 및 총설에 관한 고찰을 통해 진단상 또는 치료상 어려움이 예상되는 희귀 및 난치성 피부질환에 대한 이해를 돕는 것을 목적으로 한다.

In now on, occurrence of dermal diseases which were low incidence or not diagnosed with routine diagnostic examinations on companion animals living with humans have been gradually increased. This course has purpose of increasing the knowledge about diagnostic approaches and treatments for uncommon skin diseases on small animals which are not familiar to the general practitioners through discussion of the real cases in veterinary medical teaching hospital, Seoul National University which is absolutely referral hospital and their related previously published reports. This course is only recommended to graduate course students whose major are in clinical departments.

551.712A 수의마취학 및 통증관리 3-3-0

Veterinary Anesthesia and Pain Control

각종 동물의 생리적, 병적 상태에 따른 마취 방법에 관한 최신 정보를 습득한다.

In this course, advanced informations on anesthesia in accordance with the physiological and pathological conditions of animals will be surveyed and discussed.

551.764 수의임상병리학특론 3-3-0

Recent Advances in Veterinary Clinical Pathology

이 과목에서는 혈청단백질, 이상단백혈증, 철분대사, 뇌척수액 및 관련된 질병의 진단에 대해 다룬다. 또한 독성학적 질병의 임상생화학에 대해서도 다룬다.

This course will cover the diagnosis of diseases related to serum proteins, dysproteinemia, iron metabolism, and cerebrospinal fluids. It will also cover the clinical biochemistry of toxicology.

551.773A 수의정형외과학특론 3-3-0

Advanced Veterinary Orthopedics

수의정형외과학은 동물의 근골격계의 질환에 대한 원인과 방인, 그리고 전단 및 치료 방법에 관하여 각종 증례 및 과거에, 근 연구동향을 학습시킨다.

Through lectures and seminars based on textbooks, and cases and journal articles, students will examine the causes, pathophysiology, diagnosis, and treatment of musculoskeletal diseases in animals.

551.774 수의신경외과학 3-3-0

Veterinary Neurosurgery

수의신경외과학은 동물의 뇌, 척수 및 말초신경의 외과질환에 대한 원인과 방인, 진단 및 치료방법에 관하여 강의한다.

Through lectures and seminars based on textbooks, and cases and journal articles, students will examine the causes, pathophysiology, diagnosis, and treatment of diseases of the brain, spinal cord, and peripheral nerves in animals.

551.782 수정란의 보존 및 이식특론 3-3-0

Storage & Transfer of Mammalian Embryos

산업동물의 폐질개량 및 멸종위기의 동물 종족보존의 한 방법으로 수정란 보존을 제시한다. 수정란의 배양 및 동결의 원리와 방법을 이론적으로 알아보고, 수정란의 발육병변체 동결법에 논의한다. 성공적인 수정란 이식을 위한 대리모의 준비 및 수정란과의 발명동기화, 수술적 이식, 대사적 이식 및 병적 법에 의한 가공동물의 수정란 이식법을 소개한다. 또한 수태율 향상을 위한 수태유의 처리 및 관리법을 강의한다.

This course will cover embryo storage as one of the methods that support the preservation of endangered species and the improvement of industrial animals. Students will study theories and methods of embryo cryopreservation and practice to control many factors that affect successful embryo transfer.

551.786 수정란의 미세조작법 3-3-0

Methods in Embryo Micromanipulation

이 과목에서는 현재 사용되고 있는 첨단기술인 미세조작법에 대해서 설명하고, 이를 응용 및 사용범위에 대해서 소개한다. 특히, 제조공학기술과 포유류 수정란에 대한 이해에 중점을 두되, 또한 미세조작법에 응용될 수 있는 다른 관련된 생물학적 기법과 이의 향후 전망, 개선과제, 그리고 생물학적 적용성과 이들이의 관리 문제가 제적적으로 다룬다.

This course will cover micromanipulation techniques for embryos and their application. Focus will be on nuclear transfer and mammalian embryos. Also discussed will be other biological techniques in terms of their application, prospects, and development and genetic or ethical issues related to them.

551.790 산과질환진단특론 3-3-0

Advanced Diagnostic Methods in Reproductive Disease

이 과목에서는 산과 질환을 주로 경험하는 주요 질환에 대한 진단 및 치료 등을 소개한다. 자궁축농증, 불임 등 산과질환에 대한 적절한 진단과 치료를 위한 방법을 강의한다.

This course will cover the diagnosis and treatment of reproductive diseases such as pyometra and infertility, that frequently occur in male and female animals.
Veterinary Radiation Biology

This course will cover the physics and chemistry of radiation absorption, cell survival curves, radiation sensitivity in cells and tissues, radiation damages, oxygen effects, whole body irradiation, radiation, and veterinary radiation therapy.

Topics in Large Animal Internal Medicine

This course is designed to provide you with an appreciation for the impact of arthropods, and the disease agents they transmit, on animal and human health. You should come away from the course with an understanding of the biology of a number of arthropod-pathogen interrelationships in the context of ecological and epidemiological factors that contribute to perpetuation of a given disease.

Studies in Arthropod-borne Diseases

This subject will help the graduate student in veterinary medicine to understand the modern imaging in depth and know about the broad imaging techniques as well as the basic theory. In this subject, advanced imaging in small animals, advanced imaging in large animals, interventional radiology, functional imaging, introduction of recent developed imaging tools, dental radiography and nuclear medicine are dealt.

Topics in Large Animal Surgery

Large animals including cattle and horses show typical surgical diseases because they have very different anatomical and physiological characteristics with small animals like as cats and dogs. Cattle, as a food animal, that produce milk and meat mainly have fore stomach diseases, abomasal disease, etc. Horses, as sports animals for racing, mainly have respiratory, musculoskeletal and digestive diseases, urogenital diseases, udder and hoof diseases. Cattle and horses have mainly gastrointestinal tract, blood and lymphatic system and skeletal muscle. Horses also have skeletal muscle and skin. Therefore, the veterinary medicine of large animals includes veterinary medicine, pathology, internal medicine and surgery.
Large Animal Musculoskeletal Diseases

This course is aimed for understanding musculoskeletal diseases of horses and food animals, including equine and bovine lameness. As well as fundamental information about musculoskeletal pathophysioloogy focusing on bone, joint, and tendon/ligament biology, significant lameness as a clinical problem, identification of the lame limb, and diagnostic techniques including radiography and ultrasonography used to identify the cause, and treatment, management and prevention methods are discussed.

Advanced Veterinary Ophthalmology

Lectures on the examination of the neuro-ophthalmic patient, clinical signs of dysfunction of cranial nerves, autonomic innervation and abnormalities, diseases of vestibular system, diseases of cerebellum, central visual pathways and diseases of the visual system will be discussed.

Advanced Veterinary Dentistry

Lectures on the causes, clinical signs, diagnosis and treatment of dental diseases in animals including canine, feline, and equine. As well as fundamental information about musculoskeletal pathophysioloogy focusing on bone, joint, and tendon/ligament biology, significant lameness as a clinical problem, identification of the lame limb, and diagnostic techniques including radiography and ultrasonography used to identify the cause, and treatment, management and prevention methods are discussed.

Emergency Procedures for Small Animal

Emergency procedures for the small animal is very essential and critical part in small animal practice. This lecture could provide readily accessible information to the veterinarian in a busy emergency practice. At emergency situations, appropriate case assessment and management requires expertise in emergency medicine, anesthesia, surgery and critical care. Therefore, in this lectures, basic information for making diagnosis, giving a prognosis, emergency surgical skills and the currently recommended treatment will be presented.

Principles of Small Animal Thoracic Surgery

Principles of small animal thoracic surgery is aimed at clinical veterinarian to furnish essential information about the cardiovascular clinical features. Surgical diseases of the thorax are considered as a challenge by many surgeons. The clinical features of these diseases have characteristic difficulty, and making the art and science of accurate diagnosis, prior to surgical intervention. The procedure keeps importance on pursuit of the clinical diagnosis prior to per- forming a surgical intervention, since the risk to the patient of inappropriate surgery performing on the chest can be very high. In this lecture, emergency treatment, chest tube application and management, pre/postoperative patient management, surgical treatment about congenital/degenerative heart diseases will be presented.
이 강좌는 학부에서 배운 수의영상의학 지식을 토대로 더욱 진보하고 포괄적인 내용을 다루게 된다. 일반방사선, 투시, 특수 조영법, 초음파, 전산화단층촬영, 자기공명영상, 핵의학 등 진단영상 영역에서 양질의 영상 획득을 위한 영상 방법의 본질적 특성을 이해하고, 장비를 조작하거나 문제점을 해결할 수 있으며, 이를 통해 얻은 영상은 이해에 다양한 질환에 따른 영상의 특성과 숙지하고 실제 진료에서 활용할 수 있는 능력을 갖춘다. 강의 내용은 수의영상의학 영역에서의 기존의 문헌 및 최근 학술지 논문 등으로 준비하며, 강의 외에도 실제 다양한 증례를 통해 영상을 판독하는 기술을 핵심적으로 한다.

이 강좌는 학부에서 배운 수의영상의학 지식을 토대로 더욱 진보하고 포괄적인 내용을 다루게 된다. 일반방사선, 투시, 특수 조영법, 초음파, 전산화단층촬영, 자기공명영상, 핵의학 등 진단영상 영역에서 양질의 영상 획득을 위한 영상 방법의 본질적 특성을 이해하고, 장비를 조작하거나 문제점을 해결할 수 있으며, 이를 통해 얻은 영상은 이해에 다양한 질환에 따른 영상의 특성과 숙지하고 실제 진료에서 활용할 수 있는 능력을 갖춘다. 강의 내용은 수의영상의학 영역에서의 기존의 문헌 및 최근 학술지 논문 등으로 준비하며, 강의 외에도 실제 다양한 증례를 통해 영상을 판독하는 기술을 핵심적으로 한다.

This course covers advanced and comprehensive scope of veterinary medical imaging on the basis of undergraduate knowledge. Modalities including general radiography, fluoroscopy, special contrast studies, ultrasonography, computed tomography, magnetic resonance imaging, and nuclear medicine will be studied to understand the basic characteristics of image acquisition, to control the equipment, to solve the trouble, to utilize the knowledge into imaging clinics. Lecture contents are prepared from textbooks and current papers and a number of clinical cases will be discussed as well.

본 과목은 동물의 병력, 신체검사 결과를 바탕으로하여 적합한 실험실 검사법을 선택하고 그 결과를 판독하여 질병 상태를 판단하고 가장 적절한 후속 치료법 모색 및 예후 관청에 관한 것을 소개하고, 실제 임상 증례에 대한 발표 및 토론을 통하여 수득하 게 함을 목적으로 한다.

The course is designed to introduce the reasoning process to select appropriate clinical laboratory tests based on history and physical exam of the animals, leading to the disease diagnosis, therapy and prognosis. In addition, students will practice the knowledge using real clinical cases through presentation and group discussion.
Topics in Poultry Clinical Science

최신 가금임상수의학은 가금집단의 건강유지, 질병예방 및 치료, 건강한 환경보존을 위한 최신 이론과 현장적응 기술을 소개함으로써 가금산업의 당면문제 해결 방안을 모색하고, 최신 이론과 기술로 해결할 수 없는 난제들을 풀기위한 문제의식과 지식 함양을 목표로 하며, 이 교과목은 강의와 토론, 조별 프로젝트로 구성되며 가금산업의 난제 해결을 위한 지식과 기술 수집, 현장 적용 시 문제점 해결 등을 주제로 합니다. 수강생은 이 교과목을 통해 가금임상분야 문제해결을 위한 지식 및 응용기술 뿐 아니라 현장 문제를 해결하기 위한 능동적인 마인드를 배양하게 됩니다.

Topics in poultry clinical science is aiming at introduction of current knowledge and practical techniques related to poultry health, disease prevention/therapy, poultry farm-surrounding environmental conservation, and recognition of knotty problems in the field. This program deals with successful problem-solving model cases, optimal clinical techniques to solve confronting knotty problems, and problems during field application of clinical techniques, and is composed of group lecture, discussion and team projects.

Dairy Production Medicine

나농업의 전문화로 가구당 사육두수가 증가함에 따라 나قانون에 서 개체진료에 기반한 현대 수의의학의 패러다임이 집단관리기술이 가미된 생산수의학으로 변화하고 있다. 생산수의학은 생산영역의 예방 및 집단 건강관리로 생산성의 향상을 주목적으로 한다. 이에, 잘못의 예방과 이론을 바탕으로, 이 교과목은 강의, 토론 및 조별프로젝트를 통해 가축과 가축의 문제를 발견하고 가축의 문제점 해결할 수 있는 능력을 핵심 기회를 제공한다. 또한 케이스 러뷰를 통해 대동물 임상현장에서 집단관리 기술을 적용할 수 있는 능력 함양이 가능하다.

The paradigm of veterinary medicine in dairy industry is shifting from traditional veterinary medicine based on individual treatment into production medicine adding herd management skill due to the increase of herd size per farm by the specialization of dairy industry. Production medicine is aiming at the increase of productivity with herd health management and prevention of production diseases. Under the understanding on individual treatment of dairy cattle, this program provides the chance to find the problems of dairy herd and to raise the ability to solve the problems of herd through lecture, discussion and team project. Moreover, it is expected to raise the ability to apply the herd management skill to the bovine clinical field through case review.

Clinical Practice with Production Animals

대동물병원에서 실시하는 진료에는 소와 말의 개체진료와 집단 관리의 포괄적 가능성이 포함되고, 감과 돼지의 집단관리 및 질병의 예방이 포함된다. ‘대동물병원 임상실습 1’에서는 축산농가에서 실시하는 진료에 포함된 기본적인 사고(개별진료, 집단진료) 및 질병예방 및 환경개선을 위한 방법론을 학습하게 된다. 실제 임상증례를 통해의 외과 및 수술로 현장에서 활용할 수 있는 임상기술을 습득하도록 한다.

‘Clinical practice in large animal hospital’ include basic practice of individual animal care, herd health management and prevention of disease of horse and cattle, and herd management and disease prevention of poultry and pigs. Graduate students can learn basic diagnostic and treatment skills, how to prevent disease, upgrade of environmental conditions in farms through the practice and discussion of clinical cases which can be adaptable in clinical conditions.

Advanced Wildlife Medicine

야생동물의학 특론은 야생동물의 질환 및 치료에 필요한 최신 지식을 학습하는데 그 목적으로 두고 있다. 야생동물병원에 내원하는 동물을 다루기 위한 보건과 함께 포유류 및 조류의 내과적, 외과적 처치 방법을 학습하고 이후 재활을 통한 자연으로의 복귀에 대한 광범위한 지식을 습득하며 토론한다. 이를 통하여 학생들은 야생동물질환에 대한 보다 발전된 진단 및 치료 방법을 수립할 수 있다.

The purpose of this course is to acquire the advanced knowledge necessary for wildlife disease and treatment, which are desired in the hospital. This course provides restraint knowledge to deal with these wildlife, as well as internal and surgical treatment of mammals and birds. Students will acquire and discuss a wide range of knowledge about the return to nature. Through this, students can learn more advanced diagnosis and treatment methods for wildlife disease.

Advanced Veterinary Emergency Medicine

고급 수의응급의학은 동물에서 발생하는 응급질환에 대한 이해와 최신 진단방법 및 치료방법을 중심적으로 공부하는 교과목이 다. 고급 수의응급의학의 핵심 능력의 향상에 대해, 관련 연구기법 탐구 및 연구 토의를 목표로 하고 있으며. 수업은 개인별 강의 및 토론, 논문 연구 및 병원에 내원한 동물 환자들의 공동 주의와 등이 포함된다. 입상 관리와 관리사입에 대한 동물 질병의 문제점에 대한 응급질환을 이해하고 좀 더 효과적이고 고품질의 치료법을 얻을 수 있을 것이며, 응급 응급 동물질환 관련 연구자들의 경우 응급상황과 관련한 실험과 연구 방향에 대한 최신 정보를 배울 수 있을 것이다.

Advanced Veterinary Emergency Medicine is graduate course that provides in-depth understandings of veterinary emergency including the latest diagnostic methods and treatment. This course aims to acquaint the veterinary trends of advanced treatment methods that can be immediately applied to emergency patients and to explore related research techniques and discuss the research. It is included individual lectures, group discussions, article study, and participation in animal patients in vet school hospital. Clinical based students will be able to understand emergency diseases that occur in animals and learn more effective and advanced treatment methods. For researchers who are interested in animal model with emergency situations, they will be able to take the latest trends in experiments and research directions.
수의인문사회학은 동물의 건강과 질병을 둘러싼 다양한 이슈를 인류학, 사회학, 인문학, 생물학, 수의학 등 다양한 학문 분야의 연구방법론을 융합적, 학계적으로 적용하여 분석하고 학문적인 함의를 이끌어내는 분야이다. 본 강의는 최근 연구사례를 분석하여 해당 분야에서 요구되는 대학원 수준의 연구방법론을 익히고, 최신 이슈 연구에 적용할 수 있는 역량을 키우는 것을 목적으로 한다. 본 강의에서 주로 다루는 이슈는 동물질병의 사회문화적 분석, 인간동물관계, 동물 및 수의 관련 정책, 동물윤리 및 동물복지, 수의윤리 등이다.

The participants of this course analyze current research topics in the veterinary humanities and social science, an interdisciplinary field of veterinary medicine which explores animal and animal diseases related issues from the perspectives of history, culture and sociology. After the active participation, they will be able to build a research plan on their own subject in this field. The course covers socio-cultural analysis of animal diseases, human animal relationship, ethics and policy issues related to animal, animal welfare and veterinary medicine.
약 학 대 학
College of Pharmacy
대학원(Graduate School) → 약학대학(College of Pharmacy)

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학점구조는 "학점수-주당 강의시간-주당 실습시간"을 표시한다. 한 학기는 15주로 구성됨. (The first number means "credits"; the second number means "lecture hours" per week; and the final number means "laboratory hours" per week. 15 weeks make one semester.)

학점은 또한 전공별로 최신 연구내용을 최근 발간된 국내외 학술지 게재논문을 통해 파악하고, 학습하며, 최신 학술논문의 연구 목적, 방법, 결과 등을 고찰한다.

This course is for students in the Ph.D. program. Lectures will be given by faculty members, visiting scholars, and graduate students. They will be followed by discussions covering the latest trends and advances in research on pharmacy.

주요 국제 학술지에 게재된 약학 관련 논문을 중심으로 토론식으로 수업한다.

A continuation of Pharmacy III, this course is for students in the Ph.D. program. Lectures will be given by faculty members, visiting scholars, and graduate students. They will be followed by discussions covering the latest trends and advances in research on pharmacy.

 xếp·박사과정의 대학원생들의 논문연구의 목표 및 내용 등을 검토하고, 일정에 따라 연구결과를 검토 분석하여 연구의 방향 등을 논의한다.

In this course, research projects for MS and Ph.D. dissertations will be evaluated and revised periodically. Plans for ongoing projects will also be discussed.
의약생명과학전공(Pharmaceutical Bioscience Major)

375,510
생화학특강 3-3-0

Topics in Biochemistry

생화학 및 분자생물학 분야의 최근 연구결과들을 주제별로 선
택하여 소개하고 토론한다.

The course will cover progress in modern biochemistry and molecular biology. Selected topics will be discussed.

375,541
의약 신호전달학특강 3-3-0

Topics in Pharmaco-Molecular and Cellular Signal Transduction

세포생물학적 및 생화학 연구방법의 첨단화 및 연구의 활성화
로, 세포 차체에 대한 연구, 특히 세포기능의 조절을 이해하는 과
정에서 중요한 세포신호전달 과정을 분자적 수준에서 이해하고
자 연구하는 분야는 날로 새로운 사실들을 다해가고 있는 것이 현
실임. 최근의 생화학적 교재를 바탕으로, 강의 자료를 최근 보고된
논문들을 활용함으로써, 내용의 최신화를 기하고자 하며, 또한 연
구방법론을 인급 분석함으로써, 연구자이자 피교육자인 본 강좌
생강생들의 약학분야의 안목을 기초적으로 토론함에 일조하고자
자 하며, 동시에 약학적인 지식 및 연구결과의 응용에 도움이 될
수 있도록 하고자 함.

Theses days the cutting-edge technologies responsible for rapid developments in cellular biological and biochemical researches and methodologies result in accumulation of knowledge of cell itself in the levels of molecules and in a format of revealing of cellular mechanisms underlying for regulation of cell functions. In addition to recent textbooks describing the information observed in fast years, this class would be based on review and research papers, for updating the scientific knowledge and methodology of the possible students, probably leading to helping them with concrete understanding of cellular functions and their regulation mechanisms and with connecting or understanding of clinical approaches and information.

375,542
의약분자생물학특강 3-3-0

Topics in Pharmaceutical Molecular Biology

인간 유전자 연구성과에 의해 규명된 다양한 유전자와 단백질들
들의 기능과 상호작용, 그리고 분자수준의 새로운 약제방법과 유전자
치료법 등 신 개념의 의약품 개발기술을 강의하고 토론하며, 최근 연구
동향과 향후 약학분야에서의 활용과 발전방향을 강의하고자 한다.

The achievement of the completed human genome has been widely utilized as the basis for drug development. Accordingly, novel functions and interactions among a variety of genes and/or proteins will be introduced in this course. Furthermore, newly developed concepts for drug development including the molecular prevention of human diseases and pharmacogenomics will be discussed. The course will also include recent movements in and the future of postgenomic research in pharmaceutical science.

375,643A
면역치료특강 3-3-0

Topics in Immunological Products

제내 면역반응에 관련된 cell들과 organ에 대한 이해와 각각의
immune response를 살펴보고 pathogen에 대한 면역기전과 tu-
mor immunology 또, tumor에 대한 면역반응을 구체적으로 연구
하여 면역학의 전반적인 이해를 돕는다.

This introductory course will cover the latest advances in immunology and their application to new immunological product development.

375,737A
의약면역학특강 3-3-0

Topics in Medicinal Immunology

본 과목에서는 지금까지 알려진 여러 종류의 면역치료법, 백신
등을 강의하며 여러 가지 면역학적 실험방법 등을 강의한다.

Recent advances and applications in immunology are discussed.

375,795A
중앙특론 3-3-0

Advanced Oncology

암 세포의 특성, 암세포와의 차이점, 암의 원인, 발암과정의
생화학적 분자생물학적 기전, 종양유전자와 발암억제 유전자들의
기능, 암치료 및 예방전략 및 이를 이용하는 각종 약물의 생화학적
작용기전 등을 강의함. 아울러 암학의 최근 동향을 논문발표
를 통해 숙지시키고 토론하는 능력을 함양시킨다.

This course will introduce the characteristics of cancer cells, causes of cancer, principles of carcinogenesis, cellular and molecular mechanisms underlying viral, chemical, and physical carcinogenesis, functions of oncogenes and tumor suppressor genes, and current strategies applied to cancer prevention and therapy.

375,507
차세대 약학자 양성 세미나 2-2-0

Seminar for cultivation of next generation pharmaceutical scientists

약학대학 대학원생들이 리더십에 대한 이해, 외부 명사 초청 강
연, 연구계획서/과학논문 작성 기법 연구, 발표 능력 배양, 제약산
업 현장견학 등을 통해 약학 분야에서의 전문성뿐만 아니라 미래
의 지도자로서 균형감각을 갖춘 차세대 약학자로 발전하기 위한
전반적인 이해를 도모한다.

리더십의 이해, 차세대 리더로 성장하
기, 제약산업 현장 속으로, 과학기술인의 리더십, 효과적인 연구계
획서/과학논문 작성 기반을 통해 범위, 학술 발표의 이론과 실제, 과학
과 현대사회, 차세대 약학자를 위한 심신건강관리 등에 대한 강의를 진
행한다.

This course will cover methods for cultivation of next generation pharmaceutical scientists. It includes understanding of leadership, basic factors for next generation pharmaceutical scientists, field trip to pharmaceutical industry, leadership for scientists and engineers, how to write successful grant proposals and scientific papers, how to present scientific results efficiently, relationship of science, technology & society, and physical and mental health control.

M1483.000800 사이토카인 생물학 3-3-0

Cytokine Biology

사이토카인은 특정 조직에 의해서 세포에서 만들어지며 세포간의 대화를 메개함으로써 항생성 유전자 및 면역반응에서 핵심적인
역할을 한다. 이 강의는 특히 인간의 질병과 관련된 사이토카인들
을 위주로 그 생성 및 기능을 살펴보는 것을 내용으로 한다. 또한
이들 중 현재 활성화 된 치료의 표적으로 이미 사용되거나 시험 중에
있는 방법에 대한 이해를 높이고 앞으로 생명과학 및 의약학을 전

- 684 -
공하고자 하는 학생들에게 기초 지식과 전망을 제시한다.

Cytokines are produced by a certain type of cells upon environmental and physical stimulation, and mediate cell-to-cell communication to promote homeostasis and/or inflammatory responses. This course intends to give an overview of the various aspects of cytokines including the production and function of each cytokine with specific emphasis on those that are known to play a critical role in human diseases. The course will deal with various therapeutic approaches targeting those cytokine pathway for the treatment of human diseases, providing deeper understanding of pathogenesis of diseases as well as the development of novel therapeutics for students planning to pursue life science and biomedical science.

M1483.000900 암학전산구조생물학 3-3-0

Pharmacoo-Computational Structural Biology

신약 개발을 위한 과정에서 단백질 구조의 필요성은 날로 증대되고 있으며 단백질 데이터 은행 (Protein Data Bank, PDB)에 등재된 단백질 구조 구조는 이미 역사가 되었다. 본 과목에서는 단백질의 구조에 기반하여 신약 개발을 위한 구조 가시화, 구조 분석, 모델링, 리간드 도킹 (ligand docking), 가상 검색 (virtual screening), 분자 동역학 시뮬레이션 (molecular dynamics simulation) 등을 강의한다.

Protein structures become more and more important for new drug development and over 100,000 protein structures have been deposited in the Protein Data Bank (PDB). In this course, protein structure-based pharmaceutical applications of computational biology will be discussed, including structure visualization, structural analysis, modeling, ligand docking, virtual screening, simulation, and molecular dynamics simulation.

M0000.006000 후생 유전 약리학 3-3-0

Pharmacology of epigenetics

암은 우리 사회 구성원의 건강을 위협하는 가장 큰 요인중의 하나이다. 따라서, 암을 선별적으로 타겟할 수 있는 새로운 약물 개발은 중요한 연구 분야이다. DNA methylation, histone modifications, non-coding RNAs를 포함한 후생유전의 잘못된 조절을 체계는 암의 대표적인 특징이며, 이는 항암제의 새로운 타겟 가능성을 제시하고 있다. 천연물 또는 그 유도제들은 암성 의학자들에 게도 유효하게 작용하는 항암제의 주요한 부류이다. 암의 후생학적 특징들을 타겟으로 삼는 항암제는 암성 전반에 걸쳐 개발이 아직 밀 이루어지고 있는 미지의 세계이다. 본 과교육과정에서는 암의 후생학적 특징들을 선별적으로 타겟팅하는 약물들의 항암효과와 그 기전에 대해서 다루고자 한다.

Cancer remains a major public health problem in our society. The development of potent novel anti-cancer drugs selective for tumor cells is therefore still required. Deregulation of the epigenetic machinery including DNA methylation, histone modifications and non-coding RNAs is a hallmark of cancer, which provides potential new therapeutic targets. Natural products or their derivatives represent a major class of anti-cancer drugs in the arsenal available to the clinician. However, regarding epigenetically active anti-cancer agents for clinics, the oceans represent a largely untapped resource. This course focuses on compounds with epigenetic activities and their synthetic derivatives displaying anti-cancer properties.

M1481.000100 세포면역학 특론 3-3-0

Topics in Cellular Immunology

세포면역학은 매우 빠르게 발전하는 학문으로 교과서에서 다루는 지식만으로는 국제적인 학문 주제를 이해하기 어려움. 따라서 최신 세포면역학 특론에서는 가장 최근에 대두된 연구현황 화두 및 연구내용, 그리고 치료제 개발 시도 등을 면세색계임 중심으로 논의함으로써 대학원생들의 최신 연구현황에 대한 이해도를 높이는 것을 목표로 한다.

Since our understanding of cellular immunology is fast-growing, textbook often fails to reflect the most current topics of research and therapeutic approaches. Hence, the purpose of 'Topics in Cellular Immunology' is to cover the most updated researches on basic immunology as well as clinical immunology with specific emphasis on immune cells by using recent high impact publications.

M2175.000900 면역 항암 약리학 3-3-0

Immuno-Pharmacology of Cancer

암세포는 끊임없이 우리 몸의 면역세포의 면역력을 억제하거나 회피하여 점점 더 증식합니다. 이러한 암세포의 특징은 암환자의 치료중에도 전반에 걸쳐 개발될 수 있다는 것입니다.

이 강의는 면역학적 생리학적 역할에 대한 기본 지식에서부터 면역 항암요법의 최신 치료 동향과 이해를 얻을 것을 목표로 하고 있습니다. 따라서 이 과정은 항체, 펩타이드, 단백질, 소분자, 보조제, 사이토카인, 종류 속성 바이러스, 이중 특이 적 분자, 세포치료 및 면역 세포 치료 (ICD)를 포함한 암 치료에 사용할 수 있는 다음과 같은 내용을 설명합니다. 면역 반응을 유도 치료부터 표적 항암 치료 방법에 대해 공부할 것입니다.

특정 주제 :
1. 면역 반응 소개
2. 암 면역 요법의 최근 정립
3. 새로운 약물 개발 고려 사항
4. 자연부터 개발된 면역 요법 : 주요 항암 면역 치료 요법
5. 새로운 세포의 항암 면역 치료
6. 애자나즘 공부 :
   a. 후생 면역학 : 면역 반응에 대한 후생 약물의 효과
   b. 복합 면역 요법
   c. 표적 항암제
   d. 면역 요법 치료의 부작용

Cancer cells are known to interact with the immune system even though they develop neoplastic features that further evolve after therapeutic intervention. Following these seminal discoveries, multiple novel immunotherapeutic entities were developed and recently reached clinical applications. This lecture aims at giving insight into the most recent developments in immunotherapeutic anti-cancer treatments starting from fundamental knowledge about the physiological role of the immune system. Accordingly, this course will describe the following essential therapeutic tools available for the treatment of cancer including antibodies, peptides, proteins, small molecules, adjuvants, cytokines, oncolytic viruses, bi-specific molecules, cellular therapies and immunogenic cell death (ICD) which designates the ability of broad or targeted antitumor agents to elicit immune responses.

Specific topics:
1. Introduction to the immune response
2. Recent history of cancer immunotherapy
3. Overview of novel drug-development considerations
4. Immunotherapies that have been developed so far: key
categories of immunotherapies
5. Opportunities of new generations of immunotherapies
6. Mechanistic insights:
   a. Epigenetics of immunology: effect of epigenetic drugs on the immune response
   b. Combination immunotherapies
   c. selected an

Topics in transcriptomics

This course will cover the action of autonomic and cardiovascular drugs at the cellular level and current concepts of the mechanism of the action.

Drug-Receptor Interaction and Laboratory

This course will cover methods of applying pharmacokinetics for the safe and effective therapeutic management of cardiovascular drugs.

Clinical Pharmacokinetics

This course will cover methods of applying pharmacokinetics for the safe and effective therapeutic management of individual patients.

Biochemical Pharmacology

This course will take a theoretical approach to the study of the cellular and sub-cellular actions of drugs and the relationship between these actions and the pharmacological properties of medicinal agents in the intact organism.
본 과목은 중추신경계의 발달에 대한 전반적인 개념과 메커니즘을 이해하기 위한 목표를 두고 있다. 신경발생은 배아의 아주 초기 상태에서부터 신경계를 구성하고, 분화, 재구성하는 여러 복잡한 과정으로 이루어진다. 신경발생 중의 결함은 autism이나 정신 지체와 같은 신경발생정체에서는 이러한 현상이 찾아질 수 있다. 이러한 복잡한 신경계 발달에 대한 세포 분자적 배경과 이해하기 위해 신경학과 발달 생물학 분야에 대해 강의가 진행될 것이다.

이 과목은 신경발생학의 기초와 발전에 대해 설명하며, 그 과정에서 신경세포의 분화 및 기능 발달, 신경계의 형성 및 재구성, 그리고 신경계의 적응 및 재구성에 대한 이해를 돕는 내용이다. 또한, 이 과목은 신경계 발달에 있어 유전적 및 환경적 요인의 역할을 분석하고, 이러한 요인들이 발달 과정에 미치는 영향을 이해하게 된다.

본 과목은 신경학과 발달 생물학 분야에 대해 강의가 진행될 것이다. 이 과목은 신경학과 발달 생물학 분야에 대해 강의가 진행될 것이다. 이 과목은 신경학과 발달 생물학 분야에 대해 강의가 진행될 것이다.

375.650 신경생전학 및 실험 3-2-2

Neural development and Laboratory

본 과목은 중추신경계의 발달에 대한 전반적인 개념과 메커니즘을 이해하는데 목표를 두고 있다. 신경발생은 배아의 아주 초기 상태에서부터 신경계를 구성하고, 분화, 재구성하는 여러 복잡한 과정으로 이루어진다. 신경발생 중의 결함은 autism이나 정신 지체와 같은 신경발생정체에서는 이러한 현상이 찾아질 수 있다. 이러한 복잡한 신경계 발달에 대한 세포 분자적 배경과 이해하기 위해 신경학과 발달 생물학 분야에 대해 강의가 진행될 것이다.

이 과목은 신경발생학의 기초와 발전에 대해 설명하며, 그 과정에서 신경세포의 분화 및 기능 발달, 신경계의 형성 및 재구성, 그리고 신경계의 적응 및 재구성에 대한 이해를 돕는 내용이다. 또한, 이 과목은 신경계 발달에 있어 유전적 및 환경적 요인의 역할을 분석하고, 이러한 요인들이 발달 과정에 미치는 영향을 이해하게 된다.

375.670 단백질치료제개발특강 3-3-0

Topics in Protein Therapeutics Development

생물의약품은 살아있는 생물을에서 유래한 고분자의 물질을 말하며 일반적으로 치료용 단백질이 대부분을 차지한다. 현재 이러한 치료용 단백질은 많은 사망 성장촉을 흡수하여 많은 화학들이 뛰어들고 있는 신분이다. 본 과목에서는 최근 단백질치료제 개발의 특성과 개발과정, 인류의 생명과 전산, 학문적, 전문적 관점에서 논의한다.

Biopharmaceutics refer to macromolecules derived from living organisms, therapeutic proteins generally taking the most of the part. At present, high market growth rate of such therapeutic proteins is attracting many companies to thrust into the market. In this subject, the characteristics of the development of recent protein therapeutics are summarized, and the series of developing process is discussed in industrial, academic, and regulatory point of view.

375.668 분자병태생리학특강 3-3-0

Topics in Molecular Pathophysiology

분자병태생리학은 질병의 병리기전을 분자수준에서 규명하는 학문분야로 세포나 조직의 병인체에 대한 반응의 사건 경과를 분자생물학적 조절기작을 읽는 학문분야이다. 본 과목에서는 최근 연구결과를 중심으로 신체의 병리학적 기전을 이해하기 위한 기본과 주요 포괄적 지식을 제공한다. 또한, 최근의 기술의 발전에 따라 생물학적 지표를 이용한 종합적 평가법도 소개한다.

The fundamental structures and functions of cells in higher organisms and the molecular mechanisms of intracellular signal transduction pathways which connect extracellular stimuli to gene expression will be instructed. Also, recent advances in cell physiology and the related human diseases and therapy will be introduced and discussed.

375.669 모델생명체의 형질표현체학 3-3-0

Phenomics of Model of Organisms

모델생명체의 유전체 정보가 밝혀짐에 따라 이의 형질표현체계를 체계적으로 분석하는 학문이 태동하게 되었다. 특히, 유전자 변형 생쥐를 중심으로 모델생명체의 형질표현체학은 유전자 별의 생물학적 지도로장의 구성의 하나이다. 본 과목에서는 최근 연구결과와 함께 수학적 기법들을 중심으로 생물학적 지도학을 구축하는 방법론들을 이해한다.

The discovery of genetic data of Model organism opens the systematic phenotype identification of organisms. Especially, phenotype of model organisms, including genetically-engineered mouse or mutants, is essential for the construction of a great biological atlas of gene map. This course was built on the conceptual basis of “the diagnostic clinic for mice” and also presents the understandings of the comprehensive systematic analysis of genetically engineered mouse.

Advanced Pharmacokinetics

Part 1에서는 pharmacokinetics에 대한 기본 지식을 강의하고 이론을 기본으로 하여 Part 2에서는 약물의 pharmacokinetics에 영향을 주는 점검이나 factor, 그리고 최근의 국제학회지에 출판한 pharmacokinetics에 관한 논문을 검토, 토론한다.

This course will cover the basic and latest topics in pharmacokinetics.

375.813 약물학특강 3-3-0

Advanced Pharmacokinetics

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This course will cover the basic and latest topics in pharmacokinetics.

Molecular Pharmacology

분자약물학은 약물작용 및 선택적인 독성을 분자수준에서 규명하는 학문분야이다. 약물작용의 기전적인 연구에는 생리학, 생화학, 병리학, 면역학 및 면역생물학 등의 지식이 총체적으로 요구되며, 약물분자는 수용체를 비롯한 세포의 기반단전경과 소화작용하여 약리효과를 나타낸다. 본 과목에서는 약물의 약물작용 기전 및 약물작용 기전의 이해를 목표로 한다.

The course of molecular pharmacology provides information on drug action or selective toxicity at the molecular level.
level. Molecular Pharmacology includes studies of drug receptors, drug-enzymes, molecular biology of drug metabolism, signaling pathways, protein-nucleic acids interaction, and drug-induced gene regulation. Students are encouraged to discuss components of biological experimentation and recent reports on molecular pharmacology. This course is offered to Ph.D. and M.S. graduate students.

802.901 Advanced Physiology 1

This course will study the body functions of mammals including human beings: general cell physiology, heart and circulation, hormone, kidneys and body fluids, and neurophysiology.

802.902 Epigenomics in Drug Discovery

Epigenetics means diverse modifications that result in heritable changes of gene expression regardless of its genetic sequences. This includes DNA methylation, histone modifications and more recently non-coding RNAs. Epigenetics is a rapidly advancing field and holds great promise for a range of human diseases, including developmental and degenerative brain disorders such as Rett syndrome, Kabuki syndrome, Alzheimer disease and Huntington disease. This class aims to discuss the pharmacology of epigenetics in treating disorders of epigenome, which are either induced developmentally or acquired later in life. We will address the recent advances in our understanding of the complex regulation of the epigenome regarding its many molecular players, and also discuss some basic issues to consider in designing epigenome-related drugs.

375.518 Advanced Hygienic Chemistry

Advanced Hygienic Chemistry

This course will review the latest literature on hygienic chemistry, with an emphasis on the disposition of xenobiotics, toxic mechanism, and biological self defense mechanism.

375.523 Industrial Toxicology

The course will introduce the general principles of industrial toxicology. Topics will cover the toxicity of airborne industrial chemicals such as solvents, gases, and particulates. Special emphasis will be placed on industrial hygiene practice.

375.622 Drug Induced Disease

This course will cover the diseases that result from extended drug treatment and misuse from theoretical and practical viewpoints.

375.623 Clinical Pharmacy Clerkship 1

This course will consist of field practice in selected hospitals that possess in-patient care facilities so as to provide students with a chance for practical experience as future clinical pharmacists.

375.624 Clinical Pharmacy Clerkship 2

This course will consist of field practice in selected hospitals that possess in-patient care facilities so as to provide students with a chance for practical experience as future clinical pharmacists.

375.711 Biological Self-defence Mechanism

This course will review several important current issues including cellular defence mechanisms in free radical toxicology.
Methods in Biological Safety Evaluation

In this course, students will learn the role of pharmacogenomics in the assessment of individual risk of adverse drug reactions (ADRs) or therapeutic failure. This is expected to lead to the era of personalized pharmacotherapy. Pharmacogenetics is a science that integrates clinical pharmacology with the study of genetic variants related to drug metabolism and response, which is expected to lead to the era of personalized pharmacotherapy. The importance of clinical pharmaceutical trial in drug approval as well as bioequivalence of generic drug and the acquisition of foreign currencies through multinational pharmaceutical trial caused social attention. In this course, students will learn the fundamental concepts and how to design, develop and evaluate all phases of a clinical pharmaceutical trial.

Molecular Toxicology

In the course of molecular toxicology, students are learning about the toxicology of xenobiotics in the molecular level. This course metabolic activation (biotransformation) of xenobiotics, interaction of xenobiotics with genes, gene expression and signal transduction as well as the health effects caused by the series of the events.

Clinical Pharmacogenomics

Clinical pharmacogenomics has provided extensive information regarding on the genetic background on the wide inter-individual variation of drug responses, which is expected to lead to the era of personalized pharmacotherapy. Pharmacogenetics is a science that is interesting to the inherited variants of genes related to pharmacokinetica (drug metabolizing enzymes, drug transporters etc.) and pharmacodynamics (receptor, ion channel, target enzyme etc.), which are associated to the susceptibility of an individual to the higher risk of ADR or therapeutic failure. This is expected to lead to the era of personalized pharmacotherapy. This course metabolic activation (biotransformation) of xenobiotics, interaction of xenobiotics with genes, gene expression and signal transduction as well as the health effects caused by the series of the events.

Clinical Trial Methodology

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Advanced Pharmacotherapy

In this course, students will learn the role of pharmacogenomics in relation to wide interindividual variation of drug disposition and to the possible contribution to the personalized pharmacotherapy.
**375.816** 
**영상소프트웨어 및 임상응용 2-2-4**

*IV Admixture of TPN and Clinical Application*

TPN (Total Parenteral Nutrition) is a therapeutic modality used to provide essential nutrients to patients unable to consume food orally. This course focuses on the preparation, formulation, and clinical application of TPN. Students will learn about the principles of formulation and the use of consultants in TPN formulation. The course also covers the principles of drug interactions, enteral nutrition, and their proper monitoring.

**375.817** 
**의약품정보학특강 2-1-2**

*Topics in Drug Information*

This course introduces students to drug information sources and how to access them, systematic drug literature searches, and how to answer drug information questions. The course emphasizes clinical services, focusing on actual experience in literature retrieval, analysis, and dissemination of drug information.

**375.818** 
**소아약학 2-2-4**

*Pediatric Pharmacy*

This course covers the following topics: economic analysis of pharmaceuticals, drug utilization assessment, pediatric/adult nutritional considerations, drug-nutrient interactions, enteral nutrition, and their proper monitoring. Students are exposed to the preparation of aseptic parenteral nutrition products while considering their safety, stability, and drug interactions. This course will focus on nutritional assessment, pediatric/adult nutritional considerations, and drug interactions. Students will learn about the principles of formulation and the use of consultants in TPN formulation. The course also covers the principles of drug interactions, enteral nutrition, and their proper monitoring.

**375.819** 
**노인약학 2-2-4**

*Geriatric Pharmacy*

This course will focus on the preparation of aseptic parenteral nutrition products while considering their safety, stability, and drug interactions. Students will learn about the principles of formulation and the use of consultants in TPN formulation. The course also covers the principles of drug interactions, enteral nutrition, and their proper monitoring.
This course aims to provide the practical knowledges and skills to apply it in their research. Clinical Pharmacometrics course that we are planning to teach, students will get a deeper understanding of pharmacometrics and the practical skill to apply it in their research. Pharmacometrics encompasses each area of Population PK, PK/PD modelling and simulations; making it have a wide range of uses. Through the Clinical Pharmacometrics course, we will teach, students will get a deeper understanding of pharmacometrics and the practical skill to apply it in their research. The ultimate purpose of teaching Clinical Pharmacometrics is to educate each student produces research outcomes that in-depth knowledge on drug regulation, design, and to receive a new drug approval. In order to perform such research activities successfully, it is essential for the researchers to study the regulatory science and comprehensively accumulate the knowledge on drug regulation, designing and performing clinical trials, and analyzing and interpreting clinical data from clinical trials. This is a didactic course designed for the graduate students who are interested in learning the development of new drugs or more effective therapeutic drug regimens to systematically acquire the knowledge on the scientific approaches that are composed of but not limited to drug exposure-response relationship determinations, clinical pharmacology studies, safety-efficacy assessments, risk-benefit analyses, and drug effectiveness evaluations from the first-in-human trial to therapeutic use studies.

Pharmacometrics

Pharmacometrics is the study of mathematically characterizing a drug’s pharmacodynamic/pharmacokinetic phenomenon. The existing method of predicting a drug’s efficacy or side effect is based on the plasma concentration of a drug. However, it is becoming evident that the relationship between plasma concentration and the actual efficacy or side effects of a drug is imperfect. This has brought into light the concept of pharmacometrics, which is the combined science of pharmacodynamics and pharmacokinetics, to yield a more precise and refined result. Pharmacometrics encompasses each area of Population PK, PK/PD modelling and simulations; making it have a wide range of uses. Through the Clinical Pharmacometrics course, we will teach, students will get a deeper understanding of pharmacometrics and the practical skill to apply it in their research. The ultimate purpose of teaching Clinical Pharmacometrics is to educate each student produces research outcomes that indicate an optimum dosage and directions of drugs so as to let “individualized pharmacotherapy” possible.
Drug Safety in Clinical Pharmacy

Provision of population-based pharmacotherapy and evaluation of drug use are essential activities of pharmacists and researchers in clinical pharmacy. This graduate level course offers lectures and discussions on the role of pharmacist in drug safety targeting patient population from community and hospital pharmacy, continuous monitoring of drug use and drug safety targeting patient population from community and hospital pharmacy.

This course will cover the chemical bond theory and the chemical structural theory. It will take an instructional approach to carbonium ion, carbanion, radical, benzene, and nitrene.

**Drug Safety in Clinical Pharmacy**

Drug Safety is a branch of clinical pharmacy concerned with the diagnosis and management of life-threatening conditions requiring optimal organ support, invasive monitoring, and sophisticated drug therapy. This didactic course provides the graduate students majoring in clinical pharmacy with the advanced knowledge on pharmacotherapeutic approaches in acute care setting. The knowledge includes but is not limited to prospectively evaluating all drug therapy for appropriate indications, dosage, drug interactions, and drug allergies; monitoring the patient's pharmacotherapeutic regimen for effectiveness and adverse drug reactions; intervening the patient care activities as needed; and involving actively in clinical research works.

**M1483.002300 약물감시 정책과 연구 3-3-0**

Pharmaco-Vigilance Policy and Research

This course will cover the chemical bond theory and the chemical structural theory. It will take an instructional approach to carbonium ion, carbanion, radical, benzene, and nitrene.

**M2175.001000 약물감시 정책과 연구 3-3-0**

Pharmaco-Vigilance Policy and Research

This course will cover the chemical bond theory and the chemical structural theory. It will take an instructional approach to carbonium ion, carbanion, radical, benzene, and nitrene.

**Advanced Medicinal Chemistry 1**

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This course will cover the development of new chemotherapeutics and theoretical approaches to the relationship between chemical structures and pharmacological actions (anticancer agents, sulfa drugs, and fungicidal drugs) in pharmaceutical synthesis, anticancer agents, and antibiotics.

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유기전이 금속의 화학과 이들의 유기합성반응에의 응용, 반응기구 및 이들이 최근 연구 동향과 아울러 최근 전반적인 유기반응의 기초와 애탑을 강조한다.

The applications to organic synthesis, reaction mechanisms, and recent achievements of organic transition metals will be covered in this course. The course will also include topics on recent organic reactions.

신약개발에 필요한 신둔물질 도출 및 최적화 과정의 최선 기술을 강하고, 세미나를 통한 집합별 신약개발 연구동향을 파악한다. 강의내용은 합리적 분자설계 기술, 분자lóg리 및 생물학적 설계기술과 세미나로는 중추신경계 신약개발 동향, 심장 및 대사질환 신약개발 동향, 염증관련 신약개발 동향, 암 및 감염계 신약개발 동향을 포함한다.

This course covers the up-to-date methods and technology related to lead discovery and optimization for new drug development and provides the individual seminars with the topics of updated information about new drug development based on diseases.

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신약개발에 필요한 신둔물질 도출 및 최적화 과정의 최선 기술을 강하고, 세미나를 통한 집합별 신약개발 연구동향을 파악한다. 강의내용은 합리적 분자설계 기술, 분자lógica 및 생물학적 설계기술과 세미나로는 중추신경계 신약개발 동향, 심장 및 대사질환 신약개발 동향, 염증관련 신약개발 동향, 암 및 감염계 신약개발 동향을 포함한다.

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This course covers the up-to-date methods and technology related to lead discovery and optimization for new drug development and provides the individual seminars with the topics of updated information about new drug development based on diseases.
lecture will provide an introduction to various core research subjects currently in progress at the college of pharmacy. Through the course, the students will obtain general concepts on research areas which may be different from their own ones. This should enable the students to understand the multi-disciplinary nature of the pharmaceutical research and to expand their future research topics. In addition, the students will have the opportunity to nurture their critical thinking skills on other peoples’ research through the discussion on a wide range of pharmaceutical research.

M1483.002400 유기금속화학특강 1 3-3-0

Topics in Organometallic Chemistry 1

Recently organometallic reactions have become a main-stream of organic drug synthesis. Many kind of medicine have been synthesized using metal catalysts. This class provides theoretical knowledge to help understand metal catalysis, and gives overview of their application in synthesis of biological active compounds. An in-depth study of practical transition metal catalysis; Oxidation, Reduction, Cross-coupling, Metathesis and C-H activation etc. Furthermore, a knowledge of representative catalysis; Oxidation, Reduction, Cross-coupling, Carbonylation, Carbanion chemistry have been synthesized using metal catalysts. This class will deal with detail of metal catalysis based on each mechanism, and explore recent trend of transition metal catalysis. This course will improve ability to analyze mechanism in rational manner, and gives overview of their application in synthesis of various compounds. An in-depth study of practical transition metal catalysis will help students to apply it to their research.

M2175.001200 유기금속화학특강 2 3-3-0

Topics in Organometallic Chemistry 2

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375.585 기기분석 1 3-3-0

Instrumental Analysis 1

리란 분광학에 대한 기초이론을 주입시켜, 기기의 사용방법을 숙지 및 그 응용력을 배양하며, 물질의 확인 및 구조조정 등에 있어서 필요한 제반자료를 얻어 활용 등에 대하여 강의한다.

This course will consist of lectures on the theories and applications to up-to-date methods of pharmaceutical analysis as well as a presentation of the new processes and a comparison with the existing methods in order to formulate more resolable and improved methodology for analysis.

375.682 약물분석특론 2 3-3-0

Advanced Pharmaceutical Analysis 2

Spectrometry를 기준으로, 물질을 확인하는 기본적 이론과 구조추정에 있어 실제 응용에 관해 강의한다(Elemental analyzer, IR, NMR, UV, Mass).

The fundamental theories of chromatographic separation and quantitation of pharmaceuticals will be taught in this course.

375.686 기기분석 2 3-3-0

Instrumental Analysis 2

Studies in Pharmacoproteomics

Pharmacoproteomics is the applications of proteomics in new drug development and will play an important role in new drug development in the near future since proteomics is rapidly emerging field. By learning nano HPLC/mass spectrometry-based pharmacoproteomics technologies, graduate students may understand the golden gateway to discovery of new drugs.

In this course, the entire pharmaceutical manufacturing process from the quantitative and qualitative analysis of raw materials to standardization, manufacturing equipmenting, and final product assays and stability studies will be taught.
This class contains actually everything a researcher would try to find in pharmaco-proteomics field such as deep theory of instruments, background knowledge, practical protocols, and published data. Also it would be a precious information tool for the researchers who study the proteome related field. By focusing on what is currently issued, graduate students will be able to grasp the available information filtered from numerous primary literatures at the end of the class.

371.688  
**Biomedical Biomaterials**

- The purpose of this course is to introduce students to biomaterials used for drug delivery systems and medical devices so that they can understand the role and function of materials used in the biomedical field. In particular, students will learn about such biopolymers as proteins and polysaccharides, as well as synthetic polymers such as polyethylene glycols.

- Materials to be taught will be separated based on characteristics and structure. For characteristics, biodegradable polymers, water soluble polymer and hydrogels will be introduced, and structurally linear polymer and crosslinked polymers will be introduced. The course will deal with the structure of biomaterials, and interaction between matter and macromolecules, which is to decrease toxicity and increase drug efficiency. In particular, the course will focus on the formation of materials, and interaction between biomaterials, and interaction between matter and macromolecules.

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- This course presents the following major components: i) an overview of molecular structure and molecular interaction of drugs.
- ii) The application of spectroscopic methods and X-ray crystallography to the pharmaceutical system.
- iii) The application of spectroscopic methods and X-ray crystallography to the pharmaceutical system.

Advanced Macromolecular Drug Delivery

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- iii) The application of spectroscopic methods and X-ray crystallography to the pharmaceutical system.
생체물질의 구조를 수학함에 있어 반드시 알아야 할 여러 NMR 지식을 중심으로 강의를 전개하게 된다. 강의는 과목마다 다른 목표를 바탕으로 토론식으로 전개할 것이다.

This course will include various physiological characteristics that can be studied through pharmacologically active compounds, various organs, and bioavailable substances.

375.657 약제학특론 2 3-3-0

Advanced Pharmaceutics 2

본 강좌에서는 약제학 분야 연구 동향에 대한 지식을 확대하고 신약/신제약품을 개발과정에 적용/응용되게 하는 데를 목표로 한다. 특히 약물의 통합학적 문제와 상호작용을 이해하여 치료성(효과, 분포, 대사, 백혈의 과정)을 예측, 설명하는 연구와 약물의 효능/부작용에 따라 나타나는 계통의 원인 및 기전을 이해하여 약물치료 최적화에 적용한 사례를 다룬다. 최신 연구 문헌 조사, 발표를 통해 토론식 수업으로 진행되며 본 강좌를 수강하기 전에, 약제학특론 1의 수강을 권장한다.

This course will cover the factors relevant to the pre-formulation of pharmaceuticals. Topics will include the solubility, dissolution, absorption, and excipients of active ingredients.

375.659 물리약학특론 2 3-3-0

Advanced Physical Pharmacy 2

현대 과학이 발전하여 과학자들이 깊게 깊게 따라 갈 수 있도록 갈수록 복잡해지며 과학의 경계가 모호하게도 각 분야에서 얻어진 지식과 문제를 다루는 방법이 상호이용되기 되었다. 특히 최근에 이루어진 생명학화학의 발전은 이와 관련된 기초과학이 생명과학을 전공하는 학생들에게 핵심적인 것으로 되게 되었다. 따라서 생명과학분야에서 물리화학(물리약학)의 핵심이 되며 대학원과정에서 더욱 필요하게 되었다. 이 강의에서는 생명과학(약학)에 관련된 물리학적/화학적/생물학적 지식을 학생들에게 효과적으로 전달하고자 한다.

The study of the thermodynamic properties of drugs in solutions and the application of thermodynamics and kinetics to the decomposition and stabilization of medical agents will be included in this course.

375.809 약물학자가공명학 3-3-0

NMR in Pharmacy

Spectroscopy is a tool for in vivo structural determination of biological compounds (proteins and nucleic acids) will be studied in this course.

375.824 생물약동학특론 3-3-0

Topics in Drug Transporters in Biological Membranes

약물 수송체와 약물대사지표에 대한 기본적인 이해를 넣고 그 상호작용이 전반적 약물반응에 미치는 영향을 최근 문헌을 중심으로 강의, 토론한다. 분자생물학 및 여러 생물학적 방법론의 도입에 한하여 in silico, in vitro 등 다양한 실험 방법을 적용하여 약물의 생체내 이상, 장주기, 대사속도 및 축적량 등을 정량적으로 예측함으로써 생명체 내에서의 약물 현상에 대해 이해하고, 투여량, 두여간격 및 두여형태를 적절히 규정하여 약물의 치료효과를 예측하기 위한 기본 과정을 다룬다. 본 강좌를 수강하기 전 약물동태학특강 1의 수강이 필수적이다.

This course will discuss topics in pharmacokinetics including factors that affect the absorption, distribution, metabolism, and excretion of drugs.
생물약제학특강 2 3-3-0

Topics in Biopharmaceutics 2

생물약제학 분야의 최근 연구논문을 읽고 분석, 이해할 수 있는 능력을 기르는 것을 목표로 한다. 특히 약물대사효소 및 약물수송체의 특성을 다루고 신약개발과정에서 생물약제학의 역할과 방향을 포함하는 문헌을 읽고 토론식 수업으로 진행한다.

The goal of biopharmaceutics is to maximize therapeutic benefits of drugs and to minimize their unwanted side effects by enhancing our understanding of the absorption, distribution, metabolism and excretion processes of drug molecules in the body. This course intends to provide students an overview of contemporary topics in the area of biopharmaceutics by discussing recent literature in the field.

생물약제학특강의 최근연구동향 2-2-0

Contemporary research topics in biopharmaceutics

생물약제학에 대한 기초지식을 넣고 분야의 최근의 연구 동향을 이해, 분석할 수 있는 능력을 기르는 것을 목표로 하며, 전반적인 생물약제학의 개념을 다루는 강의이다.

This course is to provide students with fundamental concepts and understanding on contemporary research topics in the field of biopharmaceutics. Through a series of directed exercises which include critical reading and analyzing current literature and in-class oral presentations, the students will learn how to critically evaluate current literature, to make scientifically sound arguments, and to give an effective oral presentation.

생물약제학특강 (Pharmacognosy & Natural Products Science Major)

M2842.000100

생물약제학특강 2 3-3-0

Biosynthesis of Plant Constituents

식물생분산합성 3-3-0

Biosynthesis of Plant Constituents

식물중의 약효성분의 생합성 경로에 대해 강의하고 그 생합성 연구에 필요한 실험기술에 대해 논의한다.

In this course, the primary and secondary plant metabolites and the biosynthetic pathway of these substances will be discussed.

자원생약연구법 1 3-3-0

Natural Product Derived Pharmaceuticals 1

천연약물의 정의와 현재 의약품으로 사용되고 있는 다양한 천연약물에 대해 강의한다. 특히 천연약물 특성, 화학 성분, 약효 등에 대해 논의한다.

This course covers all aspects of natural products as pharmaceuticals including both plant derived and microbial derived.

자원생약연구법 2 3-3-0

Natural Product Derived Pharmaceuticals 2

천연약물과 관련된 최근 연구 동향과 연구방법에 대해 강의한다. 특히 천연약물의 표준화 기법과 관련된 연구 동향에 대해 중심적으로 다룬다.

An in-depth discussion of recent advanced in knowledge and scientific techniques of natural products as pharmaceuticals including both plant derived and microbial derived.

M1483.001600

활성물질탐색 3-3-0

Screening Methods for Bioactive Natural Products

화학조성물질연구법 3-3-0

Chemical Structure Analysis of Medicinal Plant Constit

화학서식물화학연구법 3-3-0

Chemistry in Pharmacognosy

화학서식물화학연구법 1 3-3-0

Advanced Pharmacognosy

화학서식물화학연구법 2 3-3-0

Methods in Bioactive Natural Products Research

생물약제학특강 (Pharmacognosy & Natural Products Science Major)

M1483.001700

생물학특론 3-3-0

Advanced Pharmacognosy

생물약제학특강 (Pharmacognosy & Natural Products Science Major)

M1483.001800

생물학특론 3-3-0

Advanced Pharmacognosy
821.512 Separation Techniques in Bioactive Natural Products

This course will provide lectures on the screening of natural products for biological activities, instruction of pre-screening methods, screening methods to assay certain natural product activities, isolation of active compounds using activity-guided fractionation, and structural elucidation. The animal cell and plant tissue culture systems will be introduced as techniques for enhancing the yield of secondary products.

821.520 Special Research in Biological Functions of Natural Products

This course is designed to provide students with information on existing methods and experimental techniques concerning models for searching biological activities including physiological, pharmaceutical and toxic activities. The contents include establishing new models for searching activities, and their applications.
요성분을 성공적으로 연구한 사례를 중심으로 천연물 유효성분 연구의 방법론과 응용성에 대하여 강의한다.

Basic chemical, biochemical, and pharmacological aspects of biologically active compounds will be studied in this course.

821.531 천연물자원 3-3-0

Natural Resources

유용 천연물자원의 종류와 특성을 이해하기 위하여 주요 천연물자원의 용도에 대한 정리적인 검토와 유용천연물의 경제적 가치를 평가, 자원의 이용개발에 필요한 지식을 습득한다. 또한 잠재적 효용을 지닌 생물 유전자원의 개발 및 보존에 대한 논의를 통하여 유용 천연물자원 확보 및 연구에 필요한 포괄적인 지식을 축적한다.

The general uses and economic values of important natural resources will be reviewed to obtain overall ideas on the history and processes in the development of natural products. Natural resources with potential uses and the issue of underdevelopment are also discussed to accumulate the comprehensive knowledge on the development of natural products.

821.624 천연물생물공학 3-3-0

Natural Products Biotechnology

생물공학기술의 급속한 진보는 광범위한 학문분야에 도입되어 생명현상에 관한 새로운 지견의 응용을 토대로 생물활성 검색모델의 개발, 생리활성물질의 발굴 및 신물질 창출, 유용 물질의 대량생산을 가속화하고 있다. 본 과목은 천연물에 초점을 맞추어 생물공학의 기본원리 및 연구방법론을 이해하고, 유용 유전자를 이용한 천연물생산에 있어서 실제 응용에 관하여 강의한다.

In recent years, there has been a heightened public awareness of the fast-growing field of biotechnology. Natural products biotechnology covers an explanation of the genetic foundation of biotechnology known as the tools approach. The ability to manipulate the genetic make-up of organisms has led to explosive progress in all areas of this field. This lecture examines the fundamental principles and facts that underlie current practical applications of various organisms, describes those applications, structure and biosynthesis of the biologically active metabolites, and examines future prospects for related technologies.

821.625 천연물생화학특강 3-3-0

Topics in Natural Products Biochemistry

생물개체의 생명활동과 각 기관의 기능은 세포막의 기능을 제외하고 설명할 수 없으며, 천연물 활성물질의 작용에도 세포막이 중요한 역할을 한다. 특히 병적 상태에서는 막 구성물질뿐 아니라 막의 내재적, 외래적 물질과의 작용을 통해, 세포막의 기능 및 역할을 이해하기 위하여 천연물활성생산에 있어서 체내 응용에 관하여 강의한다.

Recent articles on special topics in Natural Products Science will be discussed in this course.

821.627 천연물생체기능특강 3-3-0

Topics in Biological Functions of Natural Products

생체기능의 분자과학적 지식을 이용하여 천연물의 생리활성 유효성분을 성공적으로 연구한 사례를 중심으로 천연물 유효성분 연구의 방법론과 응용성에 관하여 강의한다.

In order to learn about the uses and developments of useful natural products, various groups of natural resources will be discussed in depth, in regards to their characteristics and processes of development. Current approaches to the development and research of natural resources will be also discussed.

821.642 천연물정보과학특강 3-3-0

Topics in Natural Products Information

천연물정보과학특강에서는 천연물의 생리학적 특성을 이용하여 천연물의 생리활성 유효성분을 성공적으로 연구한 사례를 중심으로 천연물 정보과학 특강의 방법론과 응용성에 관하여 강의한다.

천연물정보과학특강에서는 천연물의 생리학적 특성을 이용하여 천연물의 생리활성 유효성분을 성공적으로 연구한 사례를 중심으로 천연물 정보과학 특강의 방법론과 응용성에 관하여 강의한다.
In this class, students will search the Internet for information on the natural products industry, regulatory agencies, and natural products sciences. Throughout the course, students will learn database construction techniques using HTML. Based on such basic information technology, all students will have access to information on regulatory agencies over the world, such as the American FDA, and other agencies in the EU, Japan, China, Korea, etc. Students will first learn about regulations regarding the registration process and requirements of various natural products like natural drugs, dietary supplements, functional cosmetics and related products. Then, the students will practice the registration process with a model item of their own to obtain registration permission. Through the on-line training, students will construct their own databases on natural products information.

821.711

Structure Elucidation of Natural Products

The development of spectroscopic methods has enabled the structure elucidation of secondary metabolites. The identification of natural products by spectrometry is greatly facilitated by ready access to reference spectra. Therefore, this course provides many exercises for structure elucidation of secondary metabolites. The identification of natural products by spectroscopic data obtained from reference spectra will be introduced to provide general understanding on the natural products industry, regulatory agencies, and their associated regulatory proteins.

821.715

Marine Natural Products Chemistry

Marine organisms produce a wide variety of biologically active and structurally unique metabolites. The identification of natural products by spectrometry is greatly facilitated by ready access to reference spectra. Therefore, this course provides many exercises for structure elucidation of natural products by spectroscopic data obtained from reference spectra.

821.721

Cell Function Regulations from Natural Products

This course concentrates on a small number of organisms and the critical experiments that have advanced our understanding of the cell cycle. The topics include the following: origin of the different experimental approaches to the cell cycle; principles of cell cycle regulation, especially focusing on the roles of the cyclin dependent protein kinases; their contribution to our current picture of cell growth and division; how different organisms have specialized in regulating particular aspects of cell cycle control, resulting in the emergence of a great plethora of proteins that govern cell cycle progression; and the question of cancer and other important medical problems. This course also focuses on the field of "signal transduction", which has revealed almost unimaginable diversity and complexity within large families of proteins involved in the production and destruction of second messenger molecules, and information transfer via kinase cascades and their associated regulatory proteins.
This course will provide the concepts of extraction and isolation of terpenoids, classification, analytical methods, biosynthesis, their spectroscopic properties and pharmacological activities.

M1483.000200 기능성식품 개발론 3-3-0

Development of Functional Foods

Functional foods have been developed for variety of diseases by the use of bioactive materials or active fractions from natural products. This course will cover the concepts of the KDFA approval process, functional properties of each source and its standardization. The latest advancements at functional foods for the prevention and management of chronic illnesses such as cardiovascular diseases, obesity, and diabetes are also to be introduced.

M1483.000300 알카로이드 화학 특론 3-3-0

Advanced Alkaloid Chemistry

Alkaloids are a major contributor in drug development, total synthesis, discovery of alkaloid-specific receptor, and the research on bioactive materials. This course will provide the concepts of extraction and purification of alkaloids, classification, analytical methods, biosynthesis and pharmacological activities. It will also introduce the research history of main alkaloids from natural products, biology, and also structure determination by spectroscopic methods.

M1483.000400 천연물신약개발론 3-3-0

Development of Botanical New Drugs

천연물신약은 여러 구성성분들이 각각의 약물 목표에 작용하여 전체적으로 적은 독성을 가지며 상호 협력적인 활성을 나타내는 약품으로 최근 이의 개발에 많은 관심을 받고 있다. 본 강의는 천연물신약개발과정에서 필요한 소재의 특성 연구 및 표준화, 독성 평가 및 임상연구, 허가과정 및 문제점에 대한 천연물신약 개발 과정에서 필요한 전략에 대하여 중심적으로 강의한다.

Botanical new drugs were gaining interest in natural medicines because of reduced toxicities which is caused by integration effects on multi-targets of multi-components. This course will cover concepts on isolation and characterization of constituents from natural sources and its standardization. Acute and chronic toxicity tests, clinical studies and approval processes for the development of botanical new drugs are also to be introduced.
### M1483.000500 응용시스템약물학 3-3-0

**Applied Systems Pharmacology**

본 과정에서는 신약개발에 응용할 수 있는 시스템약물학적 연구기법의 응용에 대해 학습한다. 시스템생물학에서 이용되는 오믹스데이터 마이닝기법, 줄기세포, 다차원 세포배양계, 세포역학계의 약물학적 응용에 대해 학습한다.

The course enables to graduate students to have working knowledge on application of systems pharmacology in drug development in pharmaceutical industry. Students will have opportunities to learn systems pharmacology based-applications such as data-mining of public genomics databases, stem cells in drug discovery, multi-dimensional cell culture systems, and cell mechanics.

### M1483.000600 코스메슈티칼과 시스템피부과학 3-3-0

**Cosmeceuticals and Skin Systems Biology**

국내 화장품법에 의해 법제적으로 정의된 주름개선, 미백효능에 대한 최신 피부과학의 동향에 대해 학습하고, 피부장벽, 보습 등 화장품의 약리적 효능에 대해 시스템생물학적 관점에서 공부함으로써 코스메슈티칼의 최신 약리 동향을 파악한다. 그리고 새로운 화장품 개발을 위해 피부 독성학 관점의 오믹스 방법론에 대해 학습하고자 한다.

This course covers the recent trends in pharmacological and toxicological sciences for the development of cosmeceuticals. The course enables to graduate students to have working knowledge on systems skin biology associated with the development of anti-wrinkles, anti-melanogenic cosmetic materials, and cosmeceuticals to improve skin barrier, etc. In addition, this course will cover the recent trends in the development of alternative toxicological testing for cosmetics.

### M1483.000700 동물대체연구방법론 3-3-0

**Alternative Methods to Animal Testing**

유럽에서는 현재 화장품의 안전성 및 효능 평가를 위해 동물을 사용하는 것을 금지하고 있다. 글로벌 화장품사의 경우 활발하게 동물대체시험법의 개발에 기술 투자를 하고 있으며, 국내 화장품사도 유럽진출을 위해 동물대체시험법에 대한 관심이 높다. 본 과정에서는 피부알레르기, 피부암, 유전자 변이에 대한 동물대체시험법 방법론에 대해 학습하고자 한다. 그리고 새로운 동물대체시험법 개발을 위해 피부 독성학 관점의 오믹스 방법론에 대해 학습하고자 한다.

This course will cover knowledge on alternative safety test methods for skin irritation, skin sensitization, and photo-sensitivity, etc. The course enables to graduate students to have working knowledge on the development of new alternative safety testing methods for cosmeceutical omics based on skin toxicology.
음악대학
College of Music
공통과목(Core Courses)

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Graduate Recital

이 강좌는 수강생들로 하여금 위에서 언급한 음악사 연구의 경향을 숙지하도록 하는 것을 목적으로 한다. 하지만 최근 관련 연구자들은 더 이상 연구가 19세기의 음악을 낭만주의의 개념으로 파악하지 않고, 다양한 측면으로 접근하는 것이 바람직한 것으로 여겨졌다. 따라서 연구자들에게는 19세기에 나타난 음악현상들을 그 시기의 음악 작품들을 통해 드러난 다양한 측면으로 접근하는 것이 바람직한 것으로 여겨졌다. 만약 음악사를 시기 구분이 그 연구에 적합한 방식으로 이루어졌다면 19세기 음악에 대한 보다 합리적인 설명이 가능할 것이며 따라서 이 강사는 수강생들로 하여금 음악사 연구의 경향을 숙지하도록 하는 것을 목적으로 한다.

So far the trend of research in history of 19th century music tended to be summarized mainly as the term Romanticism. But currently researchers in music history are in the process of changing their point of view of 19th century music: from music in Romanticism to 19th century music of its own. There are already many types of characteristics in 19th-century music that cannot be summed up in one type of -ism, and it is quite understandable for researchers to explain the musical phenomenon of 19th century on behalf of various aspects of musical works in that time. The more reasonable explanation will be possible for 19th century music if the division of period in music history is adjusted to its proper way of research and this course is to facilitate students to be fully aware of above mentioned trend of music history research.

Arts Management

공연예술분야를 중심으로 경영과 행정 기술을 도입하여 예술공연 예술기획, 운영의 전문성을 파고, 공연예술에 대한 다양한 쪽sphere 수를 창출하여, 문화예술의 상품가치를 높인다. 수업내용으로는 예술경영전반에 대한 이해, 분야별 특성, 국가별 운영 체계 비교, 조직 구성원, 설립취지, 이사장의 역할, 리더십, 비영리 조직과 영리조직의 비교, 재단법인, 기금마련, 예산 관리, 예술단체의 창단 및 운영, 기획 스탭, 개인 후원, 프로그램기획, 예산, 이벤트 등이 있다.

This course gives students the opportunity to develop skills as future managers and fundraisers of the performing arts by incorporating business and administration techniques to create a new market and increase the value of arts products.
The Enlightenment dominated from 1750 to 1830. In this course, music from this period will be discussed by reading original English texts every week.

M1797.001000 고전주의 음악의 해석 3-3-0

Interpretation through Analysis of Classical Period Music

본 수업은 고전주의 작품의 분석을 토대로 음악분석과 연주 간의 관계를 고찰하며, 또한 고전주의 연주관습 및 녹음된 연주의 비교분석과 비평을 통해 연주 전공자로 하여금 음악작품의 해석능력을 갖추도록 돕는다.

또한 고전주의 관점에서의 작가가 및 작품 연구를 통해 고전주의 음악의 양식적, 형식적, 역사적, 미학적 측면에 대한 이해를 높이고, 이를 통해 연주 전공자들에게 필수적인 ‘음악에 대한 통합적 이해’를 향상시키는 것에 본 수업의 목표를 둔다.

This course deals primarily with the relationship between analysis and performance with a focus on music of Classical period. It also draws upon the history of performance practice and comparative evaluation of recorded performances.

Also the stylistic, formal, historical and aesthetic aspects of the period will be discussed in terms of its leading composers and their works from a performer-oriented perspective.

M1797.001100 낭만주의 음악의 해석 3-3-0

Interpretation through Analysis of Romantic Music

본 수업은 낭만주의 작품의 분석을 토대로 음악분석과 연주 간의 관계를 고찰하며, 또한 낭만주의 연주관습 및 녹음된 연주의 비교분석과 비평을 통해 연주 전공자로 하여금 음악작품의 해석능력을 갖추도록 돕는다.

또한 낭만주의 관점에서의 작가가 및 작품 연구를 통해 낭만주의 음악의 양식적, 형식적, 역사적, 미학적 측면에 대한 이해를 높이고, 이를 통해 연주 전공자들에게 필수적인 ‘음악에 대한 통합적 이해’를 향상시키는 것에 본 수업의 목표를 둔다.

This course deals primarily with the relationship between analysis and performance with a focus on Romantic music. It also draws upon the history of performance practice and comparative evaluation of recorded performances.

Also the stylistic, formal, historical and aesthetic aspects of the period will be discussed in terms of its leading composers and their works from a performer-oriented perspective.

M1797.001200 근현대 음악의 해석 3-3-0

Interpretation through Analysis of since Debussy

본 수업은 근현대 작품의 분석을 토대로 음악분석과 연주 간의 관계를 고찰하며, 또한 근현대음악의 연주기법 및 녹음된 연주의 비교분석과 비평을 통해 연주 전공자로 하여금 음악작품의 해석능력을 갖추도록 돕는다.

또한 근현대의 연주관습 및 녹음된 연주의 비교분석과 비평을 통해 연주 전공자로 하여금 음악작품의 해석능력을 갖추도록 돕는다.

This course deals primarily with the relationship between analysis and performance with a focus on Music since 1900. It also draws upon the history of performance practice and comparative evaluation of recorded performances.

Also the stylistic, formal, historical and aesthetic aspects of the period will be discussed in terms of its leading composers and their works from a performer-oriented perspective.
M2183.000500 뉴뮤직 프로덕션 랩 3-2-2
New Music Production Lab
작곡, 연주를 포함한 상호 간 협업을 통해 새로운 공연을 직접 제작하는 것을 목표로 하는 교과목이다. 음악대학의 대표적 뉴뮤직 프로덕션이 만들어지는 플랫폼으로 현대음악시리즈 스튜디오 2021과 연계되어 진행된다.
This course aims to prepare graduate students to practice and create new music productions through composition and performance in collaboration. It is also a platform for potential products that have been professionally developed for the new music productions of the College of Music. This course is linked to the SNU New Music Series, Studio 2021.

M2183.000600 공연예술로서의 음악 3-2-2
Music as Performing Arts
공연예술이라는 전제적인 관점에서 작곡, 연주 등의 행위를 이해하고 특히 무대 및 콘서트홀, 극장 등의 공간과 작곡, 연주의 관계를 집중 탐구한다.
Participants will be acquiring a new understanding of composing and playing music from the general perspective of performing arts, and a deep insight of the relationship between the music and the spaces such as stage, concert hall and theatre.

성악전공(Vocal Music Major)
650.562 작곡가특강(성) 3-3-0
Topics in Major Composers
볼프가곡의 예술적 가치와 음악어법을 연구하고 조명한다.
This course will study the artistic value and musical idiom of songs by Wolf, who ideally combined poetry with music and voice with accompaniment. The study of his texts and poetry will be included. Transition from Romantic to modern songs will be discussed through Wolf’s works.

650.557 합창지휘법연구 3-3-0
Studies in Chorus Conducting
시대별 연주규범(performance practice)을 합창곡 중심으로 일어보고, 각 시대별 음악의 양식(Style)을 고찰하여 실제 연주에 적용할 수 있도록 한다.
This course will explore choral music from all periods. Choral style from various periods will be studied and applied to actual performance.

651.505 성악문헌연구 3-3-0
Studies in Vocal Literature
시화음악의 집합되어 만들어지는 가곡의 변천에 대해, 중세부터 19세기 남반주작가에 이르기까지 시의 내용과 형식, 그리고 음악과의 관계, 성악과 반주작의 관계에 대해 연구하여 곡의 정확하고 깊이 있는 해석과 다양한 레퍼토리의 문헌적 바탕을 마련하는 데 그 목적이 두고 볼 필요는 인주프로그램을 소화하고 올바른 인주로 향상될 수 있는 능력을 키운다.
The fundamental purpose of this course is to help performers to perform and interpret essential operas in authentic way through the detailed musical analysis of significant operas and study of libretti. The course concentrates on musical training and study of full opera scores of prominent composers, obtaining stylistic characteristics of each composer and analyzing in-depth background of drama and dramatic personae on operas. It culminates with presentation and performance of works of operas to help participants to develop their knowledge and abilities as a professional singer.
formers to perform and interpret essential operas in authentic way through the detailed musical analysis of significant operas and study of libretti. The course concentrates on musical training and study of full opera scores of prominent composers, obtaining stylistic characteristics of each composer and analyzing in-depth background of drama and dramatic personae on operas. It culminates with presentation and performance of works of operas to help participants to develop their knowledge and abilities as a professional singer.

Focused on artists, artworks, artistic systems, and the organization of audiences structures of musical phenomena. Focus will be on artists, performers will be invited for discussions on their musical ideas, instrument, and interpretation. Some guest performers will be invited for discussions on their musical ideas, instrument, and interpretation. Students will also be required to give presentations on chosen topics. The cognitive science of music concerns the reception, perception, and cognition of sounds that happens in the process of listening. This course will provide basic concepts of this area and an opportunity to grasp the main ideas from current research.

This course will provide notions on philosophical and aesthetic speculation about music. This course will examine non-Western music through a detailed musical analysis of significant operas. It culminates with presentation and performance of works of operas to help participants to develop their cognitive science of music concerns the reception, perception, and cognition of sounds that happens in the process of listening. This course will provide basic concepts of this area and an opportunity to grasp the main ideas from current research.

650.506 Aesthetic of Music

650.526 Studies in Indian Music

650.534 Studies in Sociology of Music

650.561 Study of Music Analysis Theory

652.562A Studies in Psychology of Music

652.586 Conducting Major

652.588A Conducting Major
themselves from the tradition, also were required to deal with new paradigm and consciousness in new music. This course is to look into various aesthetic aspects in contemporary music through providing specific examples of 20th century music and dealing with composer's own writings in order to give a better understanding of aesthetics of contemporary music.

652.603 작곡가 연구 3-3-0

Studies in Composers

본 과목은 매 학기 특정 작곡가를 선택하여, 그 작곡가의 작품들에 대한 심도 있는 탐구를 통해 작품 속에서 드러나는 미학적, 양식적 이슈들을 살펴보는 것을 목표로 한다. 음악학자와 연주자 모두에게 주요한 연구대상인 작곡가를 선정하여, 공극적으로는 본 과목을 통해 얻은 아이디어를 학위논문으로 발전시킬 수 있도록 단계별 학과연수의 작곡에 대해 복잡하게 조사, 연구하는 기회를 제공한다. 현재는 로베르트 슈만의 음악을 중점적으로 다루고 있으며, 매 학기 수강생의 관심사에 따라 작곡가의 선정은 변경될 수 있다.

This course focuses on composers and their works which cast various academic issues in music performance and musicology. Composers and their works for this course will be selected upon students' request and under an expert's consultation at the beginning of the semester. Surveying extensively the current status of academic and performance reception of a composer and his/her works, this course offers students an opportunity to develop a higher level of understanding of a composer through in-depth analysis of his/her works. Eventually, this course will help students produce a paper, thesis, or dissertation on a composer. The current composer (as of 2014) of our interest is Robert Schumann.

657.601 음악연구방법론 3-3-0

Studies in Methodology of Research on Music

본 과목은 음악대학 석박사 과정의 학생들에게 음악연구방법론을 체계적으로 지도하여, 학문적 연구와 글쓰기 능력을 함양하는 것을 목적으로 한다. 이 수업에서는 논문작성을 위한 기본적 방법론, 음악 연구의 적합한 주제 설정과 개요 작성, 자료 조사 및 논리적 구성 방법 등 실제적인 논문 작성 방법론을 다룬다.

This course aims to provide College of Music graduate students with training for researching and writing skill. In this course, students will examine basic methodologies for writing of graduation paper.

661.514A 음악음향학 3-3-0

Musical Acoustics

음악에 사용되는 소리는 어떻게 발생하고, 전파되며, 인간에게 어떻게 수용되는가에 대한 강의를 통해 소리에 대한 과학적 특성을 이해하는 것을 목표로 한다.

This course will cover acoustics related to generation, propagation, and perception of musical sounds. The purpose of this course is to enable the students to understand scientific characteristics of sound.
657.720  
**Studies in Electro-acoustic Music**

This course deals with literatures of electro-acoustic compositions and attempts to lead students to knowledge of the various styles and techniques used in electro-acoustic music.

657.730  
**20th Century Music**

This course aims to understand music in the twentieth-century in the light of the history of Western art music. Modern music has so diverse tendencies that still need to be investigated; this course helps students to have a clue to understand modern music, focusing on exploring the diverse trends and compositional techniques from the historical point of view.

657.734  
**Graduation recital for Conductors**

This course is to allows for graduate students of doctoral course in conducting major to prepare for their graduate repertoire in a concert and the overall interpretive ability of the performer. Students are required to conduct orchestral repertoires in a concert and the overall interpretive ability of the performer.

657.735  
**Music Theater Production Workshop**

This course will provide the students with the opportunity to have practical training and field experiences for the production of the music theater in a broader sense, including contemporary opera, musical, and especially the New Music Theater. This course aims to create a new piece of work. Furthermore, the new course will focus on producing and releasing professional composers and librettists to the performing arts world.

657.736  
**Contemporary Music Idioms**

This course is to allows for graduate students of doctoral course in conducting major to prepare for their graduate repertoire in a concert and the overall interpretive ability of the performer. Students are required to conduct orchestral repertoires in a concert and the overall interpretive ability of the performer.

652.601  
**Anthropology of Music**

Music is a subject that all human beings universally posses. However, music has evolved to different styles according to its function and purpose. Researches on the Western music have been done in various ways, while music in other cultural areas has not been studied equivalently. Studies which deal with history of individual tribes from various perspectives and compare their diverse cultures in terms of comparative musicology could reveal important aspects about the essential issues of music and human being. In this class, students compare music of various cultural areas outside of the Western music tradition, and discuss anthropological issues on universality and relativity of music.

652.602  
**Research in Neuroscience of Music**

This course will provide the students with the opportunity to have practical training and field experiences for the production of the music theater in a broader sense, including contemporary opera, musical, and especially the New Music Theater. This course aims to create a new piece of work. Furthermore, the new course will focus on producing and releasing professional composers and librettists to the performing arts world.
the various research methods investigating human ability to cognize languages can be adapted to music cognition. In this class, students learn basic knowledge on neuroscience of music, look through recent research achievements in the field, and then discuss strength and weakness of various research methodologies. Finally, Students themselves would try to design neuroscience research model.

M2183.000700 작곡 플로키움 3-0-6
Composition Colloquium

박사과정 중 작곡된 작품들에 대한 발표 및 평가가 이루어진다.

Participants are required to present their works in concerts before a faculty auditioning committee. The works are evaluated in terms of proficiency and originality in composition.

기악전공(Instrumental Music Major)

M1800.000100 피아노문헌연구 3-3-0
Studies in Piano Literature

이 수업은 대학원 학생들을 위한 전공 필수 수업이며 다양한 장르와 시대별 피아노 문헌에 대해 연구한다.

This course will help students to gain a thorough understanding of piano. Students will learn to analyze piano literature from various musical periods. The course is requisite for graduate students.

653.505 현악문헌연구 3-3-0
Study in Literature of String Music

대학원 학생들을 위한 전필수업이며 다양한 장르와 시대별로 현악기와 관련된 곡들, 그리고 문서를 공부한다.

This course will help students to gain a thorough understanding of string instruments. Students will learn to analyze solo and ensemble literature from various musical periods. The course is requisite for graduate students.

653.589 전공실기(피아노) 2-1-2
Major

전문 피아노스트로 활동하기 위한 고도의 연주기술을 연마하는 한편 폭넓은 레퍼토리를 확보하기 위한 연구를 벌행한다. 그리고 학사, 석사과정 학생들의 전공실기(피아노)를 효율적으로 지도할 수 있는 능력을 아울러 배양한다.

This course offers advanced individual instruction in the study and interpretation of musical literature on piano. Beyond that, it prepares students for leadership in research, teaching, the application of knowledge and professional practice.

653.590 전공실기(현악) 2-1-2
Major

여러 장르의 레퍼토리를 다룰 수 있는 능력을 배우며 개인 색소폰형식으로 이루어진다. 한 학기 한반 학생이 색소폰은 적도로 하기 일선실기팀이 있다.

Our String Department is composed of the most distinguished professors and teachers in Korea, all of who are outstanding soloists, chamber musicians, and orchestra players. Through private lessons, students will have an opportunity to master skills on their instruments and to expand their solo repertoire. Student will also prepare for a performance examination at the end of the semester in which they will present their newly learned repertoire in front of a jury.
품의 해석, 효과적인 표현을 위한 연주법 고찰, 각 연주자들의 개성의 조화 등 원활도가 높은 실내악 연주를 실현시킬 수 있는 여러 가지 가능성을 실습을 통하여 모색한다.

이 수업은 음악에서의 분석과 연구 자료 조사 능력을 개발시키는 것을 목표로 한다. 학생들은 다양한 스타일의 음악을 통해 훈련될 예정이다. 오아전 편곡학의 범위의 자료들은 그들을 고무시키는 한편, 가장 적합한 데이터를 선택하고 통합하기 위해서는 학생들의 비관적인 사고가 특히 요구된다. 때때로 학생들이 그들의 프로젝트를 수정하는 작업과 개선을 위한 토론으로 진행될 것이다.

This course aims at developing analytical and research skills in music. The students are to be disciplined through the exercise of writing in various styles. The study of a wide range of sources compiled by various research techniques will stimulate the mind while the selection and synthesis of appropriate data will require critical thinking. Each session will be devoted to revising the students’ projects and discussions for further improvements.

18세기에 현대에 이르기까지 다양한 작품을 고찰하면서 작곡 가와 연주가의 상호간의 역할 및 관계성을 이해하고, 문헌들을 바탕으로 각 작품의 시대적 양식과 작곡가의 고유한 양식을 분석하여 연주가로서 적절한 해석을 하는 데에 도움이 되도록 한다.

Repertoire from 18th century to present will be discussed with emphasis on the interaction between composer and performer. Appropriate analytic points of view will be used to interpret the inherent stylistic features for performance.

세계 음악에서 중부 유럽의 독일, 프랑스 음악이 유독 영향력의 중심이 되어 왔다. 오랜 전통을 가진 유럽 음악은 18세기 음악의 새로운 경향에서도 주도적이었는데, 상대적으로 훨씬 역사, 수동적인 위치에 있어 한편 미국음악는 독특적으로 음악을 추구하지 않고 높다고 새로운 시대에 맞춰서 여러 작품들이 존재하는 듯한 독자성을 획득할 수 있었다. 하지만 모든 작곡가들과 작곡가들은 서로 음악의 외면이 없는 투영력들과 나아가 동양음악, 아프리카음악 등 비주류의 문화를 접목하고 효과적인 음악적 학문의 염두를 보고자 한다.

In music history, particular emphasis has been placed on central Europe, specifically Germanic and French music. American composers, however, have not viewed European music as a model to be blindly followed. Although the new systems were initiated by European composers, as the century has progressed, the United States has acquired a particu-
This course is compulsory for students of the graduate program. Students must conduct a mid-presentation and an examination of their theses.

650.564A 한국음악학방법론 3-3-0
Methodology of Korean Traditional Musicology

한국 전통음악연구에 관한 연구방법론을 다각도로 분석, 검토하는 석사과정 과목이다. 한국전통음악연구에 사용된 역사 실증적 방법론, 분석적 방법론, 문화적적 방법론 등 다양한 연구방법을 사례별로 연구한다. 분석대상이 아닌 분석방법 자체를 연구주제로 다루며 이러한 연구능력 향상이 졸업논문 작성으로 연결되게 한다.

This course, for graduate students, is a subject about analyzing and examining themethodology for the study of Korean Traditional Music in different angles. It will cover various study methods such as historical positive methodology, analytical methodology, cultural contextual methodology. Major concern in this course is not on the analyzed objects but on the analyzing method itself so that improvement of researching ability can be led to better writing of graduation paper.

650.569 국악분석연구 3-3-0
Analysis of Korean Traditional Music

국악 작품의 내부적 체계와 원리를 파악하여, 알고 하는 연주, 역사성 있는 창작을 위한 바탕을 확보한다.

This course will provide theories on the internal organization of traditional Korean music so that students can play music properly with knowledge and obtain the historical background for creating their own music.

654.592 전공실기(국악기악) 2-1-2
Instrumental Major of Korean Music

국악과의 석사과정 기악 및 상악, 작곡전공 학생들이 4학기 동안 필수로 이수해야 하는 전공실기 과목이다. 개인지도 교수의 형태로 수업이 이루어진다. 4학기 동안 기악 및 상악 전공생들은 기악 실기시험을 보고, 작곡전공생들은 작품을 제출한다. 이 과정에서 이뤄진 연구결과의 일부는 최종학년에서의 논문연구로 이용된다.

This course is for graduate students (except music theory majors). Students therefore must take three courses during four semesters. Performers will take a final examinations and students majoring in musical composition will submit their own works. The results of the research conducted in the course will be partly connected to the presentation of the final thesis.

654.594 전공실기(국악성악) 2-1-2
Vocal Major of Korean Music

석사과정 국악성악 전공 학생들이 4학기 동안 필수로 이수해야 하는 전공실기 과목이다. 개인지도 교수의 형태로 수업이 이루어지며 각 학기말에는 기말시험을 보게 된다.

This course is a compulsory subject for graduate students majoring Korean traditional vocal music. Students should take three classes during four semesters. Performers should take a term examination.

654.595 전공실기(국악작곡) 2-1-2
Composition Major of Korean Music

석사과정 국악작곡 전공 학생들이 4학기 동안 필수로 이수해야 하는 전공실기 과목이다. 개인지도 교수의 형태로 수업이 이루어지며 각 학기말에는 작품을 제출하여야 한다.

This course is a compulsory subject for graduate students who major in composing of Korean music. Students should take three classes during four semesters and hand in newly composed works.

654.596A 산조창작연구 3-3-0
New Sanjo Studies

산조는 민속악의 한 갈래로 현재 가장 중요한 음악으로 연주되고 있다. 이러한 산조음악은 연주자의 즉흥연주와 창작으로 연주자 자신의 유효을 만들어 내는데 이러한 산조음악을 심도 있게 분석한 후 자신의 유효을 창작한다.

Sanjo represents just one branch of Korean folk music, but it is perhaps one of the most important performance genres in Korea today. Sanjo requires that the instrumentalist not only master the performance techniques necessary to adequately perform the music, but s/he must also recreate the music in the process of performance; thus, creating a new version or school of sanjo, also known as “ryu.” In this class, students will engage first in a thorough analysis of the genre before embarking on creating their own “ryu” of sanjo.

654.597 전공실기(국악지휘) 2-1-2
Orchestra Conducting Major of Korean Music

국악지휘전공 석사과정 대상으로 하는 전공실기로 4학기반부터 이수한다. 악보분석, 지휘법 등 현대 국악관현악 지휘에 필요한 요소를 정점적으로 연구한다. 각 전공생에 대해 개인지도로 이루어지는 실기 과목으로 다양한 악곡을 분석함으로써 각 악곡마다 필요한 개별적인 이해 항상을 통해 지휘자로서의 소양을 갖출 기회를 제공한다.

This course is a required subject for graduate students majoring conducting Korean Traditional Orchestra, who must take this course for four semesters. In form of private lessons for each students, classes will be focused on the necessary subjects for Korean Traditional music conducting such as analysis of contemporary music scores and conducting skills. By improving understanding for each scores. It will provide students opportunities to develop better character as conductor.
국악기악, 국악작곡, 국악성악, 국악이론 전공자들을 위한 수업으로 현대 창작국악계의 영향력있는 작곡가를 초빙하여 작품의 분석, 현대 작곡의 경향, 작곡가의 음악어법 등에 대해 탐구해봄으로써 현대 국악 창작의 본질적 이해에 대한 심전을 가질 수 있도록 한다.

이 과정은 국악기악의 전문성에 기초하여, 국악기악실기와 국악합주실습 등 국악기악의 분야를 중심으로 학습을 진행한다. 국악기악실기에는 국악기악과의 지도적 위치에서 전문 연주가로 활동하기에 부족함이 없는 연주기량을 연마하고, 국악합주실습은 합주의 형태로 이루어진 국악의 특성과 기능을 이해하고 합주에 적응하는 능력을 배양하는 과정이다.

국악기악실기는 전문 연주가로서 적합한 연주기량을 가진 학생을 대상으로 한다. 국악합주실습은 합주로 구성된 국악을 중심으로 학습을 진행한다. 국악기악실기에서는 국악기악의 전문성과 기능을 이해하고, 국악합주실습에서는 합주로 구성된 국악의 특성과 기능을 이해하고 합주에 적응하는 능력을 배양하는 과정이다.

국악기악실기에는 국악기악과의 지도적 위치에서 전문 연주가로 활동하기에 부족함이 없는 연주기량을 연마하고, 국악합주실습은 합주의 형태로 이루어진 국악의 특성과 기능을 이해하고 합주에 적응하는 능력을 배양하는 과정이다.

국악기악실기는 전문 연주가로서 적합한 연주기량을 가진 학생을 대상으로 한다. 국악합주실습은 합주의 형태로 구성된 국악을 중심으로 학습을 진행한다. 국악기악실기에서는 국악기악의 전문성과 기능을 이해하고, 국악합주실습에서는 합주로 구성된 국악의 특성과 기능을 이해하고 합주에 적응하는 능력을 배양하는 과정이다.
This graduate course will examine existing studies on folk music and reinvestigate the relevant problems. Existing theses will be reexamined from a critical viewpoint regarding the genres of Pansori and farmers’ music. Students’ ability to decipher musical texts will be increased through a comparison with original music. The possibility of systemizing theories will be discussed through a survey and an analysis of currently performed traditional Korean folk music.

This graduate course will cover traditional Korean music and its influence on Chinese and Japanese music. Focus will be on the relationships between traditional Korean and Japanese music.

This graduate course will examine the crucial connection between traditional Korean and Chinese music. The influence of traditional Chinese music on traditional Korean musical history was so enomorous that the latter used to be divided into Hyang-ak (“native music”) and Dang-ak (“Tang-Dynasty music”). First, the substance and history of traditional Chinese music will be considered to understand how traditional Korean music accepted traditional Chinese music. The influence of the social environment on traditional Korean and Chinese music will be treated. The influence of the social environment on traditional Korean music will be treated.
from the North and South Dynasty to the Goryeo Dynasty. The medieval characteristics of music and the differences between them and the medieval characteristics of politics and culture will be compared.

661.557 한국무속음악연구 3-3-0

Studies in Korean Shamanistic Music

이 강좌는 대학원생들을 위한 강좌이다. 한국민속음악 중에서 무속(巫俗)의식에 관한 연구모습을 보고, 그 의식의 순서에 따른 음악을 살펴보는 강의이다. 무속음악의 장단 및 박자를 중점적으로 다룬 것이다.

This graduate course will deal with shamanic ceremony and music. It will focus on the rhythms of shamanic music.

661.561 한국음악이론연구 3-3-0

Studies in Korean Music Theories

이 과목은 국악의 소재(material)대신 구조(structure)의 이론을 고찰하는 것으로, 장단(Jangdan), 선율, 형식을 실제 음악에 기하여 고찰하려 한다. (1) 장단(종류, 장단과 템포), (2) 선율(선율의 구성, 선율의 형태와 착축, 선율의 장식) (3) 형식(형식의 종류).

This course will provide theories on the structure of traditional Korean music instead of simply focusing on the materials of traditional Korean music. Rhythm, melody, and form will be considered. (1) Rhythm (types and tempo). (2) Melody (structure, magnification, bridgement, and ornaments of melodies). (3) Structure (types).

661.803 대학원논문연구 3-3-0

Reading and Research

기존의 한국음악학에 대한 논제를 객관적으로 비판할 수 있으며, 각 분야에 대한 심도 있는 논문을 읽을 수 있도록 기반 학문과의 유기적 관계를 파악하도록 해주며, 객관적인 시각으로 글을 쓸 수 있는 능력을 가질 수 있도록 한다.

This course will provide students with an ability to analyze established articles on traditional Korean music and to evaluate other related fields in order to write theses. Also, the course will provide an ability to write articles objectively.

M1803.000800 국악디지털카이브구축방법론 3-3-0

Korean Music Digital Archive Methodologies

본 강의는 현재 구축되어 있는 국악 아카이브의 현황을 물론이고 아카이브 구축을 위한 데이터 수집 방법론, 아카이브의 구축 방법론, 아카이브의 활용 방안 등을 제시하고자 한다.

In this lecture, I would like to discuss about Korean music related archives as a whole. We will present not only the current status of the Korean music archive, but also the data collection methodology for the archive construction, the archive construction methodology, and how to utilize the archive.

M2183.000300 현대국악공연연구 3-3-0

Contemporary Korean Music Performance Seminar

본 강의는 1950년대 이후 전개되는 공연으로서의 국악에 대해서 살펴본다. 국악관현악단과 같은 전통사회화는 다른 연대 단체의 상공 및 개인 연주자의 활약, 그리고 이들이 만들어낸 현대식 국악 공연에 대한 전반적인 이해가 이 강의의 목표이다.

In this lecture, we will look at Korean music as a performance that has been developed since the 1950s. The purpose of this lecture is to review the performance of individual musicians and the performances of contemporary traditional Korean music, which are different from the performances of traditional society’s.

서양음악학전공(Western Music Major)

661.510 음악일반연구방법론 3-3-0

Studies in Methodology of General Research on Music

전문적인 음악학 연구를 위한 소양을 기르는 한편, 역사적 연구, 철학적 연구, 실험적 연구, 양적, 질적 연구 등 여러 음악학 방법론에 대한 심도 깊은 이해를 목적으로 한다.

This course will provide intense training for professional researchers. Students will also examine various methodologies including historical, philosophical, quantitative, and qualitative research.
의 과 대 학
College of Medicine
The course is designed to guide students in gaining an introductory overview of medical education. Students will review and discuss the nature and characteristics of medical education, the history of it, various factors influencing it, and the future of it, and medical education is analyzed as science education and professional education. By critical appraisal of major medical education literature, students are expected to gain creative research capacity and more deep understanding of the nature and characteristics of medical education.

801.2302 의학교육학개론 3-3-0
Survey of Methodology in Medical Education

801.2303 의학교육방법론개관 3-3-0
Introduction to Medical Education

801.2304 실험동물학개론 3-3-0
Laboratory Animal Science

- 실험동물의학의 역사와 동물실험의 정책, 범규
- 동물실험의 계획과 동물학적 필요
- 주요 실험동물의 화학적, 의학적 특성에 대한 이해
- 실험동물에서의 질병과 그 영향
- 실험동물의 Microbiological Control
- 실험동물의 마취, 성장, 진풍, 약품
- 실험기술
- 실험동물의 사용 관련한 Biohazard Control
- Xenotransplantation and Xenozoonosis
- 실험동물의 Genetic Monitoring과 형질전환동물

Research involving laboratory animal is an important factor in the advancement of the medical, veterinary, and biological sciences. All drugs prescribed for humans or animals have been developed and tested in laboratory animals; new surgical techniques and materials are developed and tested in laboratory animals before they are accepted for humans or domestic animals. A specific course in laboratory animal science is now required for scientists who wish to perform experiments on animals. So, this course is consisted with followings:
- Historical Perspectives of Laboratory Animal Medicine,
- Experimental Design and Statistical Analysis
- Biology of Laboratory Animals,
- Impact of the Biotic and Abiotic Environment on Animal Experiments
- Microbiological Control and Health Status,
- Laboratory Animal Analgesia, Anesthesia, and Euthanasia
- Basic Principles and Procedures of Nonsurgical Method,
- Control of Biohazards Associated with the Use of Experimental Animals
- Xenotransplantation and Xenozoonosis,
- Laboratory Animal Genetics and Genetic Quality Control

801.2305 질환모델동물 3-3-0
Animal Models

-새로이 개발되는 신약제, 의약품, 세포치료제, 조직공학재료, 바이오작업 등에 대한 효능 평가를 위하여 각종 질환모델동물에 대한 기술과 지식이 절대적으로 필요하다. 이에 “질환모델동물”이라는 강좌를 신설하고자 하며, 다음과 같은 강좌로 구성하고자 한다.
- 질환모델동물, - 원리와 문제점, - 독성연구에서 모델동물
- 생식독성연구에서 모델동물, - 약물요법 모델동물, - 실험과 로기 모델동물
- 실험결과 모델동물, - 소화기계 모델동물, - 이차 생리학에서 모델동물
- 신장 연구에서 모델동물, - 당뇨 모델동물
- 형질전환동물 연구에서 모델동물, - 생물학적 모델동물, - 생물학적 모델동물, - 형질전환동물, - 생물학적 모델동물, - 형질전환 동물

This lecture is dedicated to the use of laboratory animals as models for humans. This lecture explains in great detail the comparative considerations underlying the choice of animal species and strains in different research disciplines. So, this lecture is consisted with followings:
- Animal Models in Reproductive Toxicology, Animal Models for the study of Allergy
- Animal Models for Cardiovascular Research, Animal Models in Gastroenterology
- Animal Models in Fetal Physiology, Animal Models in Nephrology
- Diabetic Animal Models, Animal Models in Neuroscience
- Animal Models in Pain Research
- Animal Models in Microbiological Infection, Animal Models in Cancer Research
801.2306 Toxicological Research for New Drug Development

Toxicology is the study of the adverse effects of chemicals on living organisms. The toxicologist is specially trained to examine these adverse effects including their cellular, biochemical, and molecular mechanism of action. Toxicology has a role to play in identifying these undesirable chemicals so that appropriate control of new chemicals can be instituted. So, this lecture is consisted with the followings;

- Acute, Subacute, Chronic Toxicity,
- Dermal Irritation and Sensitization,
- Ocular Toxicology,
- Inhalation Toxicology,
- Neutotoxicology,
- Immunotoxicity,
- Renal Toxicology,
- Toxicokinetics of Xenobiotics,
- Risk Assessment

801.2601 Evidence Based Healthcare

Evidence Based Healthcare

801.5027 의학자산의 유형별 보호 및 활용

Medical Statistics

801.5026 Prosecution and Enforcement of Biomedical Patents

Bio-Medical Technology Law and Policy

This course will introduce basic statistical methods, study statistical concepts frequently used in health research, and apply statistical methods to actual data through statistical package programs such as SAS and SPSS.
help student innovate and develop safe and effective bio-medical products or services, by applying their knowledge and skills acquired during graduate degree programs.

801.503 실형기법 1 3-3-0

**Experimental Techniques 1**

This course will provide the basic experimental methodologies for bench work such as centrifugation, chromatography, electrophoresis, immunoassay, spectrophotometry, and morphological tools in terms of their principles and mechanisms of operation. Its objective is to prepare students for elementary bench work.

801.803 대학원논문연구 3-3-0

**Reading and Research**

Đào tạo, nghiên cứu và viết luận văn cho tiến sĩ phải có khả năng ứng dụng và phát triển các kỹ thuật và kiến thức của mình để giải quyết các vấn đề trong nghiên cứu khoa học. Học sinh nên học cách lập kế hoạch nghiên cứu và xây dựng phương pháp giải quyết vấn đề. Công việc của giáo viên là hỗ trợ học sinh trong việc lập kế hoạch và thực hiện nghiên cứu.

801.862 논문작성법 3-2-2

**Writing Scientific Papers**

Education of graduate students is a training process of academic concept building by research and publication. Publication is a final goal of research by which researchers contribute in science. It is essential to train students how to write scientific papers for better achievement. This subject will lecture concept of papers and science, type, styles and formats, contents, what and how to write each part, principles of writing each part. submission of manuscripts to journals, and world indexing systems. Especially students are to be trained for writing English papers.

801.505 자료처리론 3-3-0

**Computer Assisted Medical Data Processing**

Đây là một khóa học về xử lý dữ liệu y tế thông qua máy tính. Nội dung bao gồm kỹ thuật xử lý dữ liệu, phân tích dữ liệu, và cách sử dụng máy tính để hỗ trợ công việc nghiên cứu và điều trị bệnh. Học sinh sẽ học cách sử dụng phần mềm thông qua thực hành tự làm.

3D Modelling in Structure

3D Modelling in Structure

Disaster Medicine

Disaster medicine includes disaster epidemiology and prevention, disaster medical service control and management, disaster psychiatry, disaster emergency medicine, chemical/biological/radiological, and nuclear disaster medicine, and disaster bioengineering. This class aims to let students know the various aspects of disaster medicine, including disaster epidemiology and prevention, disaster medical service control and management, disaster psychiatry, disaster emergency medicine, chemical/biological/radiological, and nuclear disaster medicine, and disaster bioengineering.

1) Disaster epidemiology and prevention
2) Disaster Medical Services Control and Management
3) Disaster Psychiatry
4) Disaster Emergency Medicine
5) Chemical/ Biological/ Radiologic and Nuclear Disaster Medicine
6) Disaster Bioengineering

 seja의학의학

재난의학은 재난의학 및 예방, 재난의료상황관리, 재난정신의학, 재난응급의학, 화학/생물학/방사능학 특수재난의학, 재난의료공학으로 구성되고 재난의학분야에 대한 기초지식과 기술을 학습하고 이를 응용하여 기초 및 임상 분야의 통합적 융합적 연구에 활용할 수 있는 역량을 개발함

1) 재난의학 및 예방 - 재난환자의 발생 원인, 역학적 특성, 위험요인조사 등을 기반으로 예방관리 계획을 수립하기 위한 학문
2) 재난의료상황관리 - 재난발생에 대한 의학적 수요를 측정하고, 이에 대한 자원관리(인력, 시설, 장비 등)을 관리하며, 재난의료상황에 대한 환경적, 건강 및 의료를 통한 적정재난의료를 제공하기 위한 학문
3) 재난응급의학 - 재난의약 현장 및 병원단계에서 환자에 중도 분류, 이송, 응급처치를 통하여 대규모 환자에 대한 최선의 치료를 제공하기 위한 학문
4) 재난정신의학 - 재난으로 인한 정신적, 심리적 왜곡을 분석하고, 재난정신의학적 개입을 통한 정신적 후유증을 최소화하고 회복할 수 있게 하는 학문
5) 화학/생물학/방사능학 특수재난의학 - 특수물질에 의하여 발생한 재난환자에 대한 진단, 치료, 개인보호, 오염물질에 대한 재해제독에 관한 학문
6) 재난의료공학 - 재난의료상황에 대처할 수 있는 의료공학적 개입과 기술 분야로서 개인보호 및 재해제독과 관련된 의료공학

Disaster medicine includes disaster epidemiology and prevention, disaster medical service control and management, disaster psychiatry, disaster emergency medicine, chemical/biological/radiological, and nuclear disaster medicine, and disaster bioengineering. This class aims to let students know the various aspects of disaster medicine, including disaster epidemiology and prevention, disaster medical service control and management, disaster psychiatry, disaster emergency medicine, chemical/biological/radiological, and nuclear disaster medicine, and disaster bioengineering.

1) Disaster epidemiology and prevention
2) Disaster Medical Services Control and Management
3) Disaster Psychiatry
4) Disaster Emergency Medicine
5) Chemical/ Biological/ Radiologic and Nuclear Disaster Medicine
6) Disaster Bioengineering

해부학전공(Anatomy Major)

**해부학전공(Anatomy Major)**

801.2603 구조물들의 삼차원재구성 3-3-0

**3D Modelling in Structure**

구조물의 삼차원 재구성을 위해 컴퓨터가 이용되는데 삼차원 재구성의 원리와 각종기법, 각종장비 등을 소개한다.

This course will introduce a 3D modelling technique by using computer. The principle of 3D modelling, application
techniques, hardware and software will be discussed.

801.2607  생물리학연구의 최신지견 3-3-0
Recent Progress in Paleopathology

Studying the recent progress in paleopathology, based upon the morphological or biological findings in ancient bone.

801.2608  의학과(Dept. of Medicine)
801.2610  NK세포면역학 3-3-0
NK Cell Immunology

- NK세포의 항종양/항바이러스 작용에 대해서 학습함
- NK세포 활성에 기반한 최근 항종양 요법에 대해서 학습함
- NKDC/IKDC의 항종양/항바이러스 작용에 대해서 학습함
- Studying of anti-tumor and anti-viral function of NK cell
- Studying of recent cancer therapy based on NK cell activation
- Studying of anti-tumor and anti-viral function of NKDC/IKDC

801.2611  면역조직학특강 3-3-0
Topics in Histologic Aspect of Immune System

- 인체 면역계에 대하여 학습함
- 인체 면역계를 구성하는 면역장기들에 대해서 학습함
- 면역장기를 구성하는 세포들에 대해서 학습함
- Studying of immune system in human body
- Studying of immune organs in immune system
- Studying of cellular components in immune organ

801.2612  종양조직학특강 3-3-0
Topics in Tumor Histology

- 외부 도는 내부의 다양한 종양 유발 인자들에 대하여 알아보고 이들 통한 종양의 발생기전에 대해서 학습함
- 외과적으로 증상의 진행에 따른 중앙 및 주변 정상 조직과 전이 된 종양 조직 주변에의 변화와 관련된 내용을 학습하고자 함
- Studying of tumor development process by various kinds of external or internal oncogenic factors
- Studying of histologic changing at original site of tumor, normal tissues around tumor, and metastatic tumor site

801.798  조직학세미나 3-3-0
Seminar in Histology

조직학 분야의 최신 연구보고와 초청 인사에 대한 특수 주제와 관련된 내용을 학습하고자 함.

In this course, students will prepare for weekly seminars through readings of the latest academic literature and occasional discussions on topics in histology with the seminar speakers. These discussions will be facilitated by the members of the Committee.

801.800  해부학특강(몸통) 3-1-4
Advanced Anatomy of the Trunk

This course is designed to provide advanced understanding of the anatomical structure and histology of the central nervous system (CNS). Thorough comprehension of the complex anatomy and histology of the CNS is fundamental to perform research in the field of neuroscience. Also the necessity of lectures on anatomy and histology of the CNS is increasing with accumulation of new knowledge due to the advancement of molecular biology and genetics. Through this course the students are expected to understand in-depth,
updated anatomy and histology of CNS.

**M2934.000100**  
**Understanding Mesenchymal Stem Cells**

Recentl, the use of mesenchymal stem cells such as adipose tissue-derived and umbilical cord derived cells have been actively explored in the treatment of immune diseases and in regenerative medicine. In this course, general biological characteristics as well as immunological properties of mesenchymal stem cells will be discussed, and the current studies on the clinical use of mesenchymal stem cells will be approached.

**M2934.000200**  
**Principles of Bioinformatics for Anatomy and Cell Biology**

The rapidly growing need to acquire knowledge on bioinformatics is not an exception for researchers of anatomy and cell biology. However, bioinformatics covers a wide range of research fields, making it difficult for researchers to efficiently select and learn what they actually need. In this course, the students will therefore participate in the lectures and practice activities in bioinformatics, specially designed for research works of anatomy and cell biology.

**Pathology of the Alimentary Tract**

This course provides the basic concepts of diseases of the digestive tract, and the disease of this portion is usually dismal for the patients. Because the clinical findings are usually non-specific, the microscopic features are the most critical for the diagnosis. This course provides the in-depth understanding of the morphologic changes and differential diagnostic points of the pancreas and biliary tracts in various diseases. This course also provides current molecular biologic methods for the diagnosis, and correlation between various morphologic findings and patients' prognosis. The final goal of this course is the strengthening of the ability to perform the basic research on pathology.
801.569 Pathology of the Liver

This course will cover the pathology of the liver, especially of gross and microscopic abnormalities, and will help students to strengthen their application ability in clinical practice, prevention, and research on renal diseases.

801.572 Pathology of the Kidney

This course will focus on pathology training of the hematopoietic system and the general tumor pathology will be discussed.

801.575 Neuropathology

This course provides the basic concepts of endocrine pathology. It will help students to strengthen the ability to perform the basic research and to develop their application ability in clinical practice in the field of endocrine pathology. Its aims are: (1) To understand the pathogenesis of autoimmune and proliferative diseases of the thyroid; (2) to understand the histopathologic and molecular genetic characteristics of thyroid tumors; and (3) to understand the pathologic features of diseases of the parathyroid and adrenal gland.

801.576 Pediatric Pathology

This course will cover the pathology of embryo, fetus, placenta, neonatal, and childhood diseases.

M1923.000600 Pathology of Hemato-Oncology

This course will focus on pathology training of the hema-tolymphoid organs. Students are encouraged to learn not only the basic histomorphology /functions of these organs, but also the various laboratory techniques required for the accurate assessment of these tumors. Application and interpretation of immunohistochemistry, FISH and other molecular studies will be discussed.

M1923.000700 Pathology of Breast

This course will help students majoring in pathology to understand the diseases of the breasts, especially benign and malignant tumors. It will provide research skills using diseased specimens and an ability of correlating clinical presentations and pathologic findings.

M1923.001900 Endocrine Pathology

This course provides the basic knowledge of neuroanatomy and neurohistology. The pathology of various neurologic diseases, especially of gross and microscopic abnormalities, will be introduced. The types of reactions, mechanisms, and mor-phologic changes against the injuries of the central nervous system and the general tumor pathology will be discussed.

M1923.002000 Molecular Pathology

This course will cover the pathology of embryonic, fetus, placenta, neonatal, and childhood diseases.
전과 분자병리의 관계를 이해한다. 둘째, 여러 분자병리 검사들의 기본 원리를 훈련한다. 셋째, 최신 분자병리 검사법 및 그 임상적 의미를 이해한다.

This course provides an understanding of the concept of molecular pathology and its techniques with the acquisition of up-to-date knowledge about molecular pathology. Its aims are: 1) To understand the concept of molecular pathology and its relationship with tumor pathogenesis; 2) to understand the principles of diverse molecular tests; and 3) to understand up-to-date molecular tests and their clinical implications.

비뇨생식기계에 해당하는 신장, 요관, 방광, 요로, 전립선, 고환 및 부고환 등에서 발생하는 각종 질환의 현미경 소견, 입상양상을 및 예후에 대해 숙지한다. 비뇨기계에 발생하는 종양의 발생기전을 이해하고, 감별진단 및 예후예측을 위한 각종 병리학적 검사기법의 원리와 해석을 훈련한다.

This course provides an understanding of the morphologic changes and clinical behavior of diseases in the genitourinary tract including kidney, ureter, urinary bladder, urethra, prostate, testis and epididymis. The topics cover the pathogenic mechanisms of the tumors in the genitourinary tract and the application of various immunohistochemical and molecular methods for the differential diagnosis and predicting the prognosis.

위병리학은 위의 정상 조직과 기능 및 이를 바탕으로 위에서 발생하는 다양한 질환의 병리학적 특성을 이해하고자 하며, 궁극적으로는 위암 환자 건강 관리 및 치료에 활용할 수 있는 최신 연구지견을 정리하고 이해하여 이를 위암 진단 및 치료에 활용하고자 한다.

This course is designed to introduce the knowledge of the normal histology and function, and the clinicopathologic features of gastric diseases. It will help students to develop their application ability in clinical practice and research on gastric diseases. The course’s aims are: (1) To understand gastric histology, physiology, and function; (2) to understand the clinicopathologic and molecular characteristics of gastritis; (3) to understand the morphologic classification of gastric cancer and the roles of immunohistochemistry and molecular pathology in the diagnosis and treatment of gastric cancer patients.

소화기 염증 질환에서 암성 범위 및 발생 기전을 이해하고, 진단병리학적 측면에서 간별 진단을 해석하며, 감염과 관련된 증상의 발생 기전을 연구한다. 구체적인 학습목표는 다음과 같다. 첫째, 위장관 염증 질환을 알고리즘화하여 해석할 수 있다. 둘째, 간의 염증성 질환의 병리학적 소견을 구별할 수 있다. 셋째, 염증성 질환의 임상 및 병리학적 소견을 이해할 수 있다. 넷째, 멜리코박터 과일로리 감염 및 엡스턴-바리스 감염과 관련된 위암 발생의 특성을 이해한다.

This course is designed for graduate students who have a knowledge about the basic pharmacology. The course will include contemporary research concepts, experimental approaches in investigative pharmacology to understand principles of action of drugs on systems.

기초약리학 세미나 1과 2은 기초약리학과정에 대한 지식을 가진 석사과정 대학원생들에 대한, 약리학 전반에 관한 연구의 흐름과 최신지견을 소개하고, 발표와 토론을 통해 최신 연구방법론을 이해하여, 신체 내 약물작용의 원리를 총체적으로 이해하고자 한다.

The course is designed to introduce the knowledge of the state-of-art pharmacological research to graduate students. The course will include the basic principles of pharmacology and issues of latest biotechnical approaches to understand the basic pharmacology.
연구에 대한 지식과 기술을 습득하기 위해 기초약리학 전반에 관한 최신 연구진을 정리하고 이해하여, 발표와 토론을 통해 기초약리학에 대한 최신 연구동향을 이해하고자 한다.

The course is designed to introduce the knowledge of the state-of-art pharmacological research to graduate students. The course will include the basic principles of pharmacology and issues of latest biotechnical approaches to understand the basic pharmacology.

801.589 약상호작용 3-3-0
Drug Interaction

약 작용의 원리, 약물 작용기전 약물 상호작용 및 임상약리학적 지식을 기본으로 하여 인체 각 질환에 대한 적절한 약물선택을 기하도록 하며, 약물 해학 바이오임파이더 심화시각을 확립하고, 약물의 임상적 평가 및 임상약동학 실험 등에 대한 임상약리학 실험기법을 익히도록 한다.

801.591 임상약리학 3-2-2
Clinical Pharmacology

801.847 약리반응계량학 3-3-0
Pharmacometrics

Antibiotic resistance, drug resistance, and antimicrobial resistance, which is the main topic of the course, will be covered. The course will also address the mechanisms of drug resistance and the development of new antibiotics.

미생물학전공(Microbiology Major)

801.2206 레트로바이러스학개론 3-3-0
Introduction to Retrovirology

레트로바이러스학은 자신이 일반 동물세포에 없는 역전사효소를 갖고 세포에 침투하여 바이러스 유전자를 세포의 염색체에 삽입하는 특이한 방식으로 증식한다. 이 과정을 거치기 때문에 세포의 염색체에 삽입된 유전자를 바이러스의 DNA로 전환시킬 수 있다. 본 과목에서는 레트로바이러스의 구조 패턴과 증식 기전에 대한 내용과 함께 약물치료의 기반을 마련하고, 레트로바이러스에 대한 이해와 반응성을 학습한다.

801.2207 면역반응개론 3-3-0
Introduction to Immunological Tolerance

면역반응은 낮은 항원에 대해서 반응을 나타내지 않는 상태를 의미한다. 이는 면역반응의 방식, 장기/조직/세포의 성질 등이 개선된 면역반응 기전의 이해를 가능하게 한다. 본 과목에서는 면역반응의 기전에 대해 살펴보고 T 세포 및 B 세포의 면역반응과 면역반응 유도에 관여하는 innate immune system에 대해서 알아본다.

면역반응은 바이러스, 박테리아, 원생동물, 물질, 악성세포 등에 의해 일어날 수 있으며, 이는 면역반응의 기본기전에 대한 이해가 필요하다. 본 과목에서는 면역반응의 기전과 기능에 대해 살펴보고, 면역반응과 관련된 여러 과학자들의 연구를 살펴본다.

801.2208 이식면역학실험 3-0-6
Transplant Immunology Lab.

Transplant Immunology Lab.

Understanding the processes of immune rejection or tolerance induction after organ transplantation requires in vivo experimental approach using animal models. In this experimental course, the students will learn fundamental skills for organ/tissue transplantation in animal model and learn the in vivo immune responses in transplanted host. The contents and goal of this course will include:

(1) to perform thymectomy and learn to analyze the phenotype of the thymocytes
(2) to isolate and cultivate bone marrow cells from mouse femur
(3) to isolate mononuclear cells from peripheral blood, lymphnode and spleen
(4) to perform allogeneic skin graft and evaluate the graft acceptance or rejection

801.2209 이식면역학최신지견 3-3-0
Current Topics in Transplantation Immunology

이식면역학은 biotechnology 영역의 발전과 함께 빠른 속도로 발전하고 있다. 본 과목에서는 이식면역학분야의 최신동향을 학습한다.
The evaluation of the students will include a vide current information not readily available in textbooks and articles. The majority of classroom teaching will occur in small group and include tutorial and journal review that provides a new scientific approach for diagnosis, treatment and vaccine trial against infectious diseases.

Lecture will be kept to a minimum: in general, several general principles will guide the teaching in each portion of the course. The objective of this course is to understand a current issue in transplantation immunology and they will be given comprehensive and up-to-date information on related topics. Each session will consist of presentations and discussions on the assigned reading materials. Following topics will be included in this course; (1) T cell APC(antigen presenting cell) interactions, (2) Regulation by dendritic cells and T cells, (3) T and B cell memory, (4) Innate immunity, NK cells and innate immune system. (3) Understanding activation mechanism of defense and tissue remodeling by adaptive immune system. (4) Understanding tissue remodeling and defense by adaptive immune system. (5) Understanding regulatory mechanism of adaptive immune system.

The objective of this course is to understand a current issue in molecular and cellular aspects of microbial pathogenesis and to provide a new scientific approach for diagnosis, treatment and vaccine trial against infectious diseases. This course is designed to provide an understanding of the underlying molecular and genetic mechanisms in bacteria-host interaction, which is related to peculiar bacterial virulence factors.

This course covers recent advances in the molecular basis of bacterial pathogenesis, which has been established with the interdisciplinary cooperation of cell biology, bacteriology, and immunology, through lectures and seminars. Approaches and concepts from all these areas will be used to answer the basic question of how bacteria establish an infection and the practical problems of designing safe and effective vaccines.

This course provides an opportunity to study a variety of pathologic phenomena that arise as a consequence of immunologic reactions. Aberrant, excessive, or inappropriate immunologic responses can lead to allergies, autoimmunity, and various kinds of immune complex-induced damages. Another aspect of immunologic diseases involves intrinsic defects in the immune system. Rather than attempt an encyclopedic cataloging of every disease entity, the course will focus on our current understanding of the underlying immunopathological mechanisms. With this mechanism-oriented approach, students will have a more in-depth exposure to these concepts.
본 논문의 발표와 토의를 통해 심도 있는 최신의 정보를 접할 기회가 제공된다.

The objective of this course is to introduce current issues in immunology. It will give comprehensive and up-to-date information on related topics. Each 2-hour session will consist of presentations and discussions on the assigned reading materials.

801.617 종양바이러스학 3-3-0
Oncogenic Viruses
암(종양)을 유발하는 바이러스의 특성과 그 증식과정, 발암과정에 관련된 유전자 등에 관하여 학습한다.

801.687 세균학최신토픽 3-3-0
Current Topics in Bacteriology
세균학분야에 있어 관심거리가 되는 특정 토픽 등을 대상으로 국내외의 연구동향을 파악하게 할 수 있는 것으로서 새로운 또는 다시 문제가 될 수 있는 미생물질환, 그리고 유전자 수준에서 심층적으로 연구되고 있는 특정 모델 등을 대상으로 학습한다.

801.688 리켓치아학 3-3-0
Rickettssiology
강의 및 세미나를 통해 리켓치아 질환의 병리기전에 대한 최신 지견을 학습한다. 이 강좌에서는 특히 리켓치아의 구조와 생물학적 특성, 분자 발현, 병리기전 및 면역응답을 중심으로 강의가 이루어지며, 학생들은 주어진 논문을 중심으로 발표 및 토론을 통해 최신 지견을 학습할 기회를 제공받는다.

801.689 분자면역학 3-3-0
Molecular Immunology
면역계를 구성하는 분자의 구조와 기능, 특히 B 림프구와 T 림프구의 핵심 특성, 림프구 간의 영향 및 유전자 발현 및 세포막 품질의 관리, 세포질 및 세포질막에 관하여 학습한다. 이 과정은 다양한 토의를 포함시킴으로써, 주요 유전자 T와 B 림프구의 핵심 유전자 수용체, 면역글로불린, 주 조직적합성 분자, 세포 상호작용에 관하여의 부착 분자와 세토바인 및 분자 수준에서의 면역반응의 조절 기전 등이다.

801.690 면역체계기능 3-3-0
Biological Function of Immune System
면역계의 항체반응, 세포반응 및 세포상호반응에 대한 생물학적 기능에 대한 최신지견을 학습한다.

This course aims at an understanding of the latest topics in domestic and international research on bacteriology, especially on newly emerging diseases and extensively studied disease models.

801.691 면역생물학실험 3-0-6
Laboratory in Immunobiology
면역계의 항체반응, 세포반응 및 세포상호반응에 대한 생물학적인 측면에서 실험을 통해 학습한다.

801.692 바이러스학총론 3-3-0
General Virology
바이러스의 일반적인 특성인 바이러스의 구조, 화학적 성분, 증식, 분자유전학, 숙주와 바이러스간의 상호관계 및 면역반응에 대해 학습한다.

In this course, students will study the general properties of viruses including their structure, chemical composition, replication, genetics, and host-virus relationship and its pathogenesis.

801.693 바이러스병인론개요 3-3-0
Concepts in Viral Pathogenesis
바이러스가 질병을 일으키는 기본 기전을 역학적 관점, 숙주 및 바이러스간의 세포주변에서의 관점 및 분자생물학적 관점에서 학습한다.

In this course, students will study viral pathogenic mechanisms such as host-virus interaction through an epidemiological and molecular biological analysis.

801.694 바이러스의병원성실험 3-0-6
Laboratory in Pathogenicity of Viruses
바이러스가 질병을 일으키는 기본 기전을 숙주 및 바이러스간의 세포주변에서의 관점 및 분자생물학적 관점에서 학습을 통해 이해한다.

In this course, students will study viral pathogenic mechanisms, especially the nature of host-virus interaction through a molecular biological experimental approach.

M2939.000100 법의미생물학 3-3-0
Forensic Microbiology
법의미생물학은 바이오테러리즘 급속도로 우리 사회에 접근해오
using large automated databases. The choice of study design, and the case-crossover design, and approaches for conducting pharmacoepidemiology research will be compared and reviewed. This approach will also provide insights into various study designs and methods in pharmacoepidemiologic research.

### Topics in Design of Pharmacoepidemiology Research

Diverse study designs and methods in pharmacoepidemiologic research will be compared and reviewed. This advanced course will provide students with the skills and knowledge to select optimum designs in initial step and to conduct pharmacoepidemiologic research effectively. Students will learn novel approaches to pharmacoepidemiology study designs such as the nested case-control design, the case-cohort design, and the case-crossover design, and approaches using large automated databases.

### Environment and Chronic Disease

The impact of the changing natural environment and lifestyle on modern human beings and their migration will be reviewed in the aspects of human evolution and adaptation to changing natural environment and lifestyle. Students will learn the health effect of climate change, sun light, exercise and diet. In addition, the widespread use of chemicals in modern times will be reviewed focusing on increasing number of metabolic syndrome and hormone disturbance as well as environmental diseases. Particularly, basic principle of gene and environmental interaction will be discussed.

#### 801.2816 Occupational and Environmental Epidemiology

Occupational and Environmental Epidemiology

This course focuses on principles and methodology in evidence-based medicine. Students will learn various study designs and methods in pharmacoepidemiologic research will be compared and reviewed. This advanced course will provide students with the skills and knowledge to select optimum designs in initial step and to conduct pharmacoepidemiologic research effectively. Students will learn novel approaches to pharmacoepidemiology study designs such as the nested case-control design, the case-cohort design, and the case-crossover design, and approaches using large automated databases.

#### 801.2814A Environmental and Chronic Disease

The impact of the changing natural environment and lifestyle on modern human beings and their migration will be reviewed in the aspects of human evolution and adaptation to changing natural environment and lifestyle. Students will learn the health effect of climate change, sun light, exercise and diet. In addition, the widespread use of chemicals in modern times will be reviewed focusing on increasing number of metabolic syndrome and hormone disturbance as well as environmental diseases. Particularly, basic principle of gene and environmental interaction will be discussed.

#### 801.5004 Genomic Epidemiology

Genomic Epidemiology

This course focuses on principles and methodology in evidence-based medicine (EBM) and its application to preventive medical service. Lectures will handle the concept of EBM and various level of evidences from medical research. Critical appraisal of medical research, systematic review and meta-analysis, development of clinical practice guideline and outcomes research will be introduced. Application of EBM to preventive medical service will be shown in lectures following topics; Health risk appraisal, Screening tests and programs and their appropriate organization. Through this program, Students will assess the current national preventive service and health promotion program based on the best available evidence.
의 중심이 된다. 다음의 내용이 본 교과목에서 다루어진다: 금연
및 질주를 위한 상담, 생체지표를 활용한 질병발병에 대한 평가, 친
식, 감염증, 암, 심혈관질환에 대한 예방의료서비스, 여행자 역학
과 예방의료 서비스에 관한 내용들을 다룬다.

Specific clinical application beyond the scope of the lecture
“Introduction to evidence based clinical preventive medicine”
will be covered in this lecture. Risk assessment and preventive
intervention for chronic illnesses such as cancers, cardio-
vascular conditions, infections, effectiveness of smoking ces-
sation and utilization of intervention skills, Utilization of bio-
markers to predict progression of disease, travel medicine, etc.

081.709 만성병역학특론 3-3-0

Epidemiology of Chronic Illness

근대에 들어서 만성퇴행성 질환이 사망원인의 대 부분을 차지하
게 되었으며, 유병기간이 길어 사회적으로도 경제적,인 부담으로
작용하게 되었다. 따라서, 각종 만성병의 역학연구를 통해 그 원인
과 예방방법을 진단하고자 한다.

This course will cover epidemiological and behavioral per-
spectives on chronic diseases and the assessment and mod-
ification of the related risk factors. The potential for disease
prevention will be diagnosed in the context of epidemio-
logical evidences.

081.711 압력학자료처리론 3-3-0

Analytic Methods in Cancer Epidemiology

환자-대조군 연구 등을 통하여 얻어진 실제의 압력학 자료를 효
과적이고 정확하게 처리하는 방법론을 익힌다. 최저분석, 혼란변수의
보정, 최적의 통계모델 설정 등을 적용 실습하도록 한다.

This course will cover advanced statistical methods through
the analysis of case-control study data. Topics will cover cat-
ergorical data analysis, logistic regression, adjustment of con-
founding variables, and selection of statistical models.

081.815 환경독성학 3-3-0

Environmental Toxicology

환경 유해자의 독성학적 성질을 점검하고, 채내 흡수, 분포, 대사 및 배설 등의 과정을 파악하며, 독물실험을 통한 독성학 결
과, 액체인의 방법론을 적용한 결과, 환경 위험도 평가를 통한 결
과 등을 비교한다.

In this course, students will learn the toxicological charac-
teristics, absorption, distribution, metabolism, and secretion of
environmental risk factors and the results of animal experi-
ments.

This course will deal with public health problems caused by addiction, in-
toxication, poisoning and provide a deeper understanding of
public health to student planning to study medical science
and public health.

M1923.000300 에너지대사의 측정과 건강영향평가 3-3-0

Measurement of Energy Balance and Health Effect

에너지균형(energy balance)의 3대 구성요소인 영양 섭취, 산체
활동, 비만도의 개념을 이해하고 액학연구에서 사용할 수 있는 측
정 도구들을 소개한다. 이론 강의와 더불어 영양학과 신체활동
연구 분야의 연구자 초청 세미나와 전공별 연구 현황에 대한 강
의 발표를 통해 진행한다.

Understand the definition and available measurement tools
for three components of energy balance (dietary intake, phys-
ical activity, and obesity), and their roles in human health.

M1923.000400 기술역학자료분석 3-3-0

Analysis of Descriptive Epidemiologic
Data

기술역학자료에 활용할 수 있는 자료원을 파악하고 사망률, 발
생률, 유병률을 표준화, 정점성 분석, age-period-cohort modeling
등의 방법을 사용하여 자료를 해석하고 가설을 검정하는 과정을
학습한다. 기여위험도 및 기여위험도 산출을 위한 관련성 자료의
매타분석 방법론을 학습한다.

The course aims to apply descriptive epidemiologic meth-
ods such as calculation of rates, standardization of rates,
trend analysis, age-period-cohort modeling by using pub-
dic-accessible database as well as data collected for research
purpose. Students learn how to interpretate and draw hypo-
thesis using descriptive epidemiologic data. The course also
Introduction to Cancer Epidemiology

The goal of this course is to integrate basic principles of biology and epidemiologic characteristics of cancer. The course covers descriptive epidemiologic data, risk factors, and strategies for primary and secondary prevention for major cancer sites in Korean population.

Cohort Studies on Cancer

This course provides the basic concepts of prospective cohort study on cancer epidemiology and prevention. It will help students to understand the research design and methods of prospective cohort study on cancer, to strength the ability to perform the epidemiologic research on risk factors, protective factors, and genetic susceptibility, and to develop their application ability in practice in the field of cancer prevention and management. Its aims are: (1) To understand the epidemiologic characteristics of cancer occurrence; (2) to understand the risk factors, the protective factors, genetic characteristics of common cancers; and (3) to understand the preventive measures of cancer.

Cancer Epidemiology and Prevention

This course provides the basic concepts of cancer epidemiology and prevention. It will help students to understand the magnitude of the cancer burden, to strength the ability to perform the epidemiologic research on risk factors, protective factors, and genetic susceptibility, and to develop their application ability in practice in the field of cancer prevention and management. Its aims are: (1) To understand the epidemiologic characteristics of cancer occurrence; (2) to understand the risk factors, the protective factors, genetic characteristics of common cancers; and (3) to understand the preventive measures of cancer.
The purpose of this subject is introduction of latest trends on parasitology research.

801.2819 토양매개성연충과 감염증 3-2-2

Soil Mediated Helminths and Its Infection

The purpose of this subject is study on the characteristics of soil mediated helminths.

801.2821 기회감염성기생충과 감염증 3-2-2

Opportunistic Parasitic Diseases

The purpose of this subject is study on the characteristics of opportunistic parasitic diseases. In addition, case studies and environmental features will be discussed.

801.2822 말라리아학 3-2-2

Malaria

The purpose of this subject is to acquire methods dealing with a number of parasites and their products and to understand how Parasitology can be linked to other fields.

801.2823 포자충류감염증 3-2-2

Sporozoan and Its Infection

The purpose of this subject is study on the characteristics of Sporozoa and its infection. In addition, case studies and relationship with other academic subjects will be discussed.
Neglected Tropical Disease

So-called neglected tropical diseases (NTD) are infections diseases mediated by parasites, bacteria, and viruses. NTD is infectious in more than one billion people worldwide, patients are usually belong to the poorest. Parasitic diseases related with NTD are schistosomiasis, trypanosomiasis, leishmaniasis, onchocerciasis, lymphatic filariasis, dracunculiasis, and soil-transmitted helminthiasis. The content studied in this course includes the life cycle, epidemiology, prevention, and therapy for parasites causing NTD. Moreover, there are to study on the problem for disease with related in the prevalence of NTD, and to discuss on the aid policy for regional target areas of governmental assistance.

Medical Use of Parasites

Parasites can cause immunological complications in the infected person. In a recent, many kinds of pollution and environmental hormones, chemical drug result in the illnesses caused by abnormal immune system. In addition, obesity is an illness that can not be ignored in modern people with westernized eating habits. The resolution of these diseases that are worrying to the modern man can find its solution in the intestinal parasites that control immune system. Parasites evoke the change of immune system by the coevolution between humans and parasites. The results can be used for medical use as a 'Parasite treatment'. This course is to study on the medical use with a future clinical applicability viewing for the therapeutic effect of parasites on various diseases resulting from the change of immune system.


### Topics in Biomedical Ethics

This course deals with topics in biomedical ethics. Among the topics of this course are ethical issues that contemporary biomedicine faces including ethical issues involving embryos and fetus such as abortion, IVF, embryo stem cell research; ethical issues related to organ transplants and transplantation, and end-of-life issues including DNR, self-determination, withdrawal and withholding; ethical issues related to organ transplantation, biomedical research ethics; ethical dilemmas in public health policy where individual rights and public goods are in conflict each other.

#### 801.2703 생명의료윤리특강 3-3-0

**Topics in Biomedical Ethics**

이 과정에서는 생명의료윤리에서 주요한 주제들을 다룬다. 현대 의학이 직면하고 있는 윤리적인 문제와 담래가루, 낙태, 보조 생식술, 베이비바이프로젝트 등 생명의 시작과 관련된 주제, 안면처남 중단, 발기 치료에 대한 환자의 자가 결정권, 치료 유지과 치료 중단 등 죽음과 관련된 주제들을 다룬다. 그 외에도 의학 연구 관련 운동, 환아치료관련 운동, 개인의 권리와 의료 서비스의 산업 설립을 유도하는 보건의료정책과 생명의료의 제학점의에 대해 다룬다.

This course will aim at an understanding of medicine in ancient and medieval periods. It will cover topics such as controversies in the history of medicine, historical figures, history of diseases, social responses to diseases, and impact of diseases on modern societies.

#### 801.783 의학사특론 3-3-0

**Advanced Studies in the History of Medicine**

의학을 공부하는 대에 있어 가장 기본적인 내용을 다룬 과목이다. 의학사 연구방법론, 각 시대별 주요 쟁점, 의학사상의 원인들, 각 시대에 따른 질병과 그에 대한 대처, 질병에 따른 사회와 사회에 미친 영향 등의 문제를 의학사에 관한 대표적인 문헌들을 통해 개괄.

This course will provide the basic research tools in the history of medicine. It will cover a wide range of topics such as research methodology, controversies in medical history, historical figures in medicine, history of diseases, social responses to diseases, and impact of diseases on societies in history.

#### 801.784 고대및중세의학사특론 3-3-0

**Advanced Studies in the History of Ancient and Medieval Medicine**

고대와 중세 시대의 의학을 이해하는 데에 필수적인 과목이다. 고대와 중세 의학사의 주요 쟁점, 고대와 중세의 의학사상의 원인들, 고대와 중세의 주요 질병과 그에 대한 대처, 질병이 사회와 개인들의 삶에 미친 영향 등의 문제를 대표적인 관련문헌들을 통해 개괄 연구한다.

This course will aim at an understanding of medicine in ancient and medieval periods. It will cover topics such as controversies in medical history, historical figures, history of diseases, social responses to diseases, and impact of diseases on societies in ancient and medieval periods.

#### 801.785 근대의학사특론 3-3-0

**Advanced Studies in the History of Modern Medicine**

근대시대의 의학을 이해하는 데에 필수적인 과목이다. 르네상스 이래 19세기까지 근대 의학사상의 주요 쟁점, 근대 의학사상의 원인들, 근대의 주요 질병과 그에 대한 대처, 질병이 사회와 개인들의 삶에 미친 영향 등의 문제를 대표적인 문헌들을 통해 집중적으로 연구한다.

This course will aim at an understanding modern medicine. It will cover topics such as controversies in the history of modern medicine, historical figures, history of diseases, social responses to diseases, and impact of diseases on modern societies.

#### 801.786 20세기의학사특론 3-3-0

**Advanced Studies in the History of the 20th Century Medicine**

20세기 의학의 특성과 의료를 역사학적으로 이해하는 데에 있어서 필수적인 과목이다. 20세기 의학사의 주요 쟁점, 20세기 의학사상의 원인들, 20세기의 주요 질병과 그에 대한 대처, 질병이 사회와 개인들의 삶에 미친 영향 등의 문제를 대표적인 문헌들을 통해 집중 연구한다.

This course will aim at an understanding of 20th-century medicine. It will cover topics such as controversies in history of the 20th-century medicine, historical figures, history of diseases, social responses to diseases, and impact of diseases on societies in the 20th century.

#### 801.788 한국근대의학사특론 3-3-0

**Advanced Studies in History of Modern Korean Medicine**

개화기 이래 우리나라에 도입되어 성장, 발전하고 있는 의학의 특성과 의료를 역사학적으로 이해하는 데에 있어서 필수적인 과목이다. 개화기 이래 우리나라 의학사상의 주요 쟁점, 의학사상의 원인들, 주요 질병과 그에 대한 대처, 질병이 사회와 개인들의 삶에 미친 영향을 집중 연구한다.

This course will aim at an understanding of the history of medicine in modern Korea. It will cover topics such as the introduction of Western medicine to Korea, historical controversies, historical figures, diseases prevalence, social responses to diseases, and impact of diseases on modern Korea.

#### 801.804 의료윤리사특론 3-3-0

**Advanced Studies in the History of Medical Ethics**

의료윤리의 변천, 발전과정을 역사학적으로 이해하는 데에 있어 필수적인 과목이다. 히포크라테스 시대 이래 주요 질병과 근대 등 역사 과정을 거치면서 생겨난 의료윤리학적 경향의 변화와 그에 대한 의료사과 일반인들의 윤리적 변화를 대표적인 관련 문헌들을 통해 연구한다.

This course will aim at an understanding of the changes and development of medical ethics. It will cover the history of medical ethics in various periods: medical ethics in Hippocratic medicine, medieval medicine, and modern medicine. It will emphasize the changes in ethical issues.
among physicians and the public in history.

801.805 Advanced Studies in History of the Health and Diseases-Ancient Times and Middle Ages

This course will aim at an understanding of the history of health and diseases in ancient and medieval eras. It will probe topics in the history of diseases such as how people coped with diseases, social responses to diseases, and the impact of diseases on individuals and societies in ancient and medieval eras.

801.806 Advanced Studies in History of the Health and Diseases-Modern Period

This course will aim at an understanding of the history of health and diseases in the modern period. It will probe topics in the history of diseases such as how people coped with diseases, social responses to diseases, and the impact of diseases on individuals and societies in the modern period, emphasizing historical and socioeconomic approaches.

801.807 Advanced Studies in History of the Hospitals

This course will provide historical studies on the birth of modern hospitals. Students will comprehensively read academic papers on the subject and compare the similarities and dissimilarities among hospitals in different periods and societies.

801.808 Advanced Seminar in the History of Medicine

This course will consist of seminars and small group discussions on current issues in the history of medicine. By reviewing academic literature and holding discussions on current topics, students will broaden the scope of their knowledge on the history of medicine.
Forensic science is to establish and enhance the understanding of the general practice of forensic science and the application of crime scene.

801,2406 범죄과학개론 2 3-3-0
Introduction to Forensic Science 2

법과학은 과학적 지식의 범죄학적 적응 및 해석을 다루는 학문으로 범죄 현장에서 발견된 물리적 증거 등의 혼란에 관한 연구, 혈액, 모발 등의 생체 시료에 대한 화학적 유전학적 분석에 관한 연구, 화재 현장 및 공기 분석에 대한 연구 등의 분야가 존재한다. 이 강좌에서는 법과학에서 법과학의 전반적인 이해, 세부적인 각 분야 및 법적 증거의 분석 방법을 다루며 이의 실제적인 응용에 대한 강의를 실시한다.

Forensic science can be simply defined as the application of science to the medico-legal context. In criminal cases forensic scientists are often involved in the search for and examination of physical traces and biological evidence which might be useful for establishing or excluding an association between someone suspected of committing a crime and the scene of the crime or victim. The purpose of the lecture of Forensic science is to establish and enhance the understanding the general practice of forensic toxicology and the application of crime scene.

801,721 검시방법론 3-3-0
Methods of Postmortem Examination

범사체를 검시할 때 변화의 신원확인이나 사망원인 및 사망의 종류 결정 등 의사로서 기본적으로 수행해야 할 사항들과 관련한 지식, 원칙들을 익히고, 실제 사례에 적용할 수 있는 능력을 배양하고자 한다.

This course will aim at learning the basic knowledge necessary for postmortem examination such as individual identification, cause and mode of death, and at enhancing students' ability to apply such knowledge to actual cases.

801,722 범죄부검연습 3-3-0
Practice of Legal Autopsy

부검을 시행하는 목적과 시행하여야 하는 사항을 알고, 기본적인 부검방법을 익히며, 사망원인에 따라 다양한 방법을 적용할 수 있도록 한다.

This course will aim at increasing students' understandings of forensic autopsy-related knowledge and ability to apply such knowledge to actual cases.

801,723 사망기전론 3-3-0
Mechanism of Death

사망의 정의와 여러 사망기준을 익히고, 이와 관련하여 실제 의료에서 문제가 되는 여러 사망들을 들고 관련 문제점을 분석한다.

This course will aim at understanding the definition and several criteria of death and several death-related situations in medical practice.

801,724 법의외상학 3-3-0
Forensic Traumatology

외력에 의한 손상을 원인에 따라 나누고 서로를 구분하며, 각각의 특성을 들고 설명하도록 한다.

This course will aim at classifying several physical traumas depending on their situations and at learning their features.

801,729 질식사론 3-3-0
Asphyxial Death

지식사의 기본적인 개념을 이해하고, 각 상황에서 나타나는 소견을 익히고 서로를 구분할 수 있도록 한다.

This course will aim at learning the basic concepts and characteristics of asphyxia depending on different situations and at discriminating one another.

801,732 교통사고사의 검시 3-3-0
Postmortem Examination of Traffic Victims

교통사고에서 발생하는 손상의 기본적인 기전을 알고 보행자와 탑승자에서 나타나는 전형적인 손상 양상을 익히자, 사고 상황을 판단할 수 있도록 한다.

This course will aim at an understanding the mechanism of trauma in traffic accidents and at assessing the situation by understanding the characteristics of pedestrians and passengers.

801,831 의료법학 1 3-3-0
Medical Laws 1

의료에 부과된 행정법과 형법의 규제와 의무를 이해하고, 관련 법문 지식을 습득함으로써 의료법학의 개념을 파악한다.

This course will aim at understanding the basic concepts of medical practice in relation to administrative and criminal law and learning the basics of legal medicine.

801,832 의료법학 2 3-3-0
Medical Laws 2

의료자로 소송에서 제기되는 민법적 법률지식과 민사소송과정을 이해함으로써 의료자로 소송의 과정을 파악하고, 의료사고의 방지에 대한 개념을 습득한다.

This course will aim at understanding the procedure of legal proceedings through an understanding of the civil law and civil action and examining the concept of how to prevent medical disputes.

801,851 법의유전학 1 3-3-0
Forensic Genetics 1

인체 유전자의 다형성을 나타내는 기전과 관련하여 기본적인 사항들을 숙지하고, 이를 이용하여 범죄학 분야에서 개인식별을 실시할 수 있는 이론적 배경, 이에 필요한 여러 기술적인 사항들을 익힌다.

This course will study the mechanism of genetic polymorphism and, on the basis of such knowledge, the basics of individual identification.

801,852 법의유전학 2 3-3-0
Forensic Genetics 2

<범의유전학 1>과 함께 인체 유전자의 다형성을 나타내는 기
전과 이의 법의학적 이용에 대하여 이론적 배경, 필요한 여러 가지 기술적인 사항들을 익히는 것을 목적으로 Y 염색체나 미토콘드리아 유전자에 있어서의 다형성을 주요 대상으로 한다.

As a continuation of the course <Forensic Genetics 1>, this course will study several practical aspects of individual identification by using genetic polymorphism. Topics will cover sex chromosomes and mitochondrial DNA.

교과목 정보

801.853 의료분쟁각론 1 3-3-0

Medical Dispute 1

의료분쟁과 관련하여 분쟁의 발생요인, 양태 및 이와 관련한 여러 사회적 문제점들에 대한 여러 문제점들을 확인하고, 의료분쟁이 발생하였을 때 대처방법 등을 익힌다.

As a continuation of the course <Medical Dispute 1>, this course will analyze in depth several aspects of medical disputes. It will include an analysis of practical cases and judicial precedents.

801.854 의료분쟁각론 2 3-3-0

Medical Dispute 2

801.2506 의료의 질관리의 이해 3-3-0

Understanding Quality Assurance

1. 의료의 질 관리의 필요성과 개념을 이해한다.
2. 외국 의료의 질 관리 현황을 이해한다.
3. 의료의 질 관리에 대한 방법론을 숙지한다.
4. 우리나라 의료의 질 관리에 대한 전략을 모색한다.
   1. Understanding concept and need of the quality assurance.
   2. Understanding the present state of foreign quality assurance.
   3. Knowing methodology of the quality assurance.

801.2705 의료관리학특론 3-3-0

Topics in the Health Policy and Management

1. 의료관리학의 개념을 이해한다.
2. 특정연구주제를 통해 최근 의료관리학 동향을 숙지한다.
   1. Understanding particular parts of the health policy and management.
   2. Knowing a trend of the health policy and management by reviewing specific research.

801.638 의료관리학연구방법세미나 3-3-0

Seminar in Research Method of Health Care Administration

본 과목의 목표는 의학, 보건학 등 health science 전공자로 하여금 다양한 의료관리 연구방법론을 이해하게 하고, 각각의 방법론에 대한 기본적인 지식을 갖도록 하며 연구방법론에 대한 이해를 기초로, 창의적이고 합리적으로 연구의 주제와 방법을 설정하고 연구를 수행할 수 있는 능력과 다른 연구자의 연구를 비평할 수 있는 능력을 함양하는 데 있다.

This course aims to provide the knowledge and implementation of research methods and to explore practical and conceptual issues in the design, conduct, analysis, and evaluation of health services research through discussions on current research and methodologies.

801.639 병원관리학개론 3-3-0

Introduction to Hospital Administration

의학, 보건학 등 health science 전공자로 하여금 병원관리의 기본적인 지식을 가질 수 있도록 하며, 최근의 변화된 병원환경과 병원의 새로운 대응방식에 대한 지식과 경험을 풍부하고, 병원관리에 필요한 최근의 이론적 틀을 익히고 적용할 수 있는 능력을 배양한다.

This course will build students’ basic principles and skills in hospital administration. Students will be encouraged to develop their knowledge of and experience in the new environment of health care organizations and to acquire an ability to apply new theories to hospital management.

801.641 의료정책론 3-3-0

Health Policy

보건의료인 각 개인의 활동을 규제하는 기초적인 환경으로서 보건의료정책의 기본적인 개념과 과정을 이해하고, 이를 보건의료활동에 적용할 수 있는 능력을 배양한다.

The course aims to inform students of the development and implementation of appropriate health policies and to increase their understanding of the process of policy development.

801.647 보건의료경제학 3-3-0

Health Economics

보건의료에 적용되는 경제학의 경제학적 동향에 관한 강의로 수요/공급의 결정요인, 시장이론, 경제적 효용성과 같은 미시경제이론을 풍부하여 이를 의료경제자 및 공급자의 행위, 의료보험, 의료시장 등에 적용하게 한다.

The basic principles of economics can be applied to diverse subjects in health care. Students will understand the determinants of supply/demand, market theory, and economic efficiency, which can be applied to health care, health insurance, and the behavior of health care providers and consumers in this course.
801.735A 의료보험론 3-3-0
Concepts of the Medical Insurance System

1. 의료보험의 필요성과 개념을 이해한다.
2. 외국 의료의 의료 보험 관련 현황을 이해한다.
3. 의료보험에 대한 운영 방안 등을 숙지한다.
4. 우리나라 의료보험 시스템을 위한 전략을 제시한다.
   1. Understanding the concept and need of the medical insurance.
   2. Understanding the present state of foreign medical insurance systems.
   3. Knowing a management methodology of the medical insurance system.
   4. Searching for a strategy for medical insurance system of Korea.

801.738 지역사회의학세미나 3-3-0
Seminar in Community Medicine

건강과 절병, 의료 이용에 관한 일반인의 행태와 그러한 행태를 보이는 이유 및 결정요인을 이해함으로써 보건의료에 관한 일반인의 과정에서 일반인과 환자가 의료인과 함께 중요한 주체라는 것을 인식하도록 한다.
   1. People's behavior has been acknowledged as the major determinants of their health. This course is intended to develop students' knowledge of human behavior related to health, illness, and the utilization of health care and to understand the ways in which such behavior has influenced health. Students will understand that ordinary people and patients are the decision-makers and partners as well as health care providers in a series of health care processes. They will be expected to grasp the key implications of health and illness behavior on an individual or populational level from the perspective of social policies. Through such an understanding, students will have some important considerations of health promotion, disease prevention, and treatment of patients.

M0000.012800 건강불평등측정방법론 3-3-0
Methods in Health Inequalities Measurement

건강 불평등 측정이란 건강 지표에서의 인구 집단 간 차이를 기술하는 것이다. 이 과목에서는 건강 불평등 측정에 필요한 사회경제적 위치 지표, 건강 지표, 자료, 통계적 방법론을 살펴보고, 2차 자료를 분석할 기회를 제공한다. 이를 통하여 학생들이 건강 불평등 측정과 보건의료에 대한 실질적인 지식과 기술을 습득하도록 한다.

Health inequalities measurement describes the differences in health indicators in subgroups of a population. This course provides an overview of the necessary components in health inequalities measurement such as socioeconomic position indicators, health indicators, data, and statistical methods and gives an opportunity for students analyzing secondary data with statistical softwares. This course will help students develop and improve practical knowledge and skills for measuring and monitoring health inequalities.

M1923.000200 전장불평등 3-3-0
Health Inequalities

이 강좌는 인간의 건강-질병 현상이 개인 또는 집단의 사회경제적 위치에 따라 다른 분포를 보이는다는 관찰 결과를 바탕으로, 이를 건강 불평등(health inequalities)과 정의하고, 이의 양상과 원인을 탐구한다. 이 과정을 통하여 학생들은 사회경제적 건강불평등을 기술하는 방법을 익히고, 이의 원인을 파악하기 위한 다양한 접근법과 사회학적(social epidemiology) 개념을 이해함으로써, 궁극적으로 건강-질병 현상의 인과성을 파악하기 위한 보다 포괄적인 사고를 타당해질 것이다.

The course is premised on the idea that health and diseases are not randomly distributed within or across populations but are patterned by indicators of socioeconomic position. These non-random patterns are defined as health inequalities. This course will examine the patterns of health inequalities and its pathways. The course will familiarize students with methods to measure the magnitude of health inequalities as well as concepts and approaches in social epidemiology to explain socioeconomic inequalities in health. The course will also focus on how to comprehensively understand causes of human diseases.

M1923.000900 아동건강발달의 이론과 정책 3-3-0
Theories and Policies of Child Health and Development

아동 건강 발달에서 최선의 출발을 보장하는 것은 아동의 권리가 아니라 인구의 건강과 인간 개발을 위해 중요하다. 이 강좌에서는 공공보건 관점에서 아동 건강 발달의 이론적 배경과 정책과제를 다룬다.

Ensuring best start in child health and development is a human right to every child and will act a crucial determinant for better population health and human development in the future. With a public health perspective, this lecture course covers various issues regarding theories and policies of child health and development.

M2944.000100 의료관리학개론 3-3-0
Introduction to the Health Policy and Management

1. 의료관리학의 정의 및 개념을 이해한다.
2. 의료관리학의 각론을 이해한다.
   1. Understanding the concept and definition of the health policy and management.
   2. Understanding particular parts of the health policy and management.

M294.000200 질병예방과 건강증진 3-3-0
Disease Prevention and Health Promotion

1. 질병예방과 건강증진의 정의 및 개념
2. 외국의 질병예방 및 건강증진사업 사례
3. 국민건강증진정책 고찰
4. 우리나라의 질병예방 및 건강증진사업 방향성 모색
5. 질병예방 및 건강증진사업 현장 방문
   1. Concept and definition of the disease prevention and
health promotion project
2. The present state of foreign disease prevention and health promotion project
3. Critics about Health Plan 2010
4. Future of the disease prevention and health promotion project in KOREA
5. Visiting of disease prevention and health promotion project operation facility

M2944.000300  3-3-0  Readings in Medical Decision Making

medical decision making has become one of the most important
decisions in the health care system. It is affected by various
circumstances of uncertainty; and interactions between medical
decision making and societal levels; medical decision making under
risk and uncertainty in medicine. The information retrieval process plays a key role in the medical environment by stor-
ing and retrieving huge amounts of medical data effectively. Through
this course, students will acquire basic knowledge in information retrieval. The course consists of three parts: medical ontol-
ogy, retrieval model, and index structure. The medical terminologies and their characteristics will be
discussed in the first part. The Boolean model, vector model and probabilistic retrieval model will be explained in the sec-
ond part. Finally, students will learn the basic models and characteristics of the inverted file and the signature file in the
third part.

801.2057  3-3-0  Topics in Measurements in Biology and Medicine

The medical terminologies and their characteristics will be
discussed in the first part. The Boolean model, vector model and probabilistic retrieval model will be explained in the sec-
ond part. Finally, students will learn the basic models and characteristics of the inverted file and the signature file in the
third part.

801.2058  3-3-0  Topics in Hospital Information System

Introducing the Hospital Information System (HIS) is developing and progressing rap-
Idly and their applications in medicine are being expanded through clinical application and medical researches. Through
this lecture students will learn the analytic method for the under-
standing of hospital business flow. The database design will be discussed in the three phases: conceptual design, logi-
cal design, and physical design. The Entity Relationship Diagram will be adopted for the representation of hospital in-
formation system. Also, we will study various kinds of medi-
cal terminology systems for the knowledge representation,
XML for the exchange of clinical data and their characteristics for the future integration of HIS and the electronic medical record system.

801.2615 의료정보표준의 이해와 활용 3-3-0

Standard in Medical Informatics: Understanding and Its Applications

본 강좌를 통하여 의료정보표준의 종류와 표준화활동에 대해서 배운다. 의료정보표준을 개념 및 용어의 표준, 데이터전송 표준, 서식의 표준으로 나누어 해당 범주에 속하는 표준의 종류와 각각의 특성에 대해서 강의한다. 데이터 전송의 표준으로서 HL7, DICOM, EDF 등의 세부내용에 대해서 배우며, 과제를 통하여 해당 표준규격의 표준 프로토콜을 구현하는 방법을 배우도록 한다. 또한 ISO 표준화활동에 대한 소개를 통하여, 국제적인 표준화회의 진행방식과 표준이 만들어지는 절차에 대해서 배우도록 한다.

From this lecture students will learn the basic concepts of medical informatics standards. The categories of standards will be explained in the lecture. Various kinds of standards which belong to each category will be explained precisely. Especially the data communication standards such as HL7, DICOM, EDF will be studied through implication projects. In addition, students will have a deep understanding of standardization process. The process of ISO committee will be described briefly, which will provide wide understanding of the process.

801.2616 임상의료정보학개론 3-3-0

Introduction of Clinical Informatics

본 강좌는 의료정보학의 영역 중에서 임상적용에 관련된 분야를 중심으로 강좌를 진행한다. 임상의사결정지원시스템, clinical guideline, critical pathway 등과 같이 임상과 밀접한 연관관계를 가지고 있는 분야를 중심으로, 이론이자, 현장의 활용사례 등을 많이 접할 수 있도록 많은 임상교수들이 참여하는 협동강의 형태로 진행된다. 전반부에서는 임상의료정보학의 이해에 도움되는 기본이론 중심으로 강의가 이루어지며, 후반부에서는 실제 임상에서의 활용사례를 중심으로 강의가 이루어진다.

Clinical informatics course will provide the basic knowledge of information science and its clinical applications. The first half of the course will give knowledge of information technologies and the second half will be provided with multiple clinical cases. The core part focuses on the topics such as clinical decision support system, clinical guidelines, and critical pathways. In order to give more practical view of implementation, a group of clinical professors will take part in the lecture.

801.2617 의공학개론 2 3-3-0

Introduction of Biomedical Engineering 2

본 강좌는 의공학의 영역 중에서 근골절학적 주제에 관련된 분야를 중심으로 강좌를 진행한다. 임상의사결정지원시스템, clinical guideline, critical pathway 등과 같이 임상과 밀접한 연관관계를 가지고 있는 분야를 중심으로, 이론이자, 현장의 활용사례 등을 많이 접할 수 있도록 많은 임상교수들이 참여하는 협동강의 형태로 진행된다. 전반부에서는 임상의료정보학의 이해에 도움되는 기본이론 중심으로 강의가 이루어지며, 후반부에서는 실제 임상에서의 활용사례를 중심으로 강의가 이루어진다.

The main purpose of this course is the provision of basic understanding of state of arts in Biomedical Engineering. The core lecture focuses on the nano-technology, fusion technology, and U-health technology. In the first half of the lecture covers the life science briefly which can be an basic knowledge for the non-medical graduates. The second half will cover the brand new technologies in biomedical fields which is already applied or can be applied in near future.

801.2618 웰니스케어를 위한 의공학 3-3-0

Biomedical Engineering for Wellness Care

생활습관은 인체 건강에 매우 큰 영향을 미치기 때문에 인체의 건강을 증진하기 위해서는 생활습관에 대한 더 많은 관심이 필요하다. 생활습관을 교정하여 건강을 증진시키기 위하여 생활습관을 장기적으로 촉진할 수 있는 기술이 개발되어야 한다. 이 과정에서는 생활습관이 인체 건강과 질병에 미치는 영향에 대하여 다루고, 이러한 생활습관을 촉진하기 위한 의공학적 접근 방법에 대한 이해를 제공한다.

Because lifestyle factors have a rather great impact on human health, to improve human health, the lifestyle factors deserve more attention. It is necessary to develop the technologies measuring lifestyle factors quantitatively to improve human health by correcting lifestyle factors. This course will deal with the impact of lifestyle factors on human physiology and diseases and provide understanding of the medical engineering technologies measuring lifestyle factors quantitatively.

801.538A 의공학개론 1 3-3-0

Introduction of Biomedical Engineering 1

의공학의 전반적인 내용을 좀 더 심화한 내용을 다루는 대학원 과정으로, 주제로는 생명체asurement, 인공장기, 생체조직적합성과 연관된 주제들로 다룬다.

This graduate course will provide advanced knowledge of biomedical engineering science including biomedical modeling and simulation, artificial organs, and tissue engineering.

801.744A 생물리학 3-3-0

Biophysics

생체현상에 대하여 역학적인 측면에서 이해하고 이를 역학적 인 모델링을 통하여 검증할 수 있는 기본이론을 다룬다.

This graduate course will provide general knowledge of biophysics in terms of biomedical engineering. Theories on biophysics will be explained in mathematical and engineering terms for an understanding of physiological phenomena.

801.746A 생체신호처리론 3-3-0

Biomedical Signal Processing

생체에서 발생되는 각종 신호신호에 대하여 신호를 획득하는 단계에서 분석 및 처리하는 과정들을 공간적인 신호처리 이론을 중심으로 배운다.

This graduate course will provide advanced knowledge and practical skills to handle various signals from the body. Engineering concepts required in biosignal processing will be established.
Biomedical System Simulation

Geriatrics

Research on Biocompatibility

Introduction to Artificial Organs

Geriatrics is the academic field specializing in the diagnosis, treatment, and long-term management of the elderly and will be an essential part of medical education for the preparation of the aging of the elderly in Korea. Geriatrics is unique and somewhat different from the traditional field of medicine because it focuses on the prolongation of the independent lives of the elderly by improving and maintaining the physical functions of the elderly, which can be impaired by aging, bad life styles, and diseases. It encompasses a wide range of medical specialties such as internal medicine, neurology, rehabilitation medicine, psychiatry, and nursing.

This course will cover the concept, differences, and characteristics of elderly diseases; the importance of a comprehensive geriatric assessment; and the importance of and methods for maintaining the physical functions of the elderly and their long-term care. While such contents are related to all medical specialties, internal medicine is the most relevant field. It cannot be overemphasized that geriatrics is very important for the education of postgraduate students of medicine, who will manage the diseases of the elderly in the future.

Rheumatology

Rheumatology is a subspecialty of internal medicine that deals with connective tissue diseases affecting the musculoskeletal system. It includes over 120 diseases such as rheumatoid arthritis, systemic lupus erythematosus, and systemic vasculitis and common connective tissue problems such as low back and shoulder pain. Rheumatic diseases are a leading cause of disability in human beings and becoming increasingly important as life expectancy grows longer. Most rheumatic diseases are caused by the autoimmune response triggered by environmental factors such as infection in individuals with genetic susceptibility. Understanding the pathophysiology of rheumatic diseases requires comprehensive knowledge of genetics, infectious diseases, and immunology. It is also closely related to other medical disciplines such as orthopedic surgery, rehabilitative medicine, dermatology, and ophthalmology. Although treatments were empirically determined in the past, those based on the pathophysiology of diseases are now being introduced into clinical rheumatology.

Understanding Electrolytes and Acid-Base Disorders

Geriatrics

In the natural reading, the text is provided in a way that maintains the logical flow and coherence of the information presented, ensuring that the meaning of the content is preserved and accurately communicated. The factual content is presented in a clear and logical manner, allowing the reader to understand the concepts and ideas being discussed in the document.
Recent Advances in Endocrinology

Recent advances in endocrinology have led to a rapid development of research in the field. This course is designed to provide students with a comprehensive understanding of the latest developments in endocrinology, including new insights into the mechanisms of hormone production and action. The course will cover the latest research on the role of hormones in various physiological processes, with a focus on the latest discoveries in molecular biology.

Recent Advances in Nephrology

This course will provide students with a comprehensive understanding of the latest developments in nephrology, including new insights into the mechanisms of renal function and disease. The course will cover the latest research on the role of the renal system in maintaining homeostasis, with a focus on the latest discoveries in molecular biology.

Recent Advances in Hematology

This course will provide students with a comprehensive understanding of the latest developments in hematology, including new insights into the mechanisms of blood cell production and function. The course will cover the latest research on the role of hematopoietic stem cells in maintaining hematopoiesis, with a focus on the latest discoveries in molecular biology.

Recent Advances in Infectious Diseases

This course will provide students with a comprehensive understanding of the latest developments in infectious diseases, including new insights into the mechanisms of pathogenesis and host defense. The course will cover the latest research on the role of pathogens in causing disease, with a focus on the latest discoveries in molecular biology.
 Eighth course in internal medicine will teach pathophysiology, epidemiology, clinical features, diagnostic methods and treatment of various diseases in gastroenterology. Topics to be introduced include recently developed endoscopic procedures, interpretation of results, and endoscopic intervention. Clinical interpretation of the methods and results of the gastroenterological motility test will be covered. Genetic abnormalities, its relationship with gastroenterological disease, and diagnostic application using molecular biology will be covered as well.

**외과학 전공(Surgery Major)**

**802.1003A 간이식학개론 2-2-0**

*Introduction to Liver Transplantation*

간의 해부와 생리에 대하여 기초적인 지식을 습득하는 동시에 간이식의 역사 및 여러 장르를 이해하고 간이식 전후 처치에 관한 기본적인 지식을 탐색한다. 간의 변형학 및 연구하고 나아가 인간간 또는 간세포이식 등의 간기초요법 및 탄광간의 간이식에 대하여 연구하고 토의한다.

**802.2224 외과종양학에서 유전자데이터분석 2-2-0**

*Understanding Genomics data in Surgical Oncology*

최근외과 장치 영역에서도 cDNA, microarray, proteomics, a-CGH 등의 유전자 정보들이 수술 후 암환자의 병리학적 예후 환경으로부터 나아가고 있다. 본 과목에서는 임상의들이 하루하루 인간 유전자본인의 기초적인 유전자 정보와 함께 분석의 방법을 bioinformatics를 통해 이해하도록 한다. 암학자 기존에 분석한 데이터를 환자에게 적용하여 임상, 예후, 치료 등에 응용할 수 있는 기술까지 갖추게 할 수 있도록 한다.

Recent surgical oncology field requires understanding of new field cDNA microarray, proteomics, bioinformatics, etc.
Introduction to Minimal Invasive Surgery

This course covers the understanding and clinical implications of the anatomy and physiology of the head and neck. Concrete purposes are as follows: to understand the anatomy and physiology of the head and neck; to understand the relevant anatomy and physiology of other organs and tissues; and to understand the relevant anatomy and physiology of other organs and tissues.

802.515A 췌장외과학개론 2-2-0

Introduction to Surgery Methodology in Surgery

This course covers the understanding and clinical implications of the anatomy and physiology of the head and neck. Concrete purposes are as follows: to understand the anatomy and physiology of the head and neck; to understand the relevant anatomy and physiology of other organs and tissues; and to understand the relevant anatomy and physiology of other organs and tissues.

802.519B 두경부외과학개관 2-2-0

Survey of Clinical Transplantation

This course covers the understanding and clinical implications of the anatomy and physiology of the head and neck. Concrete purposes are as follows: to understand the anatomy of the head and neck (salivary gland, facial nerve, tongue, and neck), to understand the relevant anatomy and physiology of other organs and tissues; and to understand the relevant anatomy and physiology of other organs and tissues.

802.514C 임상이식학개관 2-2-0

Principles of Surgical Science

This course covers the understanding and clinical implications of the anatomy and physiology of the head and neck. Concrete purposes are as follows: to understand the anatomy and physiology of the head and neck; to understand the relevant anatomy and physiology of other organs and tissues; and to understand the relevant anatomy and physiology of other organs and tissues.

802.518A 외과학원론 2-2-0

Survey of Head and Neck Surgery

This course covers the understanding and clinical implications of the anatomy and physiology of the head and neck. Concrete purposes are as follows: to understand the anatomy and physiology of the head and neck; to understand the relevant anatomy and physiology of other organs and tissues; and to understand the relevant anatomy and physiology of other organs and tissues.

802.3501 외과학연구방법개론 2-2-0

Survey of Surgery of Pancreas

This course covers the understanding and clinical implications of the anatomy and physiology of the head and neck. Concrete purposes are as follows: to understand the anatomy and physiology of the head and neck; to understand the relevant anatomy and physiology of other organs and tissues; and to understand the relevant anatomy and physiology of other organs and tissues.

802.3401 최소침습수술개론 3-3-0

Survey of Surgery of Pancreas

This course covers the understanding and clinical implications of the anatomy and physiology of the head and neck. Concrete purposes are as follows: to understand the anatomy and physiology of the head and neck; to understand the relevant anatomy and physiology of other organs and tissues; and to understand the relevant anatomy and physiology of other organs and tissues.
neck triangle, etc.; to know the patho-physiology and treatment of cervical congenital anomalies; to understand the cause, clinical symptoms, treatment principles, and complication of benign head and neck tumors; to know the classification, diagnostic approach, and treatment of malignant head and neck tumors; and to understand the indication of radical neck dissection and to identify important vessels and nerves in times of operation.

Recent developments in the subject of surgical oncology will be discussed. The aim of this course is to cultivate the ability required for the diagnosis, treatment and research of cancer through concrete study. Students will collect various domestic and foreign comments, then evaluate and compare clinical experiences and study results.

The aim of this course is to study the basic problems in pediatric surgery, and to study the use of animal research who suffer from these disorders.

The purpose of this course is to make students understand the anatomy and physiology of the stomach and small intestine, and to apply the etiology, diagnosis, and treatment of each disease. Recent trends in the diagnosis and treatment of each organ’s benign and malignant disease will be covered, so that the knowledge can be actively applied to patient care.

The aim of this course is to cultivate the ability required for the diagnosis, treatment and research of cancer through concrete study. Students will collect various domestic and foreign comments, then evaluate and compare clinical experiences and study results.

The aim of this course is to study the basic problems in pediatric surgery, and to study the use of animal research who suffer from these disorders.

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적응증을 파악한다. 수술 술기를 습득하고 술 후 약물 투여 원칙과 추적조사하는 방법을 익힌다. 정맥 폐색의 원인을 알아보고 치료원칙을 익히며 동맥폐색과 감별하는 방법을 익힌다.

This course will cover the anatomy and physiology of blood vessels. At the end of the course, the students should be able to do the following: know the causes which result in the peripheral vascular diseases and understand their pathophysiology; understand the clinical manifestations of vascular diseases; list the diagnostic tools, understand the advantages and disadvantages of each tool, and know the clinical application of the tools; know the causes which induce peripheral vascular occlusion, understand treatment principles, and list operation indications; know the technique of operation, principles of postoperative drug treatment, and the method of follow-up; and know the causes of venous occlusion, the treatment principles, and the method of differentiation from arterial occlusion.

802.886C 이식면역학개관 2-2-0 Survey of Transplantation Immunology

이식면역학은 인체의 면역체계의 이해와 이식 거부반응과 관련된 면역학적 기전, 면역억제기전의 면역학적 작용기전, 이식거부반응을 억제하기 위한 면역학적 조작방법 등을 포함한다. 구체적 내용은 면역체계 개요, 조직적합성 항원, 세포면역반응의 기전, 동종혈원과 동종이식 등이다.

This course will cover the human immune system, immunological mechanisms related to rejection, immunological mechanism of immunosuppressant, and immune modulation for the inhibition of rejection. Student will learn the general concepts of the immune system, histocompatibility antigens, mechanism of cellular rejection, alloantigens, and allotransplantation.

802.887A 혈관질환연구 2-2-0 Studies in Vascular Disease

혈관질환연구는 혈관의 물리적, 생리적, 병리학적 특성에 대한 내용을 포함한다. 구체적 내용은 혈액학적 원리, 동맥협착시 혈역학, 인체의 혈액 순환 양식, 동맥벽의 탄성점도, 혈관 내막, 내막증식증, 항내막세포 항체, 동맥경화의 병태, 동맥류의 병태 등이다.

This course will cover the physical, physiological, and pathological characteristics of vessels. Students will study the principles of hemodynamics, hemodynamics in arterial stenosis, circulatory system of the human body, elasticity of arterial walls, endothelium, intimal hyperplasia, anti-endothelial cell antibodies, pathology of atherosclerosis, and pathology of arterial aneurysm.

802.888A 직장항문생리학개론 2-2-0 Introduction to Anorectal Physiology

본 과목에서는 직장 및 항문의 해부학적 특성과 생리학적 기능에 대하여 소개하고, 직장 및 항문의 기능적 장애에 의해 발생하는 각종 질환들의 최신 진단방법 및 치료에 대하여 토의하고자 한다.

This course will introduce the anatomical features and physiological functions of the anorectal area. Comprehensive information on pathophysiology for anorectal dysfunction and recent diagnostic methods and treatments for these disorders will be provided.
The aim of this class is to understand high risk pregnancies and related complications. To reach this goal, each student attending this class will learn the following: normal and abnor-
mal signs of pregnancies; common medical and surgical diseases during pregnancies; diagnostic methods regarding fetal monitoring; and counseling for pregnancy related complications.

802.546

Urology

Urogynecology

Urology and gynecology have the common goal of understanding the lower urinary tract and pelvic floor during pregnancy. This class focuses on the clinical manifestations, diagnostic methods, and management of urogynecological conditions that may complicate pregnancy. Students will learn about the anatomy and physiology of the lower urinary tract and pelvic floor, the evaluation of urogynecological symptoms during pregnancy, and the selection and implementation of appropriate therapeutic strategies to optimize maternal and fetal outcomes.
This advanced course is for graduate students. Its aim is to understand the basic characteristics of urogynecologic disorders and to diagnose and treat pelvic floor abnormalities. Students will be expected to know: anatomical structures of pelvic floor, basic mechanisms of pelvic floor relaxation, and diagnostic methods and treatment modalities regarding urogynecologic disorders.

802.3302 소아증후군학 3-1-4

Pediatric Intensive Care

Subject for the development of research bases such as pathogenesis, new therapeutic methodology and prognostic factors in the diseases that need intensive monitoring and critical care.

802.3502 소아심장질환의 전기생리학적이해 3-1-4

Electrophysiology of Pediatric Heart Disease

The objectives of this course are: to understand the mechanisms of tumor invasion; and ways of describing currently published research on neovascularization and tumor invasion in gynecologic tumors.

802.5005 감염병과 백신 3-3-0

Infectious Diseases and Vaccines

The objectives of this curriculum ‘Infectious Diseases and Vaccine’ are; To understand etiology, pathophysiology, diagnosis, management, and epidemiologic characteristics of the vaccine-preventable diseases. and To particularly emphasize the role in prevention of vaccines in these diseases After completion of this course, students can build their professional knowledge on control of vaccine-preventable diseases and also use their knowledge for the prevention of infectious diseases and fields related to public health aspects.

The topics of interest include epidemiology of infectious diseases, vaccine development, immune response to vaccine, vaccine safety, immunogenicity, efficacy, effectiveness, and immunization practice guideline.

802.5006 소아청소년질환과 동반되는 내분비문제 3-3-0

Endocrine Problems in Pediatric Non-Endocrine Disorder

802.812 폐경기학 3-2-2

Menopause

The aim of this advanced course for graduate students is to understand the basic endocrine changes after menopause and to encourage students’ ability to perform basic research on menopause. Students will be expected to know the following: common conditions after menopause such as coronary heart diseases and osteoporosis; ways of applying hormone replacement therapy; indications of second-line drugs for osteoporosis; and to understand the basic endocrine changes after menopause.

802.813 부인증탕부생물학 3-2-2

Application of Molecular Biologic Techniques in Gynecologic Oncology

The aim of this advanced course for graduate students is to understand the basic mechanisms involved in the development of gynecologic tumors and to establish new diagnostic and treatment modalities through such knowledge. Students will be expected to know the following: common conditions for tumor development; genes and research methods regarding the mechanisms of neovascularization; genes and research
병리, 전단, 치료를 고찰하며, 주제는 내분비, 소아암 생존아, 미숙아, 경련, 만성 스테로이드제 투여 등이 있다.

The objectives of the course ‘Endocrine problems in pediatric non-endocrine disorder’ are; To understand the pathophysiology of endocrine problems in children suffering from non-endocrine disorders. The issues to be discussed are endocrine problems in brain tumor, childhood cancer survivor, preterm, neurologic disease, chronic corticosteroid administration, eg.

802.556 최근소아내분비학개론 3-1-4
Recent Advances in Pediatric Endocrinology
소아에서 잘 나타나는 내분비학적 질환, 특히 저신장증을 유발시키는 질환에 대한 특성을 최신 지견을 통하여 이해하며 또한 이들 질환을 최신 진단법을 통한 진단법을 소개한다.

The purpose of this course is to understand the clinical characteristics of childhood endocrine diseases, especially short stature-associated endocrine diseases, by reviewing recent advances in diagnosis and treatment.

802.3503 수면의학의 이해 3-3-0
Understanding Sleep Medicine
다음과 같은 내용을 다루고자 한다.
1. 수면의학이 발전되어온 과정을 살펴보고 중요한 발견들을 정리한다.
2. 정상수면-각성의 기전을 살펴보고 특히 관련하는 신경전달물질과 해부학적 구조에 대해 알아본다.
3. 시간생물학의 기전 개념을 주목하고 생화학적, 해부학적 기전을 살펴본다.
4. 수면을 측정하는 기기 및 평가도구에 대해 조사한다.
5. 다음 수면질환의 이해 및 치료에 대해 개괄적으로 설명한다: 1) 불면증 2) 수면무호흡증 3) 기면병 4) 저분만후군 5) 임시수면장애 6) 소아수면장애 7) 사건수면 8) 시간생물학적 장애
6. 현재 개발되고 있는 약제 및 치료 방법에 대해 조사한다.
These topics will be discussed.
1. The history and important/historical findings in sleep medicine will be studied.
2. The mechanism of sleep-wake cycle will be investigated especially in terms of neurotransmitters and anatomic correlates.
3. The basic concept of chronobiology will be delivered, and biochemical substrates and anatomical structures in circadian rhythm will be studied.
4. The instruments and scales to measure sleep and sleep disorders will be introduced.
5. Following sleep disorders will be discussed: 1) Insomnia 2) Sleep apnea syndrome 3) Narcolepsy 4) Restless legs syndrome 5) REM sleep behavior disorder 6) Pediatric sleep disorder 7) Parasomnia 8) Circadian rhythm disorder
6. Medications and treatment methods currently being developed will be introduced.
성시노 장애의 역학, 전단, 방대성, 치료 및 영향에 대한 계체적 교육을 통해 다양한 노인의 지식과 전략, 치료 및 연구할 수 있는 임상 및 연구 역량을 배양한다. 본 과정은 정신건강에 대한 기본적인 지식이 있는 의사 및 연구자를 대상으로 한다.

Elders with cognitive impairments are increasing rapidly with worldwide population aging. This course will look at the epidemiology, diagnosis, pathophysiology, management and potential impacts of various cognitive disorders in late life.

The course is aimed at Medical Doctors or Researchers with potential impacts of various cognitive disorders in late life. This course will look at the epidemiology, diagnosis, pathophysiology, management and potential impacts of various cognitive disorders in late life. This course will look at the epidemiology, diagnosis, pathophysiology, management and potential impacts of various cognitive disorders in late life.

This course intends to give an overview of the various aspects of the latest research and clinical knowledge regarding mood and anxiety disorders in youth. This course intends to give an overview of the various aspects of the latest research and clinical knowledge regarding mood and anxiety disorders in youth.

In order to understand mood and anxiety disorders in youth, we first need to understand normal emotional development of childhood and adolescence. This course will first review the extant literature regarding development of mood and anxiety in children and adolescents. This course will first review the extant literature regarding development of mood and anxiety in children and adolescents.

from mood disorders such as depression due to stress in modern life, which results in severe socioeconomic burden including suicide. This course is intended to improve students’ understanding of mood disorders and their clinical and research works through an integrative, in-depth exploration of affective disorders. This course covers the concept and history of mood disorders, changes of classification systems and their limitations, several hypotheses for the causes, and biological mechanisms and clinical implications of therapeutic strategies. Students are expected to do research and discuss on each topic.
biological and psychosocial risk factors, novel approaches to diagnosis and assessment, and advances in treatment and prevention of mood and anxiety disorders in youth.

**M2950.000200** 가역의 이해 3-3-0

Understanding Memory

In the course, the students will review biological backgrounds, psychiatric and psycho-socio-cultural phenomenon. Though it starts from comprehensive understanding suicide, which is known that 2/3 of suicide attempters had mental problems, of which 2/3 was mood disorders. Prevention and management of suicide is one of the important issues. To understand this, it is important to learn biological / cognitive / neuroscientific understanding of memory, memory change and memory training in the elderly.

**M2950.000300** 자살의 이해 3-3-0

Understanding Suicide

Suicide rate of Korea has been the highest one among OECD countries since 2003. There have been many effort to prevent suicide including legislation Suicide Prevention Law and establishing suicide prevention centers. It is known that 2/3 of suicide attempters had mental problems, of which 2/3 was mood disorders. Prevention and management of suicide is one of the important issues. To understand this, it is important to learn biological / cognitive / neuroscientific understanding of memory, memory change and memory training in the elderly.

**M2950.000050** 피부과학전공 3-3-0

Introduction to Skin Barrier

Stratum corneum is the most important layer of the skin for skin barrier function. Since 2003, there has been a tremendous advancement in skin barrier research. Through this course, students will gain knowledge of the current concept of skin barrier, barrier recovery and factors influencing barrier recovery, damage to skin barrier in many pathologic conditions and aging, and different types of moisturizers.

**M3000.010900** 구진인설질환 3-3-0

Papulosquamous Disease

Students will gain knowledge of the current concept of skin barrier, barrier recovery and factors influencing barrier recovery, damage to skin barrier in many pathologic conditions and aging, and different types of moisturizers.
발해지면서 새로운 치료법들이 다양하게 도입되고 있다. 또한, 건
선관절염, 심혈관질환, 당뇨병 등의 다양한 동반질환과의 연관성에
대한 연구도 활발히 진행되고 있다. 이 강의는 건강 및 기타 구간
인식질환의 새로운 지식을 살펴보는 것을 내용으로 한다.

Papulosquamous disorders are mostly immune-mediated chronic
skin diseases including psoriasis, lichen planus, pityriasis rubra pilaris, and so forth. Especially, the pathogenesis of psoriasis is now known to be mediated by complicated immunologic mechanism including lots of T cells, dendritic cells, and various cytokines which compels to develop new therapeutic agents. Also, systemic comorbidities like psoriatic arthritis, cardiovascular diseases, and diabetes are related with psoriasis so that now psoriasis is regarded as a systemic inflammatory disease.

이 강의는 건강 및 기타 구간 인식질환의 새로운 지식을 살펴보는 것을 내용으로 한다.

M1923.001000 피부병리학연구 3-3-0
Studies of Sebaceous Gland-Related Disorders
피부병리학 연구는 여드름, 소비, 아토피, 피부염 등을 포함한다. 이 과정에서는 이 질환들이 병리학적 변화를 일으킨다. 입증된 병리학적 기전은 병리학의 기초라 할 수 있으며, 이에 따른 치료 방법은 신속하고 효과적이다. 이 강의는 다양한 입증된 병리학적 기전들을 살펴보고, 이를 바탕으로 치료 방안을 제시한다. 더 나아가 최근 수행된 병리학적인 연구를 실질적으로 병리학적 연구를 수행할 때 있어 필요한 기본적인 지식을 다루게 될 것이다.

In addition to clinical examination, knowing the histological changes of skin microstructures is essential to understand skin diseases. This course will deal with basic dermatopathological findings associated with various inflammatory, pigmented, tumorous, and infectious skin disorders. Furthermore, recent advances in skin pathology by reviewing scientific literature will be covered. This is necessary to extend the knowledge of students which may carry out future research regarding dermatopathology.

정형외과학전공(Orthopedic Surgery Major)
802.5053 근골격계기초연구의 이해 3-3-0
Understanding Basic Research in Musculoskeletal System
근골격계의 질환이나 손상을 치료하자면 근골격계를 구성하는 성분, 구조, 기능에 관하여 깊은 기초 지식이 필수적이며 이러한 구성 요소가 어떻게 조화를 이루며 인체를 구성하여 기능하는지 이해하고 있어야 한다.
본 과목의 목표는 근골격계를 구성하는 곳, 연골, 인대, 근, 근육, 주간관의 구조조사에 대하여 간에 살펴보고 근골격계의

의 기능에 대한 최신 지식을 제공하고자 한다. 아울러, 근골격계 관련 기초 연구를 수행하기 위해 필수적인 체외 실험실과 체내 동물실험의 방법론적 고도도 시도하고자 한다.

Optimal treatment of patients with disease and injuries of the musculoskeletal system requires an in-depth understanding of the structure, function, and tissues of the body that make up the musculoskeletal system and of how these tissues are integrated to form the organ system that provides the stability and mobility of the human body.

The goal of this course is to provide critical in-depth review of the structure and composition of the tissues that forms the musculoskeletal system including bone, cartilage, tendon, ligament, muscle, and intervertebral disc. In addition, current reviews of essential information concerning the function of the musculoskeletal system will be provided. Finally, perspectives of methodology for a musculoskeletal system, which is essential to perform cell research in vitro or animal study in vivo, will be discussed.
Studies in Peripheral Nerve Surgery

Recent advances in the understanding of nerve injury and nerve regeneration related to development of neurobiology. Peripheral nerve surgery includes decompartment of common yet troublesome nerve compression syndromes, nerve repair and grafting, nerve transfer, treatment of neurona, and muscle/tendon transfer for recovery of lost muscle function. The course will provide students a deeper understanding of various surgical conditions of peripheral nerve disorders and principles of peripheral nerve surgery.

Understanding Malignant Bone Tumors

This course reviews introduction of pediatric and adolescent sports medicine, knee ligament injuries in young athletes, knee cartilage injuries and osteochondritis dissecans, discoid meniscus, patellofemoral disorders in young athletes, femoral head, hip arthroscopy, hip and pelvis injuries in young athletes, spinal injuries in young athletes, and supplements and ergogenic drugs in young athletes. With this course, students are expected to realize the differences of pediatric/adolescent sports injuries as well as the current controversial issues and learn appropriate way to approach them.

Understanding Sports Injury and Knee Surgery

This course intends to give an overview of the general aspects of malignant bone tumors, including molecular biology, pathogenesis, diagnosis and treatment modalities. Especially, this course deals with various options of limb salvage surgery as treatment modality, providing deeper understanding of treatment of malignant bone tumors to medical students.
studied. With regard to the treatment, this course will cover various treatment strategies from conservative treatment to surgery. This course will deal with indication of surgery. Principle of surgical treatment will also be discussed.

**M2952.000200**

Understanding and Clinical Application of Reverse Total Shoulder Arthroplasty

Reverse total shoulder arthroplasty has been extensively studied. However, this surgery has been subject to various complications such as failure of glenoid component. Complications of reverse total shoulder arthroplasty and explore the techniques through looking at the present from past to present.

In order to manage lots of musculoskeletal problems, we need to use several kinds of biomaterials. This course will first review the characteristics of biomaterials in the musculoskeletal field. Then the biologic responses to the biomaterials in the body will be discussed. Moreover, current updates in the tissue engineering and the regenerative medicine which are based on the biomaterials will be reviewed.

**M2952.000400**

Treatment of Upper and Lower Limb Fractures and Soft Tissue Reconstruction

The population of our society is aging. The number of people enjoying a variety of leisure is increasing, and the volume of traffic is growing. As a result, there is an increase in the variety and number of trauma patients with fractures and soft tissue injuries. Therefore, professional education is needed for appropriate treatment of these traumas. Appropriate treatment of upper and lower limb trauma is especially important, since our limbs are essential for activities in our daily life. This course will review fractures and injuries of soft tissue such as ligaments, tendons, skin, nerves, and vessels, which are related to upper and lower limb traumas. We will also be discussing a variety of trauma cases.
The Understanding of surgery for acquired valvular heart disease is composed of knowledge for surgical management of valvular heart disease. A student in the course of Understanding of surgery for acquired valvular heart disease will comprehend the anatomy of mitral, aortic and tricuspid valves and pathophysiology of valvular heart disease. This topic also covers surgical decision for indication of surgery, techniques for valvuloplasty, update techniques.

802.634A

Introduction to Extracorporeal Circulation

This course will cover the physiology, hemodynamics, influence on systemic organs, and methodology of the cardiopulmonary bypass. Students will learn the theoretical and practical base of the cardiopulmonary bypass. Specific items are as follows: 1) anatomy and physiology of the cardiopulmonary bypass; 2) influence of the cardiopulmonary bypass on the heart, lung, liver, kidney, etc.; 3) mastery of techniques associated with the cardiopulmonary bypass; and 4) methods decreasing the hazardous effect of cardiopulmonary bypass.

802.635

Seminar & Practice in Vascular Disease

Students will learn the theoretical and practical base of the cardiopulmonary bypass. Specific items are as follows: 1) anatomy and physiology of the cardiopulmonary bypass; 2) influence of the cardiopulmonary bypass on the heart, lung, liver, kidney, etc.; 3) mastery of techniques associated with the cardiopulmonary bypass; and 4) methods decreasing the hazardous effect of cardiopulmonary bypass.

802.636

Pleurapulmonary Surgery

This course will focus on the anatomy and pathophysiology of pleural diseases. Students will learn about factors that lead to the decision for lung surgery including indications and surgical techniques. Specific items are as follows: 1) anatomy and physiology of pleural disease; 2) ideal timing of surgery in pleural diseases; 3) surgery of surgical techniques associated with pleural diseases; and 4) suggestions about further treatment options by analyzing various surgical cases.

802.637

Esophageal Surgery

This course will deal with surgical decision for esophageal diseases. Students will learn about factors leading to the decision for esophageal surgery including indications and surgical techniques. Specific items are as follows: 1) anatomy and physiology of esophageal disease; 2) ideal timing of surgery in esophageal disease; 3) mastery of surgical techniques associated with esophageal disease; and 4) suggestions about further treatment options by analyzing various surgical cases.

802.993

Myocardial Protection

This course will deal with myocardial protection after cardiac surgery. Myocardial protection has become more important with the increasing number of ischemic heart diseases, ventricular dysfunctions, heart transplantations, and complex cardiac anomalies. Students will explore the mechanism of myocardial protection and suggest adequate methods of myocardial protection through an analysis of various surgical cases.

M1923.002500

Thoracoscopic Surgery

This course will deal with thoracoscopic surgery after cardiac surgery. Myocardial protection has become more important with the increasing number of ischemic heart diseases, ventricular dysfunctions, heart transplantations, and complex cardiac anomalies. Students will explore the mechanism of myocardial protection and suggest adequate methods of myocardial protection through an analysis of various surgical cases.
The thoracicoscopic surgery (or Video Assisted Thoracic Surgery, VATS) has been expanded in Thoracic surgery part, especially in general thoracic surgery. Recently, as thoracoscopic surgery has shown excellent long-term results and functional results, it holds a standard surgery in oncologic surgery. This course intends to give an overview of the various aspects and a deeper understanding of thoracoscopic surgery.

Surgery of the Spine and the Spinal Cord

802.652 척추외과학 3-2-2

Surgery of the Spine and the Spinal Cord

This course provides knowledge of clinical and basic research in the spine and spinal cord. The students will be introduced to the anatomic and biomechanical aspects and common diseases of the spine and spinal cord. The introduction to recent advancements in this field will provide practical knowledge for research and clinical activities.

Neuro-Oncology in Details

This subject - Ischemic and Traumatic Brain Injury - is approached with neurointensive monitoring and management of brain damaged patients, focusing on the basic mechanism of brain injury based on the secondary brain damage and clinical pathophysiologic conditions in patients, encompassing the neuroprotection, practically and theoretically, along with stem cells therapy.

Understanding Neurogenic Bladder

Diverse neurological diseases and conditions can adversely affect lower urinary tract (bladder and urinary sphincters) function leading to inability to urinate, urinary incontinence, recurrent urinary tract infections, urinary stones, and even kidney failure. This is referred to as neurogenic bladder dysfunction. Conditions that cause neurogenic bladder include...
but are not limited to multiple sclerosis, spinal cord injury, spina bifida, strokes, brain or spinal cord tumors, and herniated discs. Managing the urinary bladder aggressively and correctly is of utmost importance when these conditions exist since mismanagement can lead to the serious complications.

### 802.3202 요로감염특강 3-3-0

**Topics in Urogenital Tract Infection**

Yeast infection is a non-infectious condition of the urinary tract, which is often caused by overgrowth of yeast in the bladder. Yeast infections can lead to significant morbidity and can also contribute to the development of other urinary tract infections. Careful diagnosis and treatment result in successful resolution of infections in most instances. A better understanding of the pathogenesis of UTI and the role of host and bacterial factors has improved the ability to identify patients at risk and prevent or minimize sequelae. Although the vast majority of patients respond promptly and are cured by therapy, early identification and treatment of patients with complicated infections that place them at significant risk remain a clinical challenge to urologists.

### 802.655 비뇨기과학특론 3-2-2

**Recent Advances in Urology**

Recent advances in urology have been made in the understanding of various diseases and conditions. This course will cover the latest developments in the field, including the role of genetics, molecular biology, and imaging technologies in the diagnosis and treatment of urological diseases. The course will also explore emerging areas of research and clinical practice, such as stem cell therapy and regenerative medicine in urology.

### 802.656 비뇨기과학중양학 3-2-2

**Urological Oncology**

Urological oncology is a subspecialty of urology that deals with the diagnosis and treatment of cancers of the urinary tract. This course will cover the epidemiology, pathology, and clinical management of urological malignancies, with a focus on prostate cancer, bladder cancer, and kidney cancer. Students will learn about the latest advances in diagnostic and therapeutic techniques, as well as the role of multidisciplinary teams in the care of patients with urological cancers.

### 802.657 여성비뇨기과학 3-2-2

**Female Urology**

Female urology is a subspecialty of urology that focuses on the diagnosis and treatment of urinary tract problems in women. This course will cover the unique pathological and functional aspects of the female urinary tract, including the diagnosis and management of urinary tract infections, overactive bladder, and urinary incontinence. The course will also address the role of urology in the care of women with cancer of the urinary tract.

### 802.658 소아비뇨기과학 3-2-2

**Pediatric Urology**

Pediatric urology is a subspecialty of urology that deals with the diagnosis and treatment of urological conditions in children. This course will cover the unique pathological and functional aspects of the urinary tract in children, including the diagnosis and management of congenital anomalies, infections, and tumors. The course will also address the role of urology in the care of children with cancer of the urinary tract.

### 802.659 요로결석증 3-2-2

**Urolithiasis**

Urolithiasis, or kidney stone disease, affects millions of people worldwide. This course will cover the epidemiology, pathophysiology, and clinical management of kidney stone disease. Students will learn about the latest advances in diagnostic and therapeutic techniques, as well as the role of multidisciplinary teams in the care of patients with kidney stone disease.

### 802.660 남성과학 3-2-2

**Andrology**

Andrology is a subspecialty of urology that deals with the diagnosis and treatment of sexual and reproductive problems in men. This course will cover the unique pathological and functional aspects of the male reproductive tract, including the diagnosis and management of sexual dysfunction, infertility, and prostate disease. The course will also address the role of urology in the care of men with sexual and reproductive problems.

### 802.661 패쇄성요로질환 3-2-2

**Obstructive Uropathy**

Obstructive uropathy, also known as ureteral obstruction, is a condition that results from obstruction of the urinary tract. This course will cover the epidemiology, pathophysiology, and clinical management of obstructive uropathy. Students will learn about the latest advances in diagnostic and therapeutic techniques, as well as the role of multidisciplinary teams in the care of patients with obstructive uropathy.
The aims of this course are to understand the etiology and pathophysiology of urinary obstructions, and to understand appropriate diagnosis modalities and various treatment methods.

**Chemotherapy in Genitourinary System**

- 758 -

The topics of this course include the following: immunotherapy for renal cell carcinoma; classical and new chemotherapeutic agents used in transitional cell carcinoma of the bladder and upper urinary tract; chemotherapy of testis tumor; and chemotherapy of hormone refractory prostate cancer.

**Endourology**

- 3-1-4

The aims of this course include the following: to understand the basic knowledge of the established diagnostic and treatment modalities using cystoscopy, ureteroscopy and retroperitoneoscopy; and to understand the basic aspects and usefulness of ultrasonography, computed tomography and magnetic resonance image in urology.

**Understanding Phonation**

- 3-0-6

This course will provide the students with leading-edge knowledge about the management of patients with phonation difficulty. The students have to understand the characteristics and the logical process of diagnosis and treatment of phonation difficulties, based on the knowledge of anatomy and physiology. Furthermore, the course will help the student to develop specific skills in management of phonation difficulty, through the correction of the causes of dysphonia.
This class for neurophysiology of olfaction focuses on understanding of how the olfactory neurons work, how the olfactory nerve system works and how to apply the fundamental works of olfactory system to clinical trial. This class will serve as a pioneer because it contains a lot of study to help to treat many neglected patients with smell disorder.

802.3515 비부비동생리학 3-1-4

**Physiology of the Nose and Sinuses**

비부비동생리학은 비강 및 부비동, 그리고 정상 관련 구조에 대한 생리와 관련 질환의 방대한 영역을 연구하는 분야이며, 비부비동학에서 가장 얽합적인 구조가 될 수 있는 비강경에 관한 연구도 포함하고 있다. 또한 알레르기 및 면역반응과 밀접한 관련이 있다. 이 장자를 통해 비강막의 생리와 식도운동, 공기역학에 관한 진전을 이해함으로써, 비인후과의 주요 질환인 만성비부비동, 비 육중, 비염 및 치료에 응용할 수 있다.

This class for physiology of the nose and sinuses starts with the basic study of the nose, paranasal sinuses and related structures, and it includes the study of the nasal mucosa which is the most dynamic part of the nose. Also, this class closely relates to allergy and immunology. This class aims to understand the physiology of nasal mucosa, ciliary movement and airflow dynamics, thus it helps to evaluate and treat the patients with chronic rhinosinusitis, polyps and allergic rhinitis.

802.967 고급청각학 3-3-0

**Advanced Audiology**

 최근 청각학의 주된 연구 대상인 내부 과정의 음자의 여러 전통 방에 이해하고 연구하는 것을 목표로 한다. 학습 내용은 음파 극에 관련된 기저학적 바이오학적 결과 및 분석, 그리고 내재 과정에서의 전기생리학적 현상에 관한 연구에서 시작된다.

This course will cover cortical responses to sound stimulations. Students will practice the acquisition and interpretation of the functional imaging of the brain to sound stimulation and the analysis of the electrophysiologic phenomena of the cortex.

M0000.011800 두경부 재건술의 이해 3-3-0

**Understanding Head & Neck Reconstruction**

두경부암의 수술적 치료에 있어 재건은 암을 제거하는 과정만큼 중요한 부분을 차지하고 있다. 이 강의는 두경부 재건술의 기초 및 여러 가지 임상적 상황에 적절한 두경부 재건술에 대한 개념과 방법, 임상적 의의 등을 실제 환자 증례를 통해 이해함으로써 두경부외과에 대한 이해를 높이고 향후 병기방향을 제시하는 학습의 목표를 한다.

The understanding of Head & Neck reconstruction is essential for H&N surgeon. This course intends to give an overview of the various H&N reconstruction technique with case reviews. The course will deal with the concept, patient-specific decision of optimal reconstruction, providing a deeper understanding of H&N reconstruction for students planning to pursue H&N surgeon.

M0000.011900 청각평형검사의 이해 3-3-0

**Understanding of Hearing and Balance Test**

인구의 고령화와 산업화로 인해 노인성 난청 및 소음성 난청 인구가 급속히 증가하고 있고 신생아 난청과 이차성증에 대한 수요가 증가하고 있다. 본 강좌에서는 청각과 관련 검사를 이해하고 실제 실습을 하여, 신생아 난청진단검사 방법, 이차성증의 확인검사법, 보청기의 치료를 위한 검사, ABR, ASSR 등 훈련진단 검사에 대해 정리함으로써 강조화를 진행한다.

As the aging of population and industrialization, Presbycusis and noise induced hearing loss have increased. In addition, the need of newborn hearing screening and vestibular function test have increased. This course intends to give an overview and practice of the various test of hearing and balance function. The course will deal with new born hearing screening test, recent vestibular function test, test for hearing aids, and, evoked potential test such as ABR, ASSR.

M0000.012000 입상면역학의 기초 3-3-0

**The Basics of Clinical Nasal Immunology**

비강 점막은 우리 몸에 외부 병원체 및 알레르기항원들과 접촉하는 일부 조직으로 이러한 병원체와 환경에 저항하기 위한 다양한 면역 세포를 이룬 면역 기전이 분포하고 있다. 이러한 면역 기전에 이해와 이를 분석하는 연구는 다양한 호흡기 병원균에 의한 감염 질환의 범위를 파악하는 데 많은 도움이 되며, 이전에는 이러한 질병은 근본적으로 치료하는 데 기본 양식을 제공할 수 있다. 이 강의는 비강 점막의 해부학적 조직학적 기분 지식을 바탕으로 호흡기 질병에 특화된 선천성 및 후천성 면역 세포 및 그 다양한 면역 양상을 살펴보고 이해하는 것을 내용으로 한다.

The genetic variability and rapid evolution of respiratory virus or bacteria explain why the cure rate of pathogen-related pulmonary infectious disease has not improved over the last few years. The knowledge of innate immunity in nasal mucosa needs to be better understood for cure of respiratory infection and the application of new therapeutics are necessary for the rational approaches that can be taken to control the infection in the respiratory tract. This course intends to give an overview of the various aspects for basic concepts of nasal mucosal immunology against respiratory infection. The course will provide a deeper understanding of mucosal immunology for students to apply the clinical treatment for patients who are exposed to the respiratory infections.

M0000.012100 안과학전공(Ophthalmology Major)

802.5027 안수술의 합병증 3-3-0

**Complications of Ocular Surgery**

본 강좌에서는 여러 안질환을 치료하기 위한 안수술의 수술 중 혹은 수술 후 합병증을 알아본다. 또한, 이러한 합병증이 야기하는 원인 및 유발인자를 살펴보고 이를 예방 혹은 치료하기 위한 내과적, 수술적 방법에 대해서 알아본다.

The intraoperative and postoperative complications of ocular surgeries will be reviewed. Additionally, the causes and
predisposing factors for ocular surgical complications will be discussed along with strategies to prevent and treat them.

**802.5028**  
안수술의 원론 3-3-0  

**Principles of Ocular Surgery**

본 강좌에서는 눈경절, 안와, 각결막, 공막, 수정체, 방수배출로, 유리체, 망막, 외안근에 행해지는 안과적 수술의 기본적인 원리와 수술기술을 알아보고자 한다. 또한, 새로이 개발되었거나 현재 개
발 중인 최신 수술기술들을 소개하고 앞으로 나가야 할 안수술
의 방향에 대해 살펴본다.

Basic principles and method for ocular surgeries will be reviewed. Additionally, recent development in ocular surgery field will be introduced, and future directions discussed.

**802.679**  
안과병과 눈 3-3-0  

**Systemic Ophthalmology**

눈에 다양한 영향을 줄 수 있는 전신질환은 매우 다양하고 각각의 질환에 따라 안과적 문제도 다르다. 이 과목은 다양한 전신질환에서 생길 수 있는 안질환의 종류와 원인을 통
하여 전신질환의 가능성을 예측하고 그 치료방침을 정하
는데 필요한 지식 습득을 얻는 데 목적이 있다. 안과적으로 비교적 흔하고 중요한 전신질환, 당뇨, 고혈압 등의 안질환과의 관계
의 정확한 것 및 그 입상적 의미를 다루 것이다.

Numerous systemic diseases have diverse ocular manifestations and cause many oculocutaneous problems. This course will study the ocular manifestations of diverse systemic diseases to predict their probability and prognosis and to acquire the knowledge needed for their treatment. Students will learn the clinical relations and significances of relatively common disorders such as diabetes mellitus and hypertension.

**802.680**  
눈의 전기생리학 3-3-0  

**Electrophysiology of the Eye**

눈에 다양한 환상과 질환을 이해하고 설명하는 데에는 눈에 관
련된 전기생리학적 과정의 이해가 필수적이며, 이 과목은 이를
체계적으로 정리하고 있다. 여기에는 눈의 전기생리학적 측면에서 이
용되는 전기생리학적 학년들의 종류와 이들의 원리 및 이와 안질
환에서의 의학적 이용 등을 관련 설명함으로써 한 차원 더 높게
안과적인 문제를 이해할 수 있게 해줄 것이다.

It is necessary to understand the electrophysiology of the eye to comprehend diverse manifestations in the eye. This course will provide a well-organized summary of the electrophysiology of the eye. Students will be able to explain the many ocular electrophysiological apparatuses and to use these instruments, thus enhancing their understanding of ophthalmology.

**802.688**  
안정학 3-3-0  

**Ophthalmic Optics**

최근 광학과 수술 기법의 발전은 금진교정술의 급격한 발전을 가져왔고 많은 관심을 불러일으키고 있다. 정상 눈에서의 광학적
현상에 대한 지식을 습득하고 금진이상이 가지는 그 입상 양상
을 이해하며 이를의 치료에 있어서 사용되는 안경, 콘택트렌즈, 금
정교정술의 원리, 적응증, 합병증에 관한 체계적으로 습득한다. 최
근 급속히 발전하는 최신 지식을 접할 수 있는 유익한 수련 과목
이 될 것이다.

Thanks to the development of optics and refractive surgery, there have been many recent achievements in the refractive correction of refractive errors. This course will cover the opt-
ic phenomena of the normal eye, clinical manifestations of refractive errors, and the principles, indications, and complications of glasses, contact lenses, and refractive surgery. It will provide the latest knowledge of the rapidly developing field of ophthalmology.

**M0000.011000**  
고안압증 및 녹내장 3-3-0  

**Ocular Hypertension and Glaucoma**

이 과목의 수련목적은 안압과 녹내장의 정확한 개념의 이해를
통해 고안압증과 녹내장 사이의 차이점, 안압 관계, 안압적 의미에
대한 지식 취득과 나이가의 의학적, 치료 원리의 이해를 돕는 데
두고 있다. 따라서 이 과목의 수련을 통해 일반적으로 잘못 받
아들이고 있는 녹내장의 원인 및 임상 양상을 올바로 이해할 수
있으며 최근 급속히 발전해가는 최근인기의 정서를 가능하게 한다.

This course will study the accurate definition of ocular hypertension and glaucoma, explore the differences, associations,
and clinical significance between ocular hypertension and glaucoma, and understand their diagnosis and treatment. Students will come to understand the etiology and clinical manifestations of glaucoma as well as the latest theories and findings on them.

**M0000.012100**  
안면역학 3-3-0  

**Ocular Immunology**

안면역학(眼免疫學)의 목적은 안과 질환과 관련이 있는 면역학
적인 기본 개념을 이해하고 염증성 안과 질환와 입술에 필
요한 원리적인 지식을 정립하는데 있다. 안면역학에 대한 이해를
고취하기 위하여 현재 진행 중인 대인성 포도막염에서 면역세포의
역할과 면역체포 조직화역학에서 유전자와 면역에 대한 연구에
대해서 깊이 있게 살펴보는 시간을 포함한다. 국적으로 본 과목
과목을 통해 안과질환 안과 질환을 개인의 상태에 맞추어 이해
하고 치료하는 능력이 함양되도록 한다.

The aim of ‘Ocular Immunology’ is to understand basic immunological concepts related to ocular diseases and to build the principal knowledge for diagnosis and treatment of ocular inflammatory disorders. In order to develop an in-depth understanding in ocular immunology, it also includes a review class about ongoing research projects such as studies about immune cells in endogenous uveitis and genetic variations in Behcet’s disease. This course of Ocular Immunology will raise an ability to understand and treat patients with inflammatory ocular diseases according to an individual status of inflammation.

**M1923.001100**  
안구운동장애 3-3-0  

**Ocular Motility Disorders**

본 강좌에서는 안구 운동의 조절 기전을 살펴보고, 안구 움직
상태의 범위를 벨어지지 아니하고 다양한 동기활동에 대해 알아보고자 한다. 또한 안과적 수술 후 발생하는 안구 움직
상태의 원인을 살펴보고 이에 예방 및 치료방법에 대해 알아본다.

This course will provide a better understanding of the ocular motility mechanism. The pathophysiology and treatment strategies of ocular motility disorders will be reviewed. Causes, preventive measures and treatment options for ocular
motility disorders which occur after diverse ocular surgeries will be also discussed.

M1923.001200 Writing a Ophthalmologic Paper; Basics and Advances

This course will provide a better understanding of basics and advances in writing a ophthalmologic papers. The course will also include a techniques for english writing a ophthalmologic articles. The advanced methods required in special field such as refractive surgery, cornea, retina, glaucoma, strabismus, oculoplasty and retina for the writing will be also discussed. Diverse point of view in discussion will be also discussed.

M1923.002600 Introduction to the Ocular Angiogenesis

Angiogenesis

Anatomical, physiological and biochemical characteristics of normal vasculature in the eye will be introduced in this lecture. Moreover, pathological mechanisms and characteristics of intraocular neovascularization from various eye diseases such as diabetic retinopathy, retinopathy of prematurity, glaucoma, strabismus, oculoplasty and retina for the writing will be also discussed. Diverse point of view in discussion will be also discussed.

M1923.002600 Introduction to the Ocular Angiogenesis

This course will provide a better understanding of basics and advances in writing a ophthalmologic papers. The course will also include a techniques for english writing a ophthalmologic articles. The advanced methods required in special field such as refractive surgery, cornea, retina, glaucoma, strabismus, oculoplasty and retina for the writing will be also discussed. Diverse point of view in discussion will be also discussed.

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M1923.002600 Introduction to the Ocular Angiogenesis

This course will provide a better understanding of basics and advances in writing a ophthalmologic papers. The course will also include a techniques for english writing a ophthalmologic articles. The advanced methods required in special field such as refractive surgery, cornea, retina, glaucoma, strabismus, oculoplasty and retina for the writing will be also discussed. Diverse point of view in discussion will be also discussed.

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802.2232A

Genitourinary Radiology

MRI imaging of the abdomen is becoming more prevalent in the diagnosis and treatment of abdominal diseases. The role of current imaging techniques, including ultrasound, computed tomography (CT), and magnetic resonance imaging (MRI), is increasing. In this course, students will study the characteristics of ultrasound, CT, and MRI, as well as the principles of functional imaging, diffusion imaging, and spectroscopy. Students will learn how to optimize imaging protocols for various abdominal diseases.

802.2233

Brain Anatomy

Recent advances in MR imaging technology enable the evaluation of the brain function. In this course, we will study the brain function by using imaging techniques including MR. Detailed learning objective is to understand the principles of functional imaging, perfusion imaging, diffusion imaging, and spectroscopic and to apply these techniques to clinical disease. In addition, we will discuss the limitations of current imaging modalities and clarify the pathology.

802.2234

Abdominal Radiology

With recent technological advance in multidetector row CT, the use of these imaging modalities for the diagnosis of abdominal diseases is remarkably increasing, and the role of imaging diagnosis for the treatment of abdominal diseases is getting important. In this class, students will learn basic knowledge regarding physical background of multidetector row CT, methods of radiation dose control, as well as basic characteristics and injection protocol of high concentrated iodine contrast for multidetector row CT. In addition, they will learn how to optimize imaging protocol for various intra-abdominal organs depending on their vascular perfusion characteristics. Furthermore, they will be familiarized to imaging spectrum of abdominal diseases and be accustomed to clinical applications.

802.2311

Prenatal Radiology

The purpose of this course is to assess and understand already reported imaging findings of various diseases of the urinary tract and male and female genital tracts to deepen the level of understanding of those imaging findings on the pathophysiological background. This course may suggest how radiology and pathology can be helpful for each other.

802.5036

Anatomy

Anatomy is the basics to medical science. In this class, we will study basic knowledge of human anatomy to graduate students of non-medical college background. This will include not only conventional but also radiologic and surgical anatomy.

802.5037

Pediatric Radiology

The aims of this course are to understand clinical and imaging features of various diseases occurring in neonates and children, to discuss the characteristics of imaging techniques, and to gain the ability to apply these knowledges to clinical situation. The topics include the whole spectrum of pediatric radiology such as neuroradiology, head and neck imaging, chest imaging, abdomen and genitourinary imaging and musculoskeletal imaging. This course will also introduce pediatric interventional radiology.

802.5038

Oncologic Radiology

The aims of this course are to understand clinical and imaging features of various diseases occurring in neonates and children, to discuss the characteristics of imaging techniques, and to gain the ability to apply these knowledges to clinical situation. The topics include the whole spectrum of pediatric radiology such as neuroradiology, head and neck imaging, chest imaging, abdomen and genitourinary imaging and musculoskeletal imaging. This course will also introduce pediatric interventional radiology.
mography, magnetic resonance imaging, and their clinical applications as well. This course also introduce up-to-date knowledge and research directions of novel technologies such as molecular imaging. In addition, current status and future development of image-guided non-invasive treatment will be discussed.

802.5038 인터벤션주요학 3-3-0

Interventional Oncology

 최근 영상 유도 치료 기법의 발전으로 다양한 종양의 국소치료 성적이 크게 향상되었다. 이 강좌에서는 현재 사용하는 영상의학 적 인터벤션 치료인 경동맥색전술, 경동맥혈장표, 고주파 및 냉 동절제술의 원리를 이해하고 이를 임상에 응용하는 능력을 배양한다. 또한, 새로운 개발되고 있는 비침습적 종양치료법의 최신 저전 인과 연구 방향을 소개하고 미래의 발전 방향을 토의한다.

With recent advance in image-guided therapy, there have been remarkable improvements in local treatment of various tumors. In this course, student will study principles of current radiologic interventions including transcatheter embolization, transcatheter chemotherapy, radiofrequency ablation, cryo-therapy, and their clinical applications as well. This course will also introduce up-to-date knowledge and research directions of novel technologies and discuss the future developments of non-invasive treatments.

802.690 최신전산화단층영상학 3-2-2

Recent Advance of Computed Tomography

전산화단층촬영의 기본원리를 이해하고, 최근 발전되고 있는 나선형 CT, multidetector-row CT의 화학적 특성과 임상적응용에 대하여 소개한다.

This course will cover the physical basics of computerized tomography and discuss the physics and clinical applications of the spiral CT and multidetector-row CT.

802.754A 영상의과학물리학 3-3-0

Diagnostic Radiology Physics

방사선 물리, 초음파와 도플러의 일반물리학과 영상전산기에 응용, 자기공명영상의 물리, 확산과 관류성영상에 대한 물리 및 임상적응 용과 자기공명 분산법의 임상적 이용을 이해한다.

This course will cover the physics of X-ray, general physics and clinical application of ultrasound and doppler, general physics of magnetic resonance imaging, physics and clinical application of diffusion, and perfusion imaging and MR spectroscopy.

802.831A 홍부영상의학 3-3-0

Thoracic Radiology

영상을 이용한 홍부 해부학, 폐질환의 병태생리학적 연관성을 억하하고, 단순흡부촬영, 고해상 전산화단층촬영을 포함한 전산화단층촬영, 방사선유도화의 생감 등의 방법의 적용에 대하여 소개한다.

Students will learn to recognize chest imaging findings with a focus on the anatomy and pathophysiological correlation of various pulmonary diseases and discuss indications of various imaging modalities including chest radiography, CT, high-resolution CT, and imaging guided biopsy in this course.

802.835A 근골격영상의학 3-3-0

Musculoskeletal Radiology

근골격계 질환의 영상진단을 위한 관점과 척추를 포함한 근골격계의 영상 해부학을 이해하고, 질환과 외상에 의한 단순 X선 활영, 자기공명영상, 초음파 검사의 방법과 소견을 익히고, 빠른 조직 생장을 포함한 중재적 시술의 적용을 소개한다.

Students will study the radiological anatomy of the musculoskeletal system including the spine and describe imaging findings of radiography, MRI, and ultrasonography in various musculoskeletal diseases and traumatic injuries, and discuss the indications of interventional procedures such as bone biopsy in this course.

802.836A 복부영상의학 3-3-0

Abdominal Radiology

1. 복부질환의 예방의학적 차원에서 질환의 질병관련을 위한 선병검사에 대한 역할과 해석에 대하여 이해할 수 있다.
2. 복부 장기에 대한 단순 영상검사의 관점에 필요한 해부학과 생리학에 대한 기본 및 고급 개념에 대하여 이해할 수 있다.
3. 복부질환의 진단을 위하여 사용하는 초음파검사, 전산화단층 활영술, 자기 공명영상 등과 같은 영상방법에 대한 기본, 적 응용과 영상소견 해석에 대한 개념 및 원칙과 영상방법을 이용한 중재적 시술에 대한 개념을 이해할 수 있다. 그리고 단순 영상검사 보다 재료적 조영검사, 혈액검사 및 혈관조영술이 이와 같은 질환 들에 대한 평가 및 예후를 이해할 수 있다.

In this course, students will study the epidemiological principles of screening, with a focus on understanding issues related to the interpretation of screening studies and challenges related to the delivery of screening services; assess basic and advanced concepts of anatomy and pathophysiology central to the interpretation of cross-sectional imaging studies in abdominal systems; describe state-of-the-art applications, techniques, and interpretation principles for imaging procedures including US, CT, and MR in the diagnosis of abdominal diseases including the use of imaging-guided interventional procedures; and discuss clinical indications where other techniques (e.g., conventional contrast studies, scintigraphy, and angiography) may be as effective as or more effective than CT or MRI.

802.837A 응급영상의학 3-3-0

Emergency Radiology

응급환자 화자에서 신속한 진단과 적절한 치료가 이루어져 질 수 있도록 응급상황에서의 영상 진단과 비침습적인 영상 유도화의 중재적 치료 방법을 소개한다.

Students will discuss imaging diagnosis and less invasive imaging-guided interventional procedures for emergency care in this course.

802.838 자기공명공명법개론 3-3-0

Introduction of MR Spectroscopy

이 <자기공명공명법개론> 과정은 학생들에게 임상적인 자기공명분광법의 개요를 제공하는 대학원 과정이다. 여기에서는 자기공명공명법의 기본원리; 기술적인 발전, 그리고 수소원자와 다른 원자핵의 자기공명공명법의 비교를 다루리겠다. 여기에서는 최근의 기술적인 발전과 임상적 응용에 초점을 맞춘 것이다. 또한 자기공명공명법을
This course will provide students with an overview of clinical MRS. Students will deal with the basic principles and technological development of MRS and compare MRS of protons and other nuclei. Current technical advances and clinical applications of proton MRS will be focused on. In addition, numerous research areas that use MRS will be covered, with a review of current literature. The course will consist of student seminars, journal reviews, and on-going research topic presentations under faculty guidance. Active participation by students will be encouraged.

802.839 자기공명영상학 3-3-0
Magnetic Resonance Imaging

802.843 초음파진단학 3-3-0
Ultrasonographic Diagnosis

802.844A 중재적영상의학 3-3-0
Interventional Radiology

802.2239 주술기수혈의학 3-3-0
Perioperative Transfusion Medicine

Students will study the phenomenon of nuclear magnetic resonance, principles of magnetic resonance imaging, pulse sequences for magnetic resonance imaging, MR signal intensity of various tissues, MR anatomy of the human body, principles and techniques of MR angiography, cine MR, and MR contrast media, and clinical applications of magnetic resonance imaging.

This course will cover the basic physics of US imaging and Doppler phenomena, new US imaging techniques, US anatomy of the abdomen and pelvis, US contrast agents, and clinical applications of US.

The goal of this course is to understand of the basic technological principle which is applied to Anesthesiology. Especially, students should learn the technology which has potential hazard to patients and clinical data which is needed special caution to analyze them. In detail, Students are going to learn the usage of electricity and relating safety issues, basic fluid dynamics, basic principles of invasive and non-invasive measurement instruments, the communication principle between intruments, the electromagnetic wave and relating safety issues and analytic tools used for technological data analysis.

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의과학 학부과정인 해부학, 조직학, 생리학, 생화학, 약리학을 이수하거나 이와 상응하는 과목을 선수 학과 과목으로 이수하고, 마취와 자율신경계 1을 학습한 학생을 대상으로 한다. 세부 학습 목표는 다음과 같다. (1) 검수(sleep)의 조절, (2) 동공, (3) 자가의 신경근병변, (4) 동공과 자율신경계 (5) 노화와 운동, (6) 자율신경계 폐행, (7) 저속 자율신경계 부정, (8) 하지마비와 사지마비 (9) 고산증에 대한 자율신경계의 작용, (10) 우주환경에서의 자율신경계, (11) 자율신경계 기능의 검사.

Prerequisite subjects are anatomy, histology, physiology, biochemistry, and pharmacology in undergraduate course. Also, Anovonic nervous system in anesthetica 1 should be studied before taking this lecture. Students learn the following subtopics during this course. (1) Sleep and wakefulness, (2) the pupil, (3) trophic disorders, (4) pain and the autonomic nervous system, (5) aging and exercise, (6) autonomic neuropathies, (7) progressive autonomic failures, (8) paraplegia and tetraplegia, (9) autonomic adaptation to high mountain, (10) the autonomic nervous system in space, and (11) testing autonomic system in anesthesia.

The purpose of this lecture is to understand of theoretical and practical aspects for the management of acute pain included (1) Acute pain significance and assessment: definition of acute pain, measurement of pain, harmful effects of undertreated acute pain, better management of acute pain, (2) Pharmacology of opioids: opioid receptors and endogenous opioids, side effects of opioids, anagonists, dosage determination, (3) Pharmacology of local anesthetics: mechanism of action, adverse effects of local anesthetic drugs, equieffective anesthetic concentration, (4) Traditional methods of opioid administration, (5) Patient-controlled analgesia, (6) Epidural and intrathecal analgesia, (7) Other drugs used in acute pain management, (8) Other drugs used in acute pain management, (9) Education for medical staff and patient.
This course will cover the pathophysiology and pharmacodynamics of cardiovascular drugs and anesthetic techniques used in cardiac surgery such as valve replacement, coronary artery bypass, and congenital heart disease surgery.

This course will cover the anesthetic techniques, physiology, and massive transfusion used in liver, cardiac, and renal transplantations.

This course will cover the advantage, indications, anesthetic techniques, postoperative care, and complications of day surgery.

This course will cover pain mechanism, classification and evaluation of pain, drugs and neurolytic therapy used for chronic pain including cancer pain, and postoperative acute pain control.

This course will cover various methods of breast reconstruction, their indications, advantages, and disadvantages based on the embryology, anatomy, and aging changes of the breast.

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This course will cover various methods of breast reconstruction, their indications, advantages, and disadvantages based on the embryology, anatomy, and aging changes of the breast.
학습목표는 특수크리닉을 개설하여 진료하고 있는 바, 대학원생으로서 이의 기초이론과 실제 진료를 이해하고, 그 기술을 습득함을 목표로 한다.

A key concept in the treatment of cleft patients is collaboration among plastic surgery, otorhinolaryngology, and orthodontics. This course will study the basic theories and practical techniques from a team approach regarding cleft patients in special clinics.

802.984 두경부종양  3-2-2
Head and Neck Oncology

증가하는 두경부 종양 환자와 두경부 재건술에 대한 이해를 높이고, 유리피판술 및 근피판을 이용한 다양한 재건술을 이해하고 적용하는 능력을 키우는 과목이다. 학습목표는 두경부 재건의 원리 및 방식의 종류를 이해하고, 이를 적용한 후 재활, 재건 정도에 따른 재건법을 이해한다.

This course will present various reconstructive options including various muscle flaps and free flaps in the treatment of ever-increasing head and neck tumors. Students will study the classification of benign and malignant tumors in the head and neck and the reconstructive means according to the region and severity of the postablative defect.

802.985 성형외과분야의 생체공학  3-2-2
Biomechanics in Plastic Surgery

인공골제작 및 동종골이식, 인공피부제작 및 배양에 대한 최신지견 및 실험실습 등에 대한 강의와 실습이다.

This course will consist of lectures and exercises on the manufacture, culture, and animal experimentation of artificial bones, skin, and allogenic bones.

방사선종양학전공(Radiation Oncology Major)

802.784 임상방사선물리학  3-2-2
Clinical Radiation Physics

임상적 방사선치료의 이론적, 실험적 지견과 임상실험을 통하여 획득한 최신 추세를 통하여 방사선의 방사학적, 방사선의 수학적 모형으로 분석하는 기법과 이에 영향을 미치는 세포 내외의 인자를 익힌다.

This course will cover radiation physics, interaction of various radiation in living matters, radiation-generating apparatus, QA, clinical application of various radiation types, and radiotherapy planning.

802.785 방사선생물학특론(세포)  1  3-3-0
Advanced Radiation Biology 1 (Cell)

방사선조사후의 세포의 반응을 형태, 분열, 기능, 기저 상태에 대한 방사선학적 보수적 모형으로 분석하는 기법과 이에 미치는 세포 내외의 인자를 익힌다.

This course will cover radiation responses on a cellular level, influence toward survival, mitosis, functions, morphology, dose-response relationship, response modelling, and intervening mechanisms and factors.
This course will cover mold therapy, temporary or permanent implantation of radioisotopes in tumor tissues, intra-cavitary or intraluminal brachytherapy, intraoperative radiotherapy, and the efficacy and limitations of each method.

802.797 Radiation Oncology of Head and Neck

This course will cover the principles and practices of radiation therapy for upper respiratory and upper digestive areas as well as mediastinum.

802.799 Gynecologic Radiation Oncology

This course will cover the principles, practices, and therapeutic gains of radiation therapy for cancers in the external or internal female genital organs.

802.800 Pediatric Radiation Oncology

This course will cover the principles and practices of radiation therapy for cancers in children as well as ways of preventing cancer growth and development and of increasing therapeutic gains by avoiding or decreasing later complications.

802.801 Combined Chemoradiotherapy

This course will cover the principles and practices of radiation therapy in combination with other cytotoxic agents such as chemotherapy, surgery, hormonal therapy, immunotherapy, and gene therapy as well as ways of increasing therapeutic gains.

802.802 Radiation Oncology of C.N.S.

This course will cover the principles and practices of radiation therapy for cancers in the cerebral nervous system and ways of increasing therapeutic gains.
학과(Dept. of Medicine)

802.3519 혈전지혈학 3-3-0
Thrombosis and Hemostasis

혈액응고 및 용해 기전에 대한 최신진단을 강의하고 세마나 형태로 학습한다. 또한 혈액응고보존이에서 주요한 염상질환의 방안, 진단 및 치료에 대한 전문 지식을 함께 습득한다. 수강생들은 지정받은 세부주제에 대하여 적절한 문헌으로 발표, 토의한다.

This course will provide lectures on blood coagulation and fibrinolysis mechanism. And recent advance in coagulation field will be discussed in relation to their clinical application. Students will be expected to participate in the presentation of one or more assigned topics along with literature review and actively to take part in class discussions.

802.3610 세포치료제의 제조 및 품질관리 3-3-0
Bioengineering and Quality Assurance in Cell-Therapy Products

한약치료, 이식, 재생 등 여러 분야의 임상에서 그 가능성을 인정받고 있는 세포치료제(방백세포치료제, 증거세포치료제, 유전자세포치료제 등)를 연구하기 위해서는 다양한 세포를 대상으로 다양한 방법을 통해 세포처리가 이루어져야 한다. 이 강좌는 잡색, 분리, 선택, 특성, 분화, 방해보존, 해동, 세척, 재료품 등의 세포처리 과정을 다룬다. 또한 이 강좌는 세포치료제의 품질관리 지표 및 세포치료제별 biomarker 등에 대해서 실로 있게 다룬다.

For cellular therapies including immunotherapy, cellular regeneration, tissue/organ/cell replacement, or gene therapy, we must manipulate various cells in various ways. This lecture focus on collection, separation, isolation, selection, enrichment, differentiation, cryopreservation, thawing, washing, ex vivo expansion, etc. This lecture also deal with issues on quality assurance of cell-therapy products including identity, purity, stability, consistency, potency, stability, biomarker etc.

802.986A 임상화학 3-3-0
Clinical Chemistry

임상화학 검사는 환자의 잔존 및 치료 효과 모니터링을 위해 필요한 필수 검사이다. 본 강좌에서는 지질학을 포함한 각종 임상화학 검사의 원리를 이해하고 임상적 의미를 포괄적으로 파악하도록 한다. 임상화학 검사를 관리하고 유지하기 위해 필요한 통계 기법을 이해하고 실제 데이터에 활용해보므로써 실제 임상검사에 적용할 수 있도록 한다.

Clinical chemistry tests are essential tests needed for diagnosis of patients and monitoring of the treatment efficiency. This course will lead students to understand the principles of various clinical chemistry tests and to grasp the clinical significance comprehensively. This course will deal with the statistical methods required for management and maintenance of high quality clinical chemistry tests and will have a chance to apply to real data. From the experience, students will be able to apply them to real clinical tests.

M0000.01100 이식면역학개론 및 검사 3-3-0
Transplantation Immunology Introduction and Tests

이식면역학은 실제 임상에서의 정기 및 조혈모세포이식, 세포치료제, 종양 면역치료 등과 관련되어 있다. 본 강좌에서는 기본적인 이식면역학에 대한 이해를 바탕으로, 실제 임상에서 쉽게 겪게 되는 조직관련 숙주반응, 세포치료제, 면역반응증후군, 종양면역학, 면역학적 검사 등 다양한 스펙트럼에 대한 강의를 통해 좀 더 실용적인 이식면역학에 대한 이해를 높이고자 함이 그 목적이다.

Transplantation immunology is related to organ and hematopoietic stem cell transplantation, cell therapy, and immunotherapy for cancer in clinical practice. This course includes the lectures about graft-versus host disease, cell therapy, immune tolerance induction, tumor immunology, and immunologic tests based on the basic understanding of transplantation immunology. It aims the promotion of understanding transplantation immunology in more practical view points through wide spectrum of lectures.

M0000.014300 유전자 기반의 분자진단 3-3-0
Genomics-based Molecular Diagnosis

지금까지 유전질환의 분자진단은 단일 유전자 기반으로 진행되었다. 하지만 최근 인간유전자 해독 기술이 발전함에 따라, 단일 유전자 기반의 유전자 검사 기술이 대체되어 신속하고 정확한 분자진단을 가능하게 되었다. 이 강좌에는 유전자 기반의 분자진단을 사례 중심으로 다룬다.

Until now, molecular diagnosis has been based on single gene genetics. However, recent advances of genomic technologies and accumulation of disease-related informations enabled us to do molecular diagnosis using mutational information originated from a lot of genes or even whole genome. This course will deal with genomics-based molecular diagnosis using case study.

M1923.001300 임상미생물학 3-3-0
Clinical Microbiology, Basics and Updates

감염병의 건단 및 추적을 위하여 임상검체에서 미생물을 동정하고 특성을 파악하는 것은 매우 중요하다. 본 과정을 통하여, 임상 미생물 검사실에서 필요한 미생물에 대한 기초표현형은 물론 최신 분자미생물학적 지식 및 술기를 습득하고, 임상에 필요한 적절한 자문을 하기 위한 소양을 함양하며, 최신 미생물 간단기법 및 연구 분야에 응용할 수 있도록 한다.

The identification and characterization of microorganism from clinical specimens is an important step in diagnosis and follow up for infectious disease. Through this course, we will discuss an up-to-date methodology as well as the basic knowledge on characterization of microorganism; we will be qualified as a consulting professionals for infection associated diseases; and we will have competency of doing our self-initiated studies on clinical microbiology in the future.

M2962.000100 혈액암의 정밀형태학 3-3-0
Precision Hematology

혈액혈액학은 혈액학 진단에서 필수적이고 가장 중요한 과정이다. 최근 이에 분자진단 기법이 발전하면서 많은 정보가 의사에게 제공되는데, 골수혈액학의 정밀학적 접근은 의사이나 보고서의 작성에 필요한 시점이다. 이에 본 과정은, 골수생검, 골수혈액학의 형태학 및 특수염색의 형태학을 학습하고, 그에 대한 분자진단과 세포구조를 통합하여 해석하는 학습자를 삼아보고자 한다.

Histologic examination of bone marrow is pivotal for diagnosis of hematologic neoplasm.

This course covers interpretation of morphology of hematologic malignancies and related tests such as molecular re-
suits and cytogenetic results. Methods and strategy of integrative reports with clinical implication will be suggested. Practice of precision medicine will be presented.

802.780 뇌졸중재활개론 3-3-0

Stroke Rehabilitation

Students will be expected to learn the latest findings in the field of geriatric rehabilitation. The goal of this course is to make students to study and understand the aging-related functional decline and its mechanism. Furthermore evaluation and up-to-date rehabilitation of diseases related with aging will be introduced.

M0000.012900 심장호흡재활  3-3-0

Cardiopulmonary Rehabilitation

Students are expected to have comprehensive understandings regarding cardiopulmonary rehabilitation, which includes theoretical backgrounds, clinical applications, current researches, and various technical aspects. Also students will learn to evaluate the outcome of rehabilitation interventions such as cardiopulmonary rehabilitation after the onset of body function impairment due to disease or injury.

M0000.014400 척수손상재활개론  3-3-0

Spinal Cord Injury Rehabilitation

본 강좌에서는 척수손상의 역학, 평가, 동반된 증상을 포함하여 포괄적인 재활 치료에 대해 논한다. 구체적인 치료에는 급성기 치료, 일상생활활동의 향상, 보행 및 이동, 보조기 처방, 베어 배뇨 관리, 경직의 치료, 기능적 전기 자극 등이 포함된다.

This course will cover the epidemiology, evaluation, combined disorders, and comprehensive rehabilitation of spinal cord injuries. Acute care, ADL, mobility training, orhosis prescription, functional electrical stimulation, bladder bowel care, and control of spasticity will be included.

M2962.000200 검사정보학개론  3-3-0

Introduction to Laboratory Informatics

Laboratory informatics is essential in most of the clinical laboratory works and has an important impact. In the 4th industrial revolution and artificial intelligence era, the situation of the laboratory is predicted to be very different from the current situation, and the laboratory informatics is expected to be the key. However, the majority of the laboratory physicians do not have enough basic knowledge about the laboratory informatics and can not fully utilize it in practice and research. This course provides an opportunity to understand the general situation from the concept of laboratory informatics and the basic technology to the future of the laboratory. Through this lecture, students will acquire basic knowledge to utilize laboratory informatics as a means of conducting clinical laboratory practice and research.

802.630 소아재활의학  3-2-2

Pediatric Rehabilitation Medicine

Students are expected to have comprehensive understandings regarding pediatric rehabilitation, which includes theoretical backgrounds, clinical applications, current researches, and various technical aspects. Also students will learn to evaluate the outcome of rehabilitation interventions such as pediatric rehabilitation after the onset of body function impairment due to disease or injury.

M0000.008300 노인재활개론  3-3-0

Geriatric Rehabilitation

Students will be expected to learn the latest findings in the field of geriatric rehabilitation. The goal of this course is to make students to study and understand the aging-related functional decline and its mechanism. Furthermore evaluation and up-to-date rehabilitation of diseases related with aging will be introduced.

802.778 운동치료학  3-2-2

Therapeutic Exercise

Therapeutic exercise addresses the use of activities requiring physical exertion in the treatment and prevention of illnesses and disabling conditions. The exercises considered in this course will include those for developing endurance, strength, range of motion, and proprioception.
학생들이 척추 재활 치료의 이론적 배경, 임상적 적용, 최신의 연구, 기술적인 부분 등을 포함하여 전반적인 이해를 할 수 있도록 한다. 또한 질병, 손상 등으로 신체기능 저하가 초래되었을 때 척추 계열치료 기법의 도입이 가지는 효과를 평가할 수 있도록 한다.

Students are expected to have comprehensive understandings regarding rehabilitation of the spine, which includes theoretical backgrounds, clinical applications, current researches, and various technical aspects. Also students will learn to evaluate the outcome of rehabilitation interventions such as spine rehabilitation after the onset of body function impairment due to disease or injury.

학생들이 소아에서 근골격계 질환과 합병증이 발생하는 기전, 임상적 양상과 치료, 최신의 연구 등을 전반적으로 이해할 수 있도록 한다. 특히 근골격계 질환이 발생하는 기전을 이해하기 위한 최신 분석 기법과 적용방법을 이해하고 습득하여 향후 다양한 근골격계 질환의 이해에 적용할 수 있도록 한다.

Students are expected to have comprehensive understandings regarding rehabilitation of the pediatric musculoskeletal diseases and complications which includes theoretical backgrounds, clinical applications and current researches. Also students will learn how to apply new techniques for the understanding of other musculoskeletal diseases and complication.

핵의학전공 (Nuclear Medicine Major)

802.3203 분자핵영상의학 3-3-0
Molecular Nuclear Imaging in Medicine

광학과 핵의학영상방법을 이용한 분자영상의 기본원리, in vitro에서 수행가능한 분자영상법의 원리, 소통물 분자영상에 필요한 기와 영상처리, 분자영상으로 영상 가능한 유전체와 단백체의 발현과 작용에 대한 분자생물학적 배경을 다룬다. 이를 통하여 학생은 생체분자영상법 중에 인체 적용이 가능한 분자핵영상학이 갖는 이 해하고, 나아가 분자영상학의 의학적용을 도모할 수 있게 된다.

This course covers the fields of 1) principles of molecular imaging methods using bioluminescence and nuclear imaging methods, 2) various molecular imaging modalities used for cellular and molecular events in vitro, 3) instrumentation and image processing for in vivo small animal molecular imaging, 4) knowledge of in vivo molecular imaging for functional genomics and proteomics in animals and humans. This course aims at helping students understand deeply the discipline of molecular nuclear imaging applicable to humans and proceed further to apply these molecular nuclear imaging techniques for their patients.
clear methods, and development of new research protocols.

802.866 양전자단층촬영법 3-3-0
Positron Emission Tomography
양전자단층촬영의 원리와 기기, 양전자방출핵종의 성질을 이해하고, 양전자단층촬영을 이용한 임상연구와 기초연구에 대한 응용자식을 다룬다.

This course will cover the basic principles of positron emission tomography and discuss the clinical usefulness of and research methods using PET.

802.914 핵의학영상진단연구 3-0-6
Studies in Nuclear Imaging
핵의학의 영상치료 영상제성 방법론을 이용하여 심장과 뇌의 영상진단 방법론을 익히고 새로운 영상치료방법과 표시방법과 외래에서의 방법론을 연습한다.

This course will study the nuclear image process method used in nuclear cardiology and neurology and exercise new image algorithms and parametric imaging.

M0000.014500 핵의학연구방법론 3-3-0
Methods of Research in Nuclear Medicine
핵의학 분야의 첨단 연구방법을 리뷰하고 IRB, IACUC 등 연구윤리에 대한 교육과 타 연구계획에 대한 평가를 기반으로 학생의 연구계획을 세울 수 있는 능력을 함양함.

The aims of the course are to provide students with a training in research methods and techniques, including literature review, research design, IRB guide, writing proposal, and finally to enable students to evaluate critically their own research proposal and those of professional researchers in the field of nuclear medicine

M2964.000100 종양핵의학의 분자생물학적 이해 3-3-0
Molecular Biological Understanding of Oncology in Nuclear Medicine
종양학 분야에 다양한 핵의학 영상 기술 및 치료가 적용되고 있고, 새로운 영상 기법이나 치료 방법이 연구 및 개발되고 있다. 이러한 배경에는 지난 몇 년간 종양의 분자생물학적 연구 성과들에 바탕이 되었다고 할 수 있다. 이 강좌에서는 먼저 핵의학 영상 기법의 분자영상학적 원리 및 활용을 얻어보고, 이러한 영상 소견과 여러 종양의 종류에 따른 분자생물학적 특성을 이해하고 이러한 분자생물학적 특성이 영상을 해석하는데 어떻게 사용되는지를 최근 지식을 배우다.

A variety of nuclear medicine imaging techniques and therapies have been applied in the field of oncology. Also new research and development nuclear medicine techniques have been developed for the past several years. Those achievements of nuclear medicine are based on the progress of the molecular biology of tumors. In this lecture, we first examine the molecular imaging principle and adaptation of nuclear medicine imaging technology and evaluate the molecular biological properties of these image findings and the types of tumors And the biological properties of these molecules are used to interpret images to learn the latest knowledge.
Periodic Health Examination

The aim of this course on chronic diseases, health risks, and many health-related problems is to improve public health. Topics will cover the concepts of health promotion, health risks, and many health-related problems is to improve public health. The course aims are: (1) To understand the NCD’s impact on the public health and economy of World, our nation and local communities; (2) to understand the common shared risk factors and its status in Korea (3) to understand the method of effective prevention, evaluation, and management strategy development and its implementation tools.

Clinical Preventive Medicine

The aim of this course on chronic diseases, health risks, and many health-related problems is to improve public health. Topics will cover the concepts of health promotion, health risks, and many health-related problems is to improve public health. The course aims are: (1) To understand the epidemiologic and policy environment of both health behavior and biomedicine, which helps to understand human behaviors and to promote one’s health by means of behavioral interventions. This field also ranges over diagnostic, therapeutical and rehabilitative technologies in order to derive behavior changes. By understanding of clinical behavioral medicine, students can integrate this field into the primary care, which comprehensive and holistic approaches are essential.

Clinical Behavioral Medicine in Primary Care

Human behaviors reflect personality, habits, one’s surrounding environments, and personal emotion and cognition to specific situations, which have developed during the process of growth. These behaviors tend to be fixed as life patterns by habituation. Clinical behavioral medicine is an interdisciplinary field of both health behavior and biomedicine, which helps to understand human behaviors and to promote one’s health by means of behavioral interventions. This field also ranges over diagnostic, therapeutical and rehabilitative technologies in order to derive behavior changes. By understanding of clinical behavioral medicine, students can integrate this field into the primary care, which comprehensive and holistic approaches are essential.
mary health care program from the perspectives of global medicine; (3) to do case studies of primary health care program in foreign countries, such as Cuba and Brazil, and try to apply the lessons to Korean primary care situation.

M1923.004300

자가건강관리의학 3-3-0

Self-Care Medicine

자가 건강관리(medical self-care)의 기본 개념을 이해하고 근거 중심의 의학적 자기 건강관리 전략을 배우는 과목이다. 정보통신 기술(ICT)의 발전과 의학정보 노출의 기회가 증가하면서 전문적 의학 지식에 대한 일반인들의 접근이 용이하게 되었지만, 이는 의
두 오남용, 잘못된 건강행태, 불편 의료상식 등의 부작용을 낳기도 하였다. 구체적인 학습목표는 다음과 같다. 첫째, 전문의 전료
(specialty care), 자기의료(primary care),자가 건강관리(medical self-care)로 이어지는 세계적인 동향에 의거한다. 둘째, 자가의치료
기반의 자가 건강관리 방법을 검토하고 그 한계점을 이해한다. 셋
째, 지식사회 기반의 자가 건강관리 방법을 이해한다. 넷째, ICT
기술을 통한 자가 건강관리 방법과 장단점을 이해한다.

This course provides the basic concepts and evidenced-based strategies of medical self-care. Through development of ICT(Information and Communication Technology) and increased exposure to medical information, access to professional knowledge has become more easy, however, it also lead to adverse consequences such as drug misuse, inappropriate health behaviors, and incorrect medical knowledge. This course aims: (1) to identify a global movement that flows from specialty care to primary care and then to medical self-care. (2) to understand the methods and limits of the physician assisted self-care. (3) to understand the community-based medical self-care. (4) to understand merits and demerits of medical self-care through ICT.

M2965.000100

건강기능식품의학개론 3-3-0

Introduction of Health Supplements Medicines

일자리의료를 담당하는 의사의 환자로부터 늘 다양한 질병의 예방, 치료, 혹은 건강증진을 관련한 건강기능식품의 섭취에 대한 정보를 전달해 주어야 한다. 자주 해당 건강기능식품의 추천이나 효능 여부에 대한 상담을 요청받게 된다. 하지만 의과대학 교육과정에서 이에 대한 부분이 적지 않았고, 관련 식품의 종류가 그다지 많지 않아 빠리 변하며 근거가 명확하지 않아 이에 대한 적절한 지식 자립과 상
달에 큰 어려움이 있는 것이 사실이다. 이에 이러한 부분에 대한 현상, 제도적 측면의 이유와 함께 온라인 사용되는 건강기능식품
의 종류 및 효능에 대한 이해를 넓히고자 한다.

Physicians, especially primary care physicians, are often requested to give proper information about various health supplements which their patients take for health promotion, prevention and improvement. However, they have not received any health supplements related education during medical school period and resident training. Furthermore, there are too many kinds of health supplements which usually have poor evidence and appear and disappear with rapid cycle in market. Therefore, they have difficulties in giving proper advice to their patients in practice. We aim to understand policy and regulation related to health supplements, market situations, and evidence based effects of some popular health supplements.

802.2111

소생의학 3-1-4

Resuscitation

실제 상황에서 심폐소생술의 최대 효과를 얻고 소생슬치후의 전문
이론, 그리고 환경적, 전문적, 그리고 환경적, 전문적, 그리고
학습의 강화를 목표로 하여 기초적인 소생의학을 체계적으로 이해하고 훈련하며, 동물실험을 통해 심폐소생술의 기
법과 소생 후 치료에 도움이 되는 방법론을 모색하고 응급심폐가, 제
생단계의 자율 및 재생단계의 새로운 모델을 의학적인 연구와 협력
을 통해 개발하고 개량하는 연구를 수행하는 교육을 하고자 한다.

For acquirement of maximal effects of cardio-pulmonary resuscitation in clinical situation and for professional treatment and decreasing of complications of postresuscitation care, it is essential to comprehend and train basic resuscitation. We find new and upgrade resuscitation and postresuscitation method in animal study, and we make better cardio-pulmonary bypass, defibrillator, and automated external defibrillator in cooperation with department of biomedical engineering.

802.2116

응급의료체계 3-3-0

Emergency Medical Service System

응급의료체계는 병원 전단계와 병원 단계로 구분되며, 병원 전단계는 현장에서의 응급처치, 병원까지의 후송, 통신 체계와 관련
된 영역이고, 병원단계는 응급의료 시설, 인력, 장비를 갖춘 의료기
관에서의 응급의료 서비스와 관련되어 있다. 본 과목은 병원 전단
계와 관련된 현장 응급처치, 응급의료 서비스와 관련된 응급처치, 후송 체계 및 장비에 대한 기반적인 지식을 습득하고, 비용-효율
적이며 질적인 병원단계 응급의료 서비스가 제공될 수 있는 체계
을 교육한다.

The Emergency Medical Service system is classified with the pre-hospital stage and the hospital stage of emergency care. The former is related with the emergency management in field, transportation to the hospital, and the telecommunication system. The latter is related with the emergency care based on the hospital. This subject will lectue the basic concepts on the field management, the training of the emergency technicians, the transport and communication system, and the qualified emergency care in the hospital stage.

802.3411

응급증상의학 3-3-0

Emergency Critical Care Medicine

본 과정의 목적은 재량자 쇼크, 출혈성 쇼크, 다발성 외상, 중독
등 응급센터에서 직면할 수 있는 중증 환자에 대한 신속한 평가
및 치료의 과학적 근거를 고찰하고 최신 지식에 대한 토의를 통해
적절한 평가 및 치료에 대한 지식을 함양하며 이를 토대로 기존
치료 방법의 개선 및 새로운 평가 및 치료 지침의 개발을 위한 과
학적 접근 능력을 배양함에 있다.

The aim of this course is to investigate the scientific evidence on the prompt evaluation and treatment, to develop the knowledge on the proper evaluation and management through the review of recent literatures, and to improve the ability to scientifically develop new diagnostic and treatment protocols for the critically ill patients with septic shock, hemorrhagic shock, multiple trauma, or poisoning in the ED.
802.5013 | 전문소아응급처치 3-2-2

**Advanced Pediatric Emergency Care**

Emergency medical service system (EMSS), 6) resuscitation, and 7) child maltreatment.

The course is designed to guide students in gaining a general introduction to the theory and methodology of effective meeting. Students will review and discuss what is participation, what is facilitation, the ladder of inclusion in decision making, environmental condition that promotes participation, group journey, and Focused Conversation Method, Consensus Workshop Method etc. By discussions and practices, students are expected to gain methodology and wisdom to collate wisdoms of participants and make most effective, efficient decisions.

802.2401 | 의학교육의 최신동향 3-3-0

**Current Trends in Medical Education**

The course is designed to introduce current trends in medical education to students. Students will review and discuss the development process of medical education in the 20th century, current educational technologies, current trends in medical education curriculum, educational methodology, and educational environment planning. Students will also take a view of future trends in medical education by analyzing educational and societal backgrounds of each trends. And by critical appraisal of major medical educational literatures, students are expected to gain critical thinking skills on the development of medical education.

802.2801 | 의료환경에서 효과적인 회의 3-3-0

**Meetings that Work in Medical Situation**

The course is designed to introduce the theory and practice of medical education research to students. Although plenty of research data is being accumulated in medical education field, only a little portion is utilized for the improvement and progress of medical education. Students are expected to understand various research methodologies in medical education and gain the ability to plan and perform effective educational research in medicine.

802.2402 | 의학교육연구방법론 3-3-0

**Research Methodology in Medical Education**

This course is designed to introduce current trends in medical education to students. Students will review and discuss the development process of medical education in the 20th century, current educational technologies, current trends in medical education curriculum, educational methodology, and educational environment planning. Students will also take a view of future trends in medical education by analyzing educational and societal backgrounds of each trends. And by critical appraisal of major medical educational literatures, students are expected to gain critical thinking skills on the development of medical education.
교육·학습 방법론을 살펴보고 새로운 창의적 방법론을 탐색하며 이를 각자가 처한 환경에 적용할 방법을 모색하게 될 것이다.

The purpose of this course is to delve into various educational methodologies and the theoretical background of clinical education for medical students and residents. Students will examine teaching-learning methods which have been developed for use in different educational settings such as outpatient clinics, hospital wards, operation rooms, and conference rooms. Students will also seek to find more flexible and creative methods that can be applied to the environment each student is in.

802.5023 촉진적리더십 3-3-0

Facilitative Leadership

사람들의 현실적 참여를 조성하고 이를 통해 구성원들이 의사결정에 대한 주의의식과 사명감을 갖게 하는 촉진적 리더십은 수평적이고 비판위기인 21세기 사회에 적합한 리더십 모델이다. 다각적이고 복잡한 환경의 변화에 대응하는 전문가로서의 역할을 수행할 수 있는 리더십을 배울 수 있는 이 강좌는 촉진적 리더십의 기초를 제공한다.

Facilitative leadership, which encourages committed participation of members and allows them to have ownership and commitment in the decision-making process, is an appropriate leadership model for the horizontal and non-authoritative 21st century society. In particular, when it comes to loosely coupled organizations, the concept of facilitative leadership is powerful as well as valid. This course deals with the philosophy of facilitative leadership, how to promote participation, conflict mediation, and specific skills related to changing image.

802.5025 의과대학의 교육행정 3-3-0

Educational Administration of Medical Schools

의과학자들은 임무의 성과로 의과대학의 교육행정에 깊게 관여할 수 있다. 본 강좌는 의과대학의 조직론으로서의 의과대학 교육행정 시스템의 개발, 조정, 평가가 될 학생들에게 교육기관의 인사관리, 재무관리, 조직관리와 조직변화, 감독관리, 협상, 기금 조성 등 주요 영역에 대한 이론과 방법론을 익히도록 할 것이다.

Due to the nature of work, most of the medical education majors are deeply involved in educational administration of medical schools. This course provides a thorough introduction to theory and methodology on crucial areas of educational administration including human resource management, financial management, organizational diagnosis and change, conflict management, negotiation, and fundraising for students, who will end up developing, coordinating and evaluating the educational administration system of medical schools.

802.5031 의학교육 측정평가 이론 3-3-0

Measurement and Evaluation in Medical Education

본 과목은 의학교육연구의 기초에 되는 통계적 방법 및 세밀 측정이론을 다룬다. 감사의 신뢰도와 타당도, 상관관계와 회귀분석, 통합적, 통합적, 외연관계와 통합적, 연구모델의 개념을 포함한다. 의학교육현장에서 교육평가의 의미, 표준화 설명, 수업 및 학생평가에 사용되는 평가도구의 특성을 다룬다.

This course delves into the applications of statistics and different measurement theories in support of medical education research. The main parts of the course are constituted primarily by reliability and validity, correlation and regression, item development and item analysis, in addition to classical test theory and item response theory. The role of educational evaluation in medical school will be discussed by way of focusing on standardization establishment and practical evaluation tools for class and student assessment.

802.5032 의학교육과정개발과 평가 3-3-0

Curriculum Development and Evaluation in Medical Education

본 과목은 교육과정의 역사적, 철학적, 사회심리적 기초, 원리, 생활에 대한 종합적인 이해를 하고, 교육과정 개발의 절차와 전략을 탐색하며, 의학교육현장에서 의학교육과정의 설계, 운영, 평가를 위한 방법을 배우고 적용할 수 있도록 익히며에 학문적, 실용적으로 도움이 되도록 한다.

In this course, it is really imperative to comprehensively outline historical, philosophical, and socio-psychological backgrounds of curriculum development as well as its essential principles and controversial issues. Each student is also encouraged to investigate how curriculum is being developed through strategic consideration. On ground of such a thorough understanding of curriculum, the course aims to make students equipped with the expertise to design, implement, and evaluate medical education programs.

주계의학전공(Translational Medicine Major)/ 면역학전공(Immunology Major)

802.2001 기초면역학개론 3-3-0

Introduction to Basic Immunology

면역학 연구에 있어서 임상과 기초과학 분야 모두에 적용되는 가장 기본적인 면역학적 개념을 이해하고 익히는 내용을 교육한다. 이에는 면역반응의 특성, 항체반응의 특성, 면역학적 기본적인 사항, B세포 및 T세포의 발달과 활성화 과정, 면역반응, NK cell 등의 내용이 포함된다.

In this course, students will learn about basic concepts in immunology, which are needed in both experimental and clinical immunology. Contents include characteristics of immune response, characteristics of immunoglobulin molecules, B cell and T cell development and activation, immune tolerance, and NK cells.

802.2002 임상면역학개론 3-3-0

Introduction to Clinical Immunology

면역 관련 질환이나 임상적 상황에 대한 기전과 병원을 이해하고 이의 과학적 연구에 관련된 사람들들을 교육한다. 이 과목에서는 알레르기 질환, 자가면역질환, 암의 면역학적 치료, 면역결핍 등에 관한 사항이 다뤄진다.

The objectives of this course are to learn about the basic mechanisms and pathogenesis of diseases and clinical situations of immunologic interests, such as allergic disease, auto-immune disease, organ transplantation, cancer immunotherapy, and immunodeficiency.
802.2004 자가면역질환론 3-3-0

Autoimmune Diseases

The objective of this course is to learn the current issues of pathogenesis, its clinical manifestations, the diagnosis and treatment of autoimmune diseases including rheumatoid arthritis, systemic lupus erythematosus, vasculitis, etc.

802.2099 알레르기학개론 3-3-0

Introduction to Allergology

This lecture deals with the principles of Tissue engineering and regenerative medicine and up-to-date knowledge on the preclinical-clinical application and evaluation of efficacy & toxicity in various disease.

- Introduction to tissue engineering and regenerative medicine
- Biologic and molecular basis of regenerative medicine
- Cells and tissue development
- Biomaterials for tissue engineering and regenerative medicine
- Therapeutic application: cell and tissue therapy
- Regulations and ethics
802.3412

Topics in Molecular Biology of Gastroenterological Diseases

- This course aims to provide broad knowledge on the mechanisms of diabetes mellitus, autoimmune thyroid diseases, pituitary diseases, and adrenal diseases and to study the possible cure of the diseases based on the molecular and translational approaches to treat these diseases. Students will be encouraged to study the basic mechanisms of the hormone-mediated intracellular signaling pathways, and how endocrine diseases can develop by the derangement of these systems.

802.3413

Introduction to Molecular Endocrinology

- This course introduces the genetic, immunologic and molecular mechanisms of major endocrine diseases such as diabetes mellitus, autoimmune thyroid diseases, pituitary diseases, and adrenal diseases and to provide the in-depth understanding of the alterations in the intracellular signaling pathways. The student will be encouraged to study the growth factor-mediated or G-protein-mediated signaling pathways of the peptide hormones and the regulation of transcription of DNA by steroid hormones and their role in the development of endocrine diseases.

802.3414

Topics in Molecular Endocrinology

- This course focuses on the mechanisms of diabetes mellitus, autoimmune thyroid diseases, pituitary diseases, and adrenal diseases and to study the abnormality signal transduction systems and the autoimmune mechanism of the specific endocrine diseases and to study the possible cure of the diseases based on the molecular mechanism of the pathogenesis of the diseases.

802.3415

Introduction to Molecular Pathogenesis of Endocrine Diseases

- This course introduces the fundamental of endocrine diseases, such as diabetes mellitus, autoimmune thyroid diseases, pituitary diseases, and adrenal diseases and to provide the in-depth understanding of the alterations in the intracellular signaling pathways. The student will be encouraged to study the growth factor-mediated or G-protein-mediated signaling pathways of the peptide hormones and the regulation of transcription of DNA by steroid hormones and their role in the development of endocrine diseases.
and adolescents are discussed on an aspect of molecular biology and translational medicine.

802.5049  소개기질환 분자생물학 실험기법 개론 3-3-0
Introduction to Molecular Biology Techniques for Gastrointestinal and Hepatobiliary Diseases

Biologic therapy is cancer treatment that produces anti-tumor effects primarily through the action of natural host defense mechanisms or the administration of natural mammalian substances. Its increased application is the result of a better understanding of the basic aspects of host defense mechanics against cancer and there are many examples of the successful application of biologic therapy to the treatment of human cancers. This course will provide understanding of new developments as well as laboratory techniques.
Over the last years, the number of molecular targeted agents (MTAs) introduced in clinic has been increasing rapidly. Those MTAs have less toxicity than conventional cytotoxic chemotherapy agents. In addition, a few agents showed superior anti-tumor effects for specific indications. This course would provide comprehensive reviews of the neural structures and control mechanisms involved in the generation of various eye movements, saccades, smooth pursuit, and vergence. The students would also have opportunities to participate in the recording and interpretation of abnormal eye movements and in the discussion of their pathophysiology.

Clinical electroencephalography research

Neurophysiology of Eye Movement

Clinical electroencephalography research

This course is prepared to make the students have better understandings on mechanisms and clinical applications of various MTAs. Also, the developmental process of a candidate molecule from the bench to the widely used anti-cancer drug will be covered by this lecture. After finish this course, students could have basic ideas and knowledges for the development of novel MTAs.

Neuropathology of Nervous System Tumors

Neuropathology of Nervous System Tumors

Pathology of brain tumors

Signal transduction in brain tumors

Treatment principle in brain tumors

Clinical electroencephalography research

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Neuropathology of Nervous System Tumors

Pathology of brain tumors

Signal transduction in brain tumors

Treatment principle in brain tumors
Developmental processes. Students will study various pediatric congenital and acquired diseases based on key knowledge of CNS. Especially, we focus on learning the pathogenesis of diagnosis and treatment of various pediatric diseases in the basic characteristics of pediatric CNS and to learn the differentiation from those of adults. This lecture is designed to make students understand the spectrum and manifestation of diseases in central nervous system (CNS) also differ greatly from those of adults. The course, “Neuropathology of Nervous System Tumors”, deals with neuropathology of neuronal tumors including tumors of neuroepithelial tissue, tumors of peripheral nerve, tumors of the meninges, lymphomas and hematopoietic neoplasms, germ cell tumors, and tumors of the sellar region.

Tumors of the nervous system consist of various neoplasms arising from neuroepithelium and related tissue. Histological type and grade of brain tumors are critical for patient’s prognosis. Recently new informations about etiopathogenesis of brain tumors are explosively increasing due to advance in molecular biology. The course, “Neuropathology of Nervous System Tumors”, deals with neuropathology of various nervous system tumors including tumors of neuroepithelial tissue, tumors of peripheral nerve, tumors of the meninges, lymphomas and hematopoietic neoplasms, germ cell tumors, and tumors of the sellar region.

Movement disorder which is best exemplified by Parkinson disease is a good model for studying motor control, pathophysiology and pathogenesis of neurological disorders. The course includes discussion of movement disorder cases and review of related papers, thereby allows students to prepare for clinical research in movement disorders.

Pediatric Clinical Neuroscience

Children’s nervous system has many differences from that of adults. The spectrum and manifestation of diseases in central nervous system (CNS) also differ greatly from those of adults. This lecture is designed to make students understand the basic characteristics of pediatric CNS and to learn the diagnosis and treatment of various pediatric diseases in the CNS. Especially, we focus on learning the pathogenesis of congenital and acquired diseases based on key knowledge of developmental processes. Students will study various pediatric diseases such as congenital anomaly, hydrocephalus, epilepsy, metabolic diseases, and brain tumors.

Introduction of Geriatric Neurology

Geriatric neurology is a specialty which is focused on the nervous system disorders of the elderly. But some geriatric diseases are developed in young adult period, including young onset Alzheimer’s disease or Parkinson's disease. Many topics in neurology field are focused on old age patients because the elderly person has very unique medical condition or physiologic state comparing with young adult. With the same reason that pediatrics is very important specialty in medicine, geriatrics is also another specialty becoming very important area recently concerning about medical services and social burden.

In this course, we will discuss the many issues about the neurological problems, starting with the global issues of geriatrics.
**M1923.001400 중개의학분야에서 R&D개발동향 3-3-0**

**Understanding R&D in Translational Medicine**

중개의학은 R&D 생산성을 극대화하기 위하여 의학과 기초 과학, 공학 등 다양한 분야를 접목하여, 의료현장에 필요한 기술을 개발하고, 유효하게 활용하고자 하는 분야이다. 이를 위해서는 R&D 개발 및 관리에 대한 이해가 필수적이다. R&D 개발 및 관리 과정은 이러한 원칙을 바탕으로 하여, 개발 및 관리에 대한 이해를 높이고자 한다.

Translational medicine is a discipline composed with medical, basic science and technology that aims to improve the health of individuals and the community by "translating" basic research, biomedical engineering as well as other engineering fields, and clinical medicine altogether and to give the way to apply the results of basic research into the treatment of patients. 

This course intends to show the basic method how to combine basic medical research, biomedical engineering as well as other engineering fields, and clinical medicine altogether and to give the way to apply the results of basic research into the diagnosis and treatment of the diseases, and to give the basic concept of interdisciplinary, collaborative research to accomplish translational medicine.
eny and ontogeny of the mucosal immune system, and mucosal inflammation caused by imbalances in the local immune system, will all be covered.

**Introduction to Sleep Disorders**

*As an extension to the previous part on inflammation, the relationship between mucosal inflammation and the formation of certain diseases will be covered.*

The lecture will cover the basic research or modern laboratory methods in the molecular biology to help the students to implicate these methods in the research directly.

Various kinds of new technologies are developed recently. This lecture will cover the basic concepts of sleep disorders. It will help students to strengthen the ability to perform the basic research and to develop their application ability in clinical practice in the field of sleep medicine. Students will learn various diagnostic tools in sleep medicine such as polysomnography, multiple sleep latency tests and actigraphy. Basic researches using EEG, ERP and polysomnography to identify pathophysiology and cognitive dysfunction in sleep disorders will be covered.

**Research Laboratory Techniques of Molecular Biology**

Researches using nonhuman primates continues to provide understanding of nonhuman primates and useful insights into the pathogenesis and treatment in clinical trials. This course will provide the basic concepts of sleep disorders. It will help students to strengthen the ability to perform the basic research and to develop their application ability in clinical practice in the field of sleep medicine. Students will learn various diagnostic tools in sleep medicine such as polysomnography, multiple sleep latency tests and actigraphy. Basic researches using EEG, ERP and polysomnography to identify pathophysiology and cognitive dysfunction in sleep disorders will be covered.

**Nonhuman Primatology for Translational Research**

Nonhuman primates are frequently used in research due to their phylogenetic and physiologic similarity with humans. They are also useful in the study of the development and function of the immune system. However, it would be better to educate the methodology for translational research, which is an increasingly emphasized area in biomedical research.

Nonhuman primates have long been utilized in biomedical research. Nonhuman primates are frequently used in research due to their phylogenetic and physiologic similarity with humans. They are also useful in the study of the development and function of the immune system. However, it would be better to educate the methodology for translational research, which is an increasingly emphasized area in biomedical research.

Biomedical research using nonhuman primates continues to provide important insights into the pathogenesis and treatment of diseases that impact human health. In recent years, translational research has become an increasingly emphasized area in biomedical research. Nonhuman primates have long been recognized as important models for translational research due to their phylogenetic and physiologic similarity with human in responses to treatment in clinical trials. This course will provide understanding of nonhuman primates and useful information for translation research.

**Understanding Respiratory Innate Mucosal Immunology**

Respiratory virus strains regularly evolve and humans have little immunity against these new strains resulting that global pandemics can occur. The genetic variability and rapid evolution of respiratory viruses, which are normally present, is a major factor in these pandemics. The genetic variability and rapid evolution of respiratory viruses, which are normally present, is a major factor in these pandemics. The genetic variability and rapid evolution of respiratory viruses, which are normally present, is a major factor in these pandemics.
Researh (M2822.000200). The current class will instruct graduate students the followings in the context of clinical neuroscience; 1) design of clinical trial and related methodology, 2) hierarchical model, 3) statistical models with random effects, 4) advanced survival analysis model. We hope that, through the current class, students will have a chance to grow up as an independent clinical researcher.

M2822.000700

Understanding Cerebrovascular Diseases

Cerebrovascular disease is one of the most important diseases that threaten human life. With the advances in diagnosis and treatment, mortality rates in Korea have decreased dramatically over the past 30 years. But as the number of stroke survivors with disability increases, more national and social cost are required. In this lecture, we will review the stroke survivors with disability increases, more national and social cost is required. In this lecture, we will review the

M2822.000800

Application of Clinical Research Methodology in Neuroscience Research 1

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M2822.000900

Immuno-Oncology

Immuno-Oncology

M2822.001000

Qualitative Analysis Method in Translational Medicine

Qualitative Analysis Method in Translational Medicine

This class will cover understanding cancer immunologic background/pathophysiology, identifying new biomarkers for immunotherapy, approach to immunotherapy, interpreting the results of clinical trials and implementation into clinical practice.

M2822.000800

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Qualitative Analysis Method in Translational Medicine

Qualitative Analysis Method in Translational Medicine

This class will cover understanding cancer immunologic background/pathophysiology, identifying new biomarkers for immunotherapy, approach to immunotherapy, interpreting the results of clinical trials and implementation into clinical practice.
대학원 (Graduate School)  

타학과 학생을 위한 과목  
(Courses of Non-major Students)  

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Advanced Physiology 1

타학문 전공자들을 위한 인간을 포함한 포유류의 기능과 현상에 관한 강좌이다.

This course will study the body functions of mammals including human beings: general cell physiology, heart and circulation, hormone, kidneys and body fluids, and neurophysiology.

외과학과 (Department of Biomedical Sciences)

*806.501A*  
외과학강독  3-3-0

Readings in Biomedical Sciences

외과학자로서 외과학 분야의 논문을 읽고 이에 대한 과학적 인 비평과 응용할 수 있는 능력을 함양하기 위하여 각 분야별 주제를 정하여 발표와 토론으로 수업을 진행한다. 매주 각 분야에서 중요한 주제를 선정하고 담당교수가 주관하여 발표자와 참여학생이 토론하고 습득한 지식내용을 평가한다. 외과학과 전공 학생들은 본 과목을 석사 및 박사과정에서 필수적으로 이수해야 한다.

Students entering the Biomedical Sciences Graduate Program will normally have a background in upper level genetics, biochemistry, and biology. Students will be able to read, summarize and criticize published scientific papers. Seminar on Biomedical Sciences will be required for all students in her/his coursework.

*806.502A*  
우수의과학자특강  3-3-0

Topics in Biomedical Sciences

전 세계에서 의과학의 선두주자로 활동하고 있는 우수 의과학자들을 매주 초청하여 최신 연구 동향과 연구결과들을 토론할 수 있도록 한다. 의사의학 분야의 의사-과학자들은 본 과목에 의한 정보와 연구결과를 발표하고 토론한다. 전 세계의 의과학자들은 본 과목에 의한 정보와 연구결과를 발표하고 토론한다. 전 세계의 의과학자들은 본 과목에 의한 정보와 연구결과를 발표하고 토론한다.

Worldwide leading biomedical scientists will be invited and recent trends and outcomes of research will be discussed. New research techniques and results are introduced and graduate students talk to the invited scientists in person so that they learn new technologies and develop problem-solving ability.

*806.503*  
인체의 구조와 기능  3-3-0

Structure and Function of Human Body

본 과목에서는 인체의 구조와 기능을 통합하여 시스템별로 강의한다. 주요 강의내용은 다음과 같다. 근골격계와 의학, 세포생리학 및 신경생리학, 심장신장관, 호흡계, 소화계 및 물질대사를, 신장 및 체액조절계, 네트워크 및 생식계, 인체의 발생과 노화 등이다. 강의시수에 별도로 추가되는 실험시간에는 심전도, 동맥혈압조절, 근육/평활근 수축 등의 생리학실험(6)과 인체해부학 실습(6)을 수행한다. 신경학(6)과 생리학(6)을 수행한다. 신경생리학은 신경학(6)을 수행한다.

In this course, integrated knowledge of structure and function will be delivered based on major systems of human body. The major topics include musculoskeletal system and skin (3 h), Cellular physiology and introduction to nervous system (6), Cardiovascular system (6), Respiratory system (6), Kidney and body fluid regulation (6), Digestive system and metabolism (6), Endocrine and reproductive system (6), Development and senescence of human body (6). Topics related with nervous system will be delivered in a separate course (human neuroscience-I), so will not be covered here.

*806.505*  
고급분자세포의과학  3-3-0

Basic Biomedical Molecular Cell Biology

의사-과학자로서 필요한 분자생물학 및 세포생물학에 관한 기본적인 기초지를 강의함으로써 인체 질환에 대한 문제에 과학적으로 접근할 수 있는 방법을 합참할 수 있도록 한다. 이를 위하여 분자세포 생물학에 대하여 의과학 여러 분야의 전문가들이 공동으로 강의를 진행한다. 의과학영 전문 석사 및 박사과정의 경우 필수로 강의를 수강하여야 한다.

Basic knowledges and technologies on molecular biology and cell biology will be essential for the physician scientists to explore the problems on various human diseases. Lectures and seminars on the molecular cell biology will help students to build up the fundamental platform for biomedical researches afterwards.

*806.506*  
고급분자세포의과학  3-3-0

Advanced Biomedical Molecular Cell Biology

분자의학 분야의 의사-과학자들을 양성하기 위해 필요한 분자생물학 및 세포생물학에 관한 기본적인 기초지를 강의함으로써 인체 질환에 대한 문제에 과학적으로 접근할 수 있는 방법을 합참할 수 있도록 한다. 이를 위하여 분자세포 생물학에 대하여 의과학 여러 분야의 전문가들이 공동으로 강의를 진행한다. 분자세포의과학 전공 석사 및 박사과정을 위한 강의로 구성한다.

Current knowledge and technologies on molecular medicine are essential to the physician scientists-to-be. Lectures and seminars on molecular medicine will provide the biomedical students to establish the strong underground on the valuable information on biomedical researches.

*806.508A*  
신경계질환의 병인기작 및 약물 개발 전략  3-3-0

Pathogenic Mechanisms and Drug Development Strategy for Nervous-System Disorders

신경계질환에 대한 분자적 기작의 이해 및 최신 연구동향의 소개, 치료 전략에 대한 이해를 목표로 한다.

The aim of a lecture: To introduce the molecular pathogenic mechanisms and recent research trends of nervous-system disorders for approaching the establishment of therapeutic strategies.
Especially within a field of Tumor Cell Biology among biomedical sciences dealing with lives, this class will focus on diverse and complicated cellular architecture and function and signal transduction, which are responsible for carcinogenesis and tumor metastasis and furthermore on experimental models and their rationales, for the purpose that the students can have basic and clinical insights into tumor cell biology.

**806.513A** 감염 면역 3-3-0

Infection and Immunity

Severe virus, bacteria, and cancer cells, and their interaction, can be found with current immunity and cancer biology. Tumor cells change their characteristics to more aggressive ones to adapt to hypoxic environment. Some tumor cells can adapt to hypoxia and grow and survive and produce neovasculization under hypoxic environment. Some tumor cells can adapt to hypoxia and grow to make intratumoral hypoxic area. Since tumor cells change their characters to more aggressive ones to adapt to hypoxia, they can grow and produce neovasculization under hypoxic environment. This class will focus on experimental models of vaccine development. Students will be evaluated according to the preparation of presentation, devotion in the discussion, and oral (or Quiz) test after the presentation.

**806.515A**암세포환경유전 3-3-0

Tumor Microenvironment

By adapting the technology, various mechanisms have grown so as to make intratumoral hypoxic zone since tumor cells can adapt to hypoxia. Tumor cells can survive and induce neovascularization under hypoxic environment. Sometimes, tumor cells change their characters to more aggressive ones during adaptation to hypoxia, which leads to accelerated growth, tissue invasion, or metastasis. In this lecture, students will study the mechanism underlying tumor adaptation to hypoxia and hypoxia-induced angiogenesis, and discuss about the hypoxia-targeting anticancer strategy.

**806.524A** 유전자변화와 풍성유전체학 3-3-0

Epigenomics in human disease

Epigenomics is a science for evaluating the functions of epigenetic regulation in human diseases such as cancer, metabolic disease, immune disease. In this lecture, Epigenomics in human disease, students will analyze the pathophysiology of human disease in aspect of epigenomics.

**806.526A** 생체간자영상개론 3-3-0

Introduction to Molecular Imaging

Since tumor cells change their characters to more aggressive ones to adapt to hypoxia, they can grow and produce neovasculization under hypoxic environment. Some tumor cells can adapt to hypoxia and grow to make intratumoral hypoxic area. Since tumor cells change their characters to more aggressive ones to adapt to hypoxia, they can grow and produce neovasculization under hypoxic environment. This class will focus on experimental models of vaccine development. Students will be evaluated according to the preparation of presentation, devotion in the discussion, and oral (or Quiz) test after the presentation.

**806.622A** 침분말암의 의학적 이해 3-3-0

Biomedical Basis for Human Diseases

Purpose of this lecture is to teach pathogenesis of human diseases based upon the biomedical aspects. For this purpose, the pathogenic mechanism of human disease will be taught in functional aspect of tissues and organs. In detail, the functional approach for the pathogenesis is based upon physiological, biochemical, and molecular biological knowledge.
Technical development in genomics enabled us to collect enormous information on human genome. Especially microarray and next-generation sequencing techniques could provide high-throughput analysis tools for biomedical research. We will discuss about the techniques and applications of genome information in biomedical fields.

*806.626 세포분자생리학세미나 3-3-0
Seminars on Cellular and Molecular Physiology

이 강좌에서는 세포분자생리학의 기초 개념과 신호전달을 연구하는 국내외 연구자를 초청하여 실제 연구경험을 듣고 연구내용에 대한 토론적 의견교환을 통하여 학습자간의 소통 및 학습 능력을 기르고자 한다.

In this class we will study the current issues on the cellular and biological mechanisms for functional regulation of membrane proteins. In particular, we will have critical discussion on the results presented by principal investigators studying in related academic fields.

*806.630 맞춤약물요법연구 3-3-0
Personalized Pharmacotherapy Research

개인별 약물유전체학적 정보 및 외인적 요인 등을 통합하여 환자별 맞춤약물요법을 연구하고 적용하는데 필요한 지식을 습득한다.

This course is intended to provide knowledge regarding research and clinical applications of tailored individual pharmacotherapy, integrating pharmacogenomic and relevant extrinsic patient-related information course.

*806.631 생체신호전달계의 개관 3-3-0
Biological Signal Transduction

이 교과목은 사람의 건강과 질병 등의 생명현상을 조절하는 생체신호전달계에 대한 개관을 학습한다. 이 교과목에서는 1차전령, 수용체, 나이로의 신호전달계, 신호전달계의 반응작용에서의 신호전달계의 역할 등을 논의한다. 이 과목을 이수한 학생들은 신호전달계의 중요성과 작용기전의 개관을 이해하게 될 것이다.

This subject studies the overview of biological signal transduction that regulates the human life phenomena including health and diseases. This subject covers first messengers, receptors, signal transduction at the membrane, second messengers, phosphorylation of signal transducing molecules, regulation of gene expression by signal transduction system, interaction and adaptation of signal transduction, signal transduction and human diseases. This subject enables students to understand the importance and outline of signal transduction in human life, and it will encourage the study of the mechanism and application of the signal transduction system that involves in a particular human life phenomena.

*806.632 암생리학 3-3-0
Cancer Metabolism

암 대사에 대한 기초 교과과정으로 암발생과정에 있어서 암신호전달과 암 미세환경에 대한 기초지식에 대한 강의를 통해 암 대사에 대한 특성을 이해하고, 암대사에 이용한 암치료 및 건강의 최신지간을 체득한다.

The course will provide an introduction to cancer metabolism and discuss the role of oncogenic signaling and tumor microenvironment during tumor development and progression. Therapeutic and diagnostic perspective of cancer metabolism will also be discussed.

*806.633 종양면역 3-3-0
Tumor Immunity & Immunotherapy

종양과 관련된 면역 과정과, 면역치료에 대한 전반적인 이해와 개론에 대한 강의를 한다.

Tumors associated with the immune process, and an overall understanding of immuno-therapy will be introduced.

*806.634 분자생물학통계 3-3-0
Statistics for Biology and Health

의과학자로서 필요한 다양한 통계적 기초 지식을 학습한다. 이를 바탕으로 주어진 데이터에 대한 적절한 통계 방법을 선택하고, 통계 분석 결과를 해석할 수 있는 능력을 함양한다.

Statistics for biology and health is directed at graduate students in the biomedical disciplines. We will provide a basic introduction to the underlying concepts of statistics for biology and health and a guide to the most commonly used statistical procedures to analyze their own data as well as to interpret the results.

*806.638 망막의 구조와 기능 3-3-0
Structure and Function of Retina

망막은 중추신경계의 한 부분으로 발생학적으로는 뇌의 일부이지만, 기능적으로는 망마신경계의 감각기의 기능도 함께 가지고 있는 독특한 구조와 기능을 가지고 있다. 중추신경계 및 혈관을 연구하는 좋은 모델이며, 이 과목을 이수한 학생들은 망막의 구조와 기능을 공부하는 것이 의과학 연구의 확대 적용에 중요하다.

Retina is a part of CNSI, whose structure is known to be similar to brain. Interestingly, it functions as a kind of sensory organ of PNSI. In addition, retina has been extensively used to study CNSIO neuron and angiogenesis as a simplified model, which is easily analyzed. Therefore, this program would be the most useful course for biomedical researchers to learn retina from basic science to clinical aspects.

*806.643 자가면역과 면역관용 3-3-0
Autoimmunity and Immune Tolerance

인체면역계는 외부병원체를 인식하고 제거하는 역할을 한다. 동시에 면역력은 자가항원에 대해서는 반응하지 않아야 자가면역질환을 예방할 수 있다. 특정항원에 대한 면역력은 비반응성을 면역관용(immune tolerance)로 한다. 따라서, 자가항원에 대한 면역관용의 유도 및 유지는 자가면역질환의 예방 및 치료에 필수적이다. 본 강좌에서는 면역관용의 분자 및 세포기전에 대한 key paper들을 선정하여 group discussion 형식으로 공부함으로써 자가면역 질환의 병원론 및 치료법연구의 토대를 제공하고자 한다.
The immune system recognizes and eliminates foreign pathogens. At the same time, it should not respond to inert self-antigens to prevent self-destruction (autoimmunity). This inability to respond to self-antigens, or inactivation of immune responses to self-antigens, has been called immune tolerance. Thus, induction and maintenance of immune tolerance to self-antigens are critical for the prevention and treatment of autoimmune diseases. In this lecture, the key papers on the molecular and cellular mechanism of immune tolerance will be studied through group discussion for deep understanding of autoimmunity, which will provide theoretical basis for research on pathogenesis and treatment of autoimmune diseases.

*806.644
생체신호의 분자생물학적 이해 3-3-0

Molecular Aspects of Biosignaling

in the context of diabetes. In the end of these sections, we will also look over some of

806.645
시뮬레이션 모델링을 활용한 비용효과분석 3-3-0

Simulational Epidemiology and Cost-effectiveness Analysis

마약과 과학자로서 필요한 비용효과분석의 기본 개념과 모델링을 활용한 시뮬레이션 역학 연구 방법론에 관련된 기초지식을 강의한 다음에 실습을 통해 습득하게 하면, 의사결정 수준도 높아질 것입니다. 본 강좌는 의사과학자로서 필요한 비용효과분석의 기본 개념과 모델링을 활용한 시뮬레이션 역학 연구 방법론에 관련된 기초지식을 강의한 다음에 실습을 통해 습득하게 하면, 의사결정 수준도 높아질 것입니다. 본 강좌는 의사과학자로서 필요한 비용효과분석의 기본 개념과 모델링을 활용한 시뮬레이션 역학 연구 방법론에 관련된 기초지식을 강의한 다음에 실습을 통해 습득하게 하면, 의사결정 수준도 높아질 것입니다. 본 강좌는 의사과학자로서 필요한 비용효과분석의 기본 개념과 모델링을 활용한 시뮬레이션 역학 연구 방법론에 관련된 기초지식을 강의한 다음에 실습을 통해 습득하게 하면, 의사결정 수준도 높아질 것입니다. 본 강좌는 의사과학자로서 필요한 비용효과분석의 기본 개념과 모델링을 활용한 시뮬레이션 역학 연구 방법론에 관련된 기초지식을 강의한 다음에 실습을 통해 습득하게 하면, 의사결정 수준도 높아질 것입니다. 본 강좌는 의사과학자로서 필요한 비용효과분석의 기본 개념과 모델링을 활용한 시뮬레이션 역학 연구 방법론에 관련된 기초지식을 강의한 다음에 실습을 통해 습득하게 하면, 의사결정 수준도 높아질 것입니다. 본 강좌는 의사과학자로서 필요한 비용효과분석의 기본 개념과 모델링을 활용한 시뮬레이션 역학 연구 방법론에 관련된 기초지식을 강의한 다음에 실습을 통해 습득하게 하면, 의사결정 수준도 높아질 것입니다. 본 강좌는 의사과학자로서 필요한 비용효과분석의 기본 개념과 모델링을 활용한 시뮬레이션 역학 연구 방법론에 관련된 기초지식을 강의한 다음에 실습을 통해 습득하게 하면, 의사결정 수준도 높아질 것입니다. 본 강좌는 의사과학자로서 필요한 비용효과분석의 기본 개념과 모델링을 활용한 시뮬레이션 역학 연구 방법론에 관련된 기초지식을 강의한 다음에 실습을 통해 습득하게 하면, 의사결정 수준도 높아질 것입니다. 본 강좌는 의사과학자로서 필요한 비용효과분석의 기본 개념과 모델링을 활용한 시뮬레이션 역학 연구 방법론에 관련된 기초지식을 강의한 다음에 실습을 통해 습득하게 하면, 의사결정 수준도 높아질 것입니다. 본 강좌는 의사과학자로서 필요한 비용효과분석의 기본 개념과 모델링을 활용한 시뮬레이션 역학 연구 방법론에 관련된 기초지식을 강의한 다음에 실습을 통해 습득하게 하면, 의사결정 수준도 높아질 것입니다. 본 강좌는 의사과학자로서 필요한 비용효과분석의 기본 개념과 모델링을 활용한 시뮬레이션 역학 연구 방법론에 관련된 기초지식을 강의한 다음에 실습을 통해 습득하게 하면, 의사결정 수준도 높아질 것입니다. 본 강좌는 의사과학자로서 필요한 비용효과분석의 기본 개념과 모델링을 활용한 시뮬레이션 역학 연구 방법론에 관련된 기초지식을 강의한 다음에 실습을 통해 습득하게 하면, 의사결정 수준도 높아질 것입니다. 본 강좌는 의사과학자로서 필요한 비용효과분석의 기본 개념과 모델링을 활용한 시뮬레이션 역학 연구 방법론에 관련된 기초지식을 강의한 다음에 실습을 통해 습득하게 하면, 의사결정 수준도 높아질 것입니다. 본 강좌는 의사과학자로서 필요한 비용효과분석의 기본 개념과 모델링을 활용한 시뮬레이션 역학 연구 방법론에 관련된 기초지식을 강의한 다음에 실습을 통해 습득하게 하면, 의사결정 수준도 높아질 것입니다. 본 강좌는 의사과학자로서 필요한 비용효과분석의 기본 개념과 모델링을 활용한 시뮬레이션 역학 연구 방법론에 관련된 기초지식을 강의한 다음에 실습을 통해 습득하게 하면, 의사결정 수준도 높아질 것입니다. 본 강좌는 의사과학자로서 필요한 비용효과분석의 기본 개념과 모델링을 활용한 시뮬레이션 역학 연구 방법론에 관련된 기초지식을 강의한 다음에 실습을 통해 습득하게 하면, 의사결정 수준도 높아질 것입니다. 본 강좌는 의사과학자로서 필요한 비용효과분석의 기본 개념과 모델링을 활용한 시뮬레이션 역학 연구 방법론에 관련된 기초지식을 강의한 다음에 실습을 통해 습득하게 하면, 의사결정 수준도 높아질 것입니다. 본 강좌는 의사과학자로서 필요한 비용효
improve the student’s understandings of biomedical background those are required for translational research (diagnosis or therapeutics).

**M1932.000700** 선천면역학 3-3-0

Advanced Course of Innate Immunology

본 강좌는 선천면역 반응과 관련된 다양한 기관들에 대해 이해하고, 선천면역 관련 실험적 기법과 결과들을 이해하는 것을 목표로 한다. 선천 면역 반응은 생명이 이미 가지고 있는 면역 반응으로 정의할 수 있으며 세균이나 미생물의 감염에 반응하여 빠르게 활성화되는 특성을 가지고 있다. 선천 면역계를 구성하고 있는 면역 세포들은 상과세포, 대식세포, 수지세포, 성소세포, 기타 세포들로 구성되어 있다. 본 수업에서는 이러한 선천면역의 세포들을 포함한 선천면역계의 핵심 주제들과 선천 연구동향 등에 대한 내용을 다루어야 한다.

The goal of the class is for you to be able to recognize innate immune responses in a large variety of organisms and to learn to design experiments to dissect these responses. As its name suggests, the innate immune system consists of cells and proteins that are always present and ready to mobilize and fight microbes at the site of infection. The main components of the innate immune system are 1) physical epithelial barriers, 2) phagocytic leukocytes, 3) dendritic cells, 4) a special type of lymphocyte, and 5) circulating plasma proteins. We will cover core topics of innate immune systems in the class.

**M1932.000800** 단백체학 3-3-0

Proteomics

단백질체학 연구방법의 최신 updated 분야 및 분석기술을 강의하고 이러한 연구방법이 시료에 적용되어 중개연구에 이용될 수 있도록 방향을 제시한다. 강의의 내용은 다음과 같다. (1) 시료 단백질체의 발현을 위해 expression proteomics 기술, (2) 시료 단백질체의 post-translational modification인 phosphorylation, glycosylation, ubiquitination 등의 조정에 의한 단백체 변화의 분석 기술, (3) 시료 단백체의 정량적인 분석을 위한 quantitation proteomics 방법, (4) 시료 단백질체 기능을 분석하기 위한 방법으로는 sequence homology, structural proteomics, protein-network을 이용한 functional annotation 기술.

Proteomics uses several research principles such as instrumental analysis, information analysis, statistics and other techniques. In addition, proteomics has been emerging by adapting current proteomics methods with linkage to functional proteomics, protein network and system biology. To cope up with current research needs in proteomics, this lecture will include several proteomics tools such as (1) expression proteomics, (2) proteomics methods to understand the post-translational modifications of phosphorylation, glycosylation and ubiquitination, and (3) function annotation tools.

**M1932.000900** 분자영상프로브 개발방법론 3-3-0

Technology of Molecular Imaging Probes

분자영상법은 새로운 원리 기법을 사용하여 인체와의 영상을 활용하고자 연구개발하고 있는 분야이다. 이는 최근에 나타나는 의약 분야로서 방사선기능원소영상, 간호법학, 자기공명영상 등의 기술들을 포함한다. 이를 위하여 실험부터 도입하기
Molecular imaging is a part of medicine which applies new technologies for imaging human body in order to diagnose and therapy. It is an emerging field and includes various techniques such as radionuclide imaging, optical imaging, and nuclear magnetic imaging. This course includes lectures and seminars about development of probes for detection of diseases, that are essential for molecular imaging.

Designing Translational Research on Biomarkers

Biomarkers are key elements of modern medicine. They are used to predict the risk of disease, to monitor disease progression, and to assess the efficacy of new therapies. This course will provide guidance to design smart strategies for various approaches of biomarkers into clinical practice.

Understanding Systems Medicine

Systems medicine is an integrative approach that considers the interactions between different biological systems. This course will focus on the electrophysiological and biophysical principles of neurological and psychiatric medical issues. This class focuses on 1) the electrophysiological and biophysical principles of neurophysiological studies of synapses, and 2) medical implications of synaptology.

Cardiovascular Physiology and Metabolic Regulation

Cardiovascular diseases and obesity-related metabolic disease are essential for molecular imaging. This course will be operated as team teaching by neural biomedical sciences faculties. This course covers advanced issues of cardiovascular physiology and endocrine regulation of energy metabolism. Also, representative cardiovascular diseases and obesity-related metabolic disease will be covered.

Synaptology

Synapses are the key elements of brain functions. The strength and kinetic properties of synapses are dynamically modified by genetic and activity-dependent factors. Such synaptic plasticity is considered as a neural substrate for a variety of neurological and psychiatric medical issues. This class focuses on 1) the electrophysiological and biophysical principles of neurophysiological studies of synapses, and 2) medical implications of synaptology.

Neuroscience I

This course is fundamentals of structure and function of nervous system. This course will be operated as team teaching by neural biomedical sciences faculties. This course covers cellular, sensory, motor, autonomic system, sleep, learning and memory neurophysiology.
결합이, 결국 면역세포 결합 및 기능 이상, 최종적으로 시냅스 질환으로 연결되는 것이다 할 수 있다. 유전자 존재의 확인 후 각 물질들이 검은 면역생물학적 의미는 그 분자의 전기적 신호이며, 각각의 분자적 수준이 아닌 생체적 수준에서 이해되어야 할 것이다. 이 공정을 통해, 면역 관련 유전자 및 유전자 변이의 생물학적 이해, 생체적 실험 모델의 세정 등에 대해 체계적 접근에 대한 이해를 도모하도록 할 것이다.

Since the human genome sequencing project has been finished, the information on genes and genomics is overflowing, providing the basis for understanding the mechanisms of human disease. Immune disorders, one of the four major human diseases, begin with the defects in genetic materials that lead to cellular dysfunction and defect, and finally systemic disorder in most cases. The immunobiological meaning of each gene should be understood as the by products of evolution and requires in vivo model system. This lecture will focus on how to fish the genes related to immune disorders through genetics and genomics methods, mining the evolutionary meaning of each gene, and how to set up relevant model systems. Through this lecture, the understanding of genes as a whole is expected to be enhanced.
Biomedical Imaging Seminar

The course aims to provide by lecture, presentation, and discussion the basic principle, applications, and updates on a specific topic in association with the biomedical imaging techniques used in basic research, radiology, and nuclear medicine.

Understanding T Cell Regulation

The purpose of this course is developing the ability to establish the basic principles for the properization of pharmaceutical therapy by understanding the mechanism of action of drugs based on knowledges of biochemistry and pathophysiology.

Advanced Nuclear Medicine and Molecular Imaging IV

The course will cover the nuclear medicine and molecular imaging modalities, PET, SPECT, PET/CT, PET/MRI.

Principles of Drug Action

The course intends to provide the seminal concepts in the fields for the last decades, which will lead to development of novel therapeutic interventions for various human diseases originated from abnormal protein degradation.

Understanding Immunobiology of B Lymphocytes and Antibody Production

This course aims to provide the seminal concepts in the fields for the last decades, which will lead to development of novel therapeutic interventions for various human diseases originated from abnormal protein degradation.
(1) B cell development and immunological tolerance that selects out self-reactive B cells, (2) activation and differentiation of B cells into antibody producing cells, (3) clinical manifestations that develop with the processes for (1) and/or (2) dysregulated.

**M1932.003000** 방사선물리학 및 측정학 3-3-0
Radiation Physics and Measurement

진단 및 치료 방사선학 및 핵의학에 사용되는 원자핵 및 방사선 물리와 방사선과 물질의 상호작용, 방사선량 측정 원리 및 방법에 대하여 이해한다.

This course will cover the principles of the nuclear and radiation physics, interaction of radiation with matter, principles and methods for radiation measurement used in diagnostic radiology, radiation oncology, and nuclear medicine.

**M1932.003100** 보건의료 빅데이터 연구방법론 3-3-0
Research Methodology for Health Care Big Data

현재 보건의료 산업은 빅데이터를 기반으로 한 질병발생 예측 및 개인 맞춤형 의료 수요가 증가하고 있으며 활용할 수 있는 다양한 데이터가 급증하고 있는 추세이다. 본 강좌에서는 이와 같이 국내에서 활용할 수 있는 보건의료 빅데이터를 중심으로 연구 방향을 소개하고 실제 빅데이터 분석 실습을 진행한다.

Health care industry is shifting towards analyzing big data as the demands for disease prediction and personalized health care increase. This course will focus on theory and practice behind using health care big data for research purpose and provide the students opportunity to analyze health care big data available in the Republic of Korea. Based on the recent research trend and clinical knowledge, students in this course will be able to learn how to select a topic and apply appropriate methodologies using health care big data. Students in this course will also have a chance to learn about epidemiological design and analysis of disease risk factors.

**M1932.003200** 혈관생물학 3-3-0
Vascular Biology

혈관은 생체의 양분과 산소를 운반하는 중요한 기관이다. 혈관의 생성 및 기능의 변화는 다양한 혈관질환의 병태생리를 이해하는데 중요하다. 본 강좌에서는 혈관 기능에 대한 기본적 지식을 고찰하고, 혈관신생 및 혈관리모델링 변화의 세포 및 분자 기전에 대한 지식과 체계적 접근법을 배운다.

Blood vessels provide oxygen and nutrients to many organs. The knowledge on the formation and the function of blood vessels is important to understand various vascular diseases. This course will review the current knowledge of the basic vascular biology and discuss the latest research regarding angiogenesis and vascular remodeling.

**M1932.003300** 자기공명영상 3-3-0
Magnetic Resonance Imaging

자기공명영상(Magnetic Resonance Imaging (MRI))의 물리학적 기초 원리를 학습하고 이를 바탕으로 현재까지 개발된 다양한 자기공명영상 contrast와 관련 패턴 시퀀스 (pulse sequence)의 이해를 통해 궁극적으로 여러 질병들의 발병기전 연구 또는 진단 등 기초과학 및 임상에 응용 가능한 자기공명영상 기술개발에 필요한 기초 지식을 습득한다.

This class aims to provide the basic principles of magnetic resonance imaging (MRI) in order to understand a variety of different image contrast and pulse sequences associated with them, which are frequently used in basic research and medicine.

**M1932.003400** 시스템의학입문 3-3-0
Introduction to Systems Medicine

인체의 구조와 기능의 볼데생리학적 현상을 바탕으로 이해하기 위해서는 인체를 더 이상 부분이 아닌 전체 시스템으로, 이해해야 하는 이론이 여러 관련 분야에서 등장하고 있다. 본 과목에서는 대용량 데이터 생산에 따라 크게 성장하고 있는 유전자학, 단백체학 등의 바이오정보학과 건강인과 환자의 대규모 코호트 구축을 통한 다각적 환경 연구를 통합한 연구 분야의 소개를 통해 인체의 생리 및 병리 현상을 시스템적으로 이해할 수 있는 기초 지식과 전망을 제시한다.

Systems medicine is an inter-disciplinary field of study that looks at the dynamic systems of the human body as part of an integrated whole, incorporating biochemical, physiological, and environment interactions that sustain life. The course will deal with the introductions to the -omics research through the bioinformatic approach and environmental factors through the epidemiological view for students planning to pursue human diseases and medicines.

**M1932.003500** 핵의학물리특론 3-3-0
Advanced Nuclear Medicine Physics

핵의학물리학과 관련한 최신 특정 주제들을 다룬다. 특히 양전자단층촬영, 단일광자영상 및 이를 이용한 융합영상과 관련된 주제들에 대하여 학습한다.

This will cover advanced special issues in nuclear medicine physics.

**808.501* 임상의과학총론 3-3-0
Introduction for Clinician-Scientist

본 과목은 임상의과학자와 보건의료전문가 양성을 위하여 임상의과학 연구의 이론과 실제적 방법론을 익히도록 하는 것을 목적으로 한다. 학생들은 생명과학적, 의학적 연구를 응용하기 위한 연구의 계획, 진행, 및 논문 작성에 대한 실질적인 방법론을 익혀 이행연구를 효과적으로 수행할 수 있는 능력을 갖추게 될 것이다.
The course is designed to introduce the theory and practice for education of clinician-scientists and health-care experts. Through this session, students are expected to understand various research methodologies for the clinician-scientist and gain the ability to plan and perform effective translational research in medicine.

808.502* | 808.503* | 808.508*
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**Introduction to Public Health Policy**
**Current Trends in Translational Research**
**Advanced Methodology in Primary Care**

This course will consist of seminars on the implication, scope, and methods of public health policy and administration, role of the government and public hospitals, and health resource management based on an understanding of policy processes and decisions. Especially, this course aims at providing students with the basic capability for conducting public health program.

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Health Technology Assessment

This course covers the diagnostic method and treatment method have been developed aimed to treat its gaze and posture. And also new diagnostic technique and direct involvement of the otolith organ in the stabilization of the otolith system in the maintenance of balance function is still obscure. During last two decades, a considerable mass of experimental work and clinical work has demonstrated the mechanisms controlling hair growth.}

Introduction to Hair Biology

This is an introductory course for the basic knowledge of embryonic development and periodic cycle of the hair. The student will gain further understanding of the current concept on immunologic, endocrinological and neurobiological mechanisms controlling hair growth.

Endovascular Neurosurgery

The purpose of ‘Endovascular Neurosurgery’ lecture is understanding of academic background of endovascular neurosurgery. It includes, 1. basic knowledge of endovascular neurosurgery, 2. indicated diseases, 3. practical application, 4. understanding of devices, and 5. development of new techniques and devices.
this course, students could have basic ideas and knowledge for the development of novel study concept.

Introduction to Cardiac Imaging

The vestibular system plays an important role in maintaining the balance. The objective of this course is to study on the anatomy and physiology of the peripheral and central vestibular system. This course also covers various disorders involving the vestibular system and altered body responses to impaired vestibular function.

Sleep Breathing Disorder

The following contents will be included. 1) The pathophysiological mechanism of sleep breathing disorder will be studied. 2) The diagnosis and treatment of sleep breathing disorder will be studied. 3) The complications and co-morbidities of sleep breathing disorder will be studied. 4) Clinical features and implications of pediatric sleep breathing disorder will be studied.

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Recent Advances in Clinical Hepatology

Topics in Pancreatobiliary Diseases

Topics in Neonatal Medicine
이용바탕으로유방암의조기발견,진단방법을이해하도록함.유방촬영,초음파,MRI각영상검사법의장단점을이해하고이들검사법을총계적으로입상에서사용하는것에대해학습함.영상유도의조직강화방법의적용GRADE과적절한방법의선택기준과고위험검진방법등의처치에대해학습함.최신검사법인디지털유도유방촬영,컴퓨터단층조영,자동초음파,탄성영상,관류화학산(MRI,MR분광형,양전자단층촬영의기조및임상적용에대해학습함.

The purpose of this program is to provide graduate students with advances in the detection, diagnosis and management of breast cancer and benign breast abnormalities. At the conclusion of this program, participants will be able to correlate mammography, ultrasound, and MRI findings of normal anatomy and histopathologic findings of benign and malignant breast lesions. Participants should recognize the advantages and disadvantages of the examinations including mammography, ultrasound, and MRI and integrate various breast imaging modalities into their research and practices. Participants should also recognize indications for and selection of appropriate percutaneous image-guided breast interventional procedures and to describe the management of high-risk breast lesions. New applications of digital mammography, CAD, automated ultrasound, elastography, perfusion/diffusion MRI, MR spectroscopy, and PET will be discussed.

808.615 약물역학의 이론과 적용 3-3-0

**Concept and Application Pharmacoepidmiology**

이 과목은 다양한 부패하에서 여러 최근의 이론적 논의들을 검토하는 것을 목표로 하고 있다. 본 교육과정을 통하여수강생들은약물역학의 이론과방법론을이용하고그활용과성과평가에관하여학습한다.구체적으로국내외의지반외환계체에대한소개와자발적부작용신고자료및대규모전산자료를이용한상황자료의탐색,상황정보에대한인과성평가를위한역학연구,위생관리와위생도움,위생의이익의용도와요인과목 연구와적용등의내용을다룬다.

This course is to teach concept, methodology, application and outcome evaluation of the pharmacoepidemiologic approach. It will cover introduction of post-marketing surveillance system of Korea and other countries, signal detection from spontaneous reporting adverse event data and large automated health databases, pharmacoepidemiologic approaches for evaluating causality the detected signals, risk management, risk communication, policy making with risk-benefit balance, etc.

808.616 간상선학세미나 3-3-0

**Seminar in Thyroidology**

본강좌는간상선학에대한최신논문,혹은수강생이당해학 기중참여하고있는연구등에대한발표및토의시간으로구성된 다.로세척,수강생들로하여급간상선학의최신기준을이해하고 스스로 새로운연구분야에접하게함과동시에연구과목을수행하고 발표하는능력을향상시키고자한다.

In this course, students should present recent papers concerning thyroidology or their own research topics, and discuss them in class. This course will acquaint students with recent advance in thyroidology and help them develop skills to do their own research and to make presentations on them.

808.618 뇌신경조절특강 3-3-0

**Topics in Brain Neuromodulation**

이 과목은 뇌조직저항거리성,뇌경로적파절생리학적기전,심장신경계 등 신경계의 회복과조직자유 및 재활을위해입상에적용되는비정상적뇌신경조절기전에대하여다룬다.이분야의최신토론을학습할기회를제공한다.최신발표된논문의발표와토의를통해새로운학습과발표를제공한다.

This course will cover non-invasive or invasive brain neuromodulatory techniques such as repetitive transcranial magnetic stimulation (rTMS), transcranial direct current stimulation (tDCS), deep brain stimulation (DBS) etc applied for brain recovery, neural repair and rehabilitation. This course will give comprehensive and up-to-date information on related topics and will consist of presentations and discussions on the assigned reading materials.

808.619 피지선관련질환병인론 3-3-0

**Pathogenesis of Sebaceous Gland-Related Diseases**

이 과목은피지선관련질환이에대한이론을느취하여수강생들에게최신학계의최신지견을 익히고자한다.이질환들의병인론에대해서는어석도균명할것이없다.이중대표적인질환이예를들면무주위의염이나아드로질,모낭 및피지선상피각화의이상,세균등이있다.그러나각각의원인에대해서는어석도많은연구가진행되고있다.예를들면모낭 및피지선상피각화의이상은왜어디에나생기나요한지해를근로의작용이관여한다는가설도있으나어직증명되지못하고그외에여러가지요인이있음을추정하고있고다룬이론에대한연구와이해가선천되어피지선관련질환치료제의새로운개발이가능하다.

Sebaceous gland-related diseases include acne, rosacea, perioral dermatitis and seborrheic dermatitis. For these diseases, there are many things to be elucidated. In case of acne, which is the most common disease in this category, major pathogenetic factors involved in the development of acne are an increase of sebum secretion, androgen, dyskeratinization of the epithelium of hair follicles and sebaceous gland, and bacteria. For each pathogenetic factor, many studies are being performed. For example, the detailed reason about dyskeratinization of the epithelium of hair follicles and sebaceous gland has not been confirmed. Although hormone may be one of the reasons, but other factors are suggested to be involved. Investigation of the pathogenesis is necessary for the development of new therapeutic agents for these diseases.

808.620 전립선에대한이해 3-1-4

**Understanding of The Prostate**

이 과목은비뇨기과영역에서 전립선비대증은 매우 흔한 질환이다. 이에 대한 이해를 넓혀 입상에 활용할 수 있는 의학자를 양성하고자 한다.

Prostate is one of the most important organs in male genitourinary system. Understanding prostate anatomy, physiology, and diseases will be helpful to researcher and medical doctor in Urological fields.
808.622 임상면역이론과 실제 3-3-0
Practical Approaches for Clinical Immunology

이 과목은 자가면역질환과 자가면역질환과 관련된 면역계 천천히 발생에 대한 임상적 접근이 증가하고 있음. 이에 대하여 면역학적 반응의 기전, 절제 방법, 면역체계의 임상적 이용에 아주 많은 관심을 갖고 있으며, 면역체계의 사용으로 인한 합병증의 발전과 치료 등에 대한 실제적 학습이 필요합니다.

Increasing rate of autoimmune disease and organ transplantation makes clinicians to have the specialized training. Therefore, knowledge of mechanisms of immune reaction ways to regulation of response, pharmacologic interventions, and clinical use of immunosuppressant should be learnt by clinicians. The purpose of this course is to facilitate the way of learning for the approached for various immune reactions.

808.625 암예방관리학 3-2-2
Cancer Prevention and Control

암 발생의 저속적 증가와 함께 암에 대한 국가적 부담이 심각해지고 암 진단과 치료기술 발달로 암 생존자들이 늘어나면서 삶의 질이 강조됨에 따라 암 예방관리의 중요성이 부각되고 있다. 본 과목은 2군 교과목으로 이 강좌에서는 암 예방과 관리의 다양한 분야의 전문가들이 강사로 참여하여 암의 위험요인 예방부터 암 치료 후 관리까지의 포괄적이며 지속적인 측면에서 암의 예방과 관리에 대한 개념을 이해시키고, 암 예방관리의 관련 분야와 미래 발전 방향에 대해 학습함으로써 진료 현장과 국가 암예방관리 문제를 다루는 측면에서 발전하고 미래의 해결방안들에 대해서 학생들의 이해를 돕고자 한다.

As cancer incidence increases and national cancer burden is severe, the importance and interest of cancer prevention and cancer control have emerged. Professors and professionals in cancer prevention and cancer control area participate in this lecture. They provide understanding of concept, methods of outcomes research, assessment of patient-reported outcomes, quality improvement, disparity, prediction and political application. This course enable the student to learn strategies to resolve the cancer care quality and disparity.

808.626 암의료성과연구론 3-2-2
Cancer Care Outcomes Research

본 과목은 질병 변화와 의료기술 발달로 따라 의료의 페턴 그리고 치료의 결과에 대한 관심이 급증하고 있다. 이러한 성과는 만성질환과 그 치료에 대한 반응을 생각할 수만 아니라 삶의 질과 만족도와 같은 환자보고성과(Patient-reported outcomes) 등이 포함되고 있다. 특히 질환의 예방부터 진단, 치료 및 재활, 사망에 이르기까지의 전주기 과정에서 포괄적이면서도 저속적인 환 상의 진료가 제공되도록 하기 위해서는 성과연구가 필요하다.

이 강좌에서는 암 의료에서 성과연구에 대한 개념을 이해시키고 성과연구 설계, 삶의 질 평가, 연구방법론, 질 향상, 평가, 미래 예측 그리고 정책적 활용에 대한 학습으로써 진료 현장과 국가 정책적 측면에서 의료의 질 향상을 위해 해결방안들에 대해서 학생들의 이해를 돕고자 한다.

As pattern of disease has changed and medical technique has improved, interest in pattern of disease and outcomes of treatment and care has increased recently. These outcomes include treatment response, survival and patient-reported out-comes such as quality of life and satisfaction with care. Especially, outcomes research is crucial in order to develop policy and strategies providing comprehensive, continuous and excellent care including disease prevention, diagnosis, treatment, rehabilitation and end-of-life care. This lecture provides understanding of concept, methods of outcomes research, assessment of patient-reported outcomes, quality improvement, disparity, prediction and political application. This course enable the student to learn strategies to resolve the cancer care quality and disparity.

808.630 임상약동학과 3-3-0
Clinical Pharmacokinetics and Pharmacodynamics

임상약물요법에 필요한 기본지식으로써 약물 투여 후 촉발 동태 및 약물작용과정에 대하여 통합적으로 습득한다.

This course is intended to provide knowledge regarding the integration of kinetics and actions of drugs after administration to patients, which constitute the fundamentals of clinical pharmacotherapy.

808.633 근세포생물학 및 운동의학 3-2-2
Muscle Biology and Exercise Medicine

본 과목은 세포 생리학과 운동 및 스포츠 의학의 접목을 통한 근육근육 기능의 변화를 이해하는 것을 목표로 한다. 근세포 구조 및 기능 생물학 등의 기초 영역에서 인간의 운직인리 운동, 건강에 대한 기능적, 통합적 운동 연구 등이 포함적으로 다루게 된다. 따라서 근육 손상이나 질병으로 인한 근육내 분자생물학적, 근세포 생리학적 변화 및 기전에 대한 연구 뿐 아니라, 치료 및 예방을 위한 운동의 임상 적용 및 효과 등을 포괄하게 된다.

The Muscle Biology and Exercise Medicine reviews applied science concerned with cellular, physiological and integrative studies of altered skeletal muscle function. It ranges from structure-functional biology, to integrative and functional studies on human mobility and exercise, and health. Therapeutic and preventive interventions as they relate to skeletal muscle function are included, as well as the studies of the molecular biology and muscle cell physiology of skeletal muscle and injuries, and diseases of muscle.

808.634 임상약리학특강 3-3-0
Topics in Clinical Pharmacology

임상약리학 세부주제 대학 이론과 응용을 공유하고 토론함으로써, 환자 및 약물요법 및 임상약물연구실라에 필요한 지식을 습득한다.

This course will discuss state-of-the-art knowledge regarding advanced topics in clinical pharmacology, which provide the basis for individualized pharmacootherapy and also aid in designing clinical drug studies.

808.636 임상소화기학 3-3-0
Clinical Gastroenterology and Hepatology

본 강좌에서는 소화기 질환, 즉 위장관 및 간담도 질환의 임상적 특성과 진단 및 치료에 관한 최근 경향을 이해하고 임상연구를 진행할 수 있는 능력을 학습하고자 한다. 특히 비알코올성 지방간의 병태생리학적 이해에 접근한 치료와 예후.
The objective of the course is to study the updated knowledge of clinical characteristics, diagnosis, and treatment of gastrointestinal and hepatobiliary diseases. In this course, the students will study the clinical approach to the management of viral hepatitis, liver cirrhosis and liver cancers, as well as pathophysiology and treatment of nonalcoholic fatty liver disease. The course will also include the study on the recent advance on the management of gallstone disease, gastroesophageal reflux disease, gastrointestinal bleeding and inflammatory bowel diseases. Students will be encouraged to learn the practical approach to perform clinical study in the gastroenterology field.

808.639 안면외상치료의 이해 3-2-2
Understanding Facial Trauma Management

This course deals with diagnosis and management of facial trauma. It covers emergency management, background knowledge, clinical experience, and state of the art in facial trauma. Topics include proper diagnostic method, management of bone and soft tissue, fixation of the bony fracture, minimization of complications, and facial reconstruction.

808.803 대학원논문연구 3-3-0
Dissertation Research

Dissertation Research deals with the interpretation of research findings and the formulation of hypotheses. The course is designed to help students develop the skills necessary for conducting original research. Students will learn how to select a topic, formulate a research question, design a study, collect and analyze data, and write a dissertation.

809.400* 임상의학의학과 3-3-0
Clinical Evidence Synthesis and Meta-Analysis

Clinical Evidence Synthesis and Meta-Analysis is a course that teaches students how to synthesize and analyze the results of multiple studies to make evidence-based clinical decisions. The course covers the principles and methods of meta-analysis, including the selection of studies, statistical methods for combining results, and the interpretation of meta-analysis results.

809.400* 임상의학의학과 3-3-0
Statistical Principles of Clinical Trials

Statistical Principles of Clinical Trials is a course that teaches students how to apply statistical methods to clinical research. The course covers the principles and methods of statistical analysis, including hypothesis testing, confidence intervals, and regression analysis. The course also covers the interpretation of statistical results in clinical trials.
statistical approaches used in design and conduct of clinical trials. This course will primarily devote to statistical principles in scientific design and conduct of clinical trials but will also provide a comprehensive introduction to the fundamentals of clinical trials research, with aims at developing students’ potential ability to critically appraise the existing literature as well as to contribute as a competent clinical trials researcher.

M1934.000500

**Clinical Cardiac Electrophysiology**

Cardiac electrophysiology is the science elucidating mechanism, diagnosis and treatment of arrhythmia. These topics are organized for electrophysiologists-in-training and clinicians who want to know in-depth view of arrhythmia in this course.

M1934.000600

**Hospital Epidemiology and Infection Control**

Hospital epidemiology and infection control are the critical core components of many future years of further learning, innovation, and advancement can be based.

M1934.000700

**Abdominal MR Imaging**

Abdominal MR imaging is used for the diagnosis of various abdominal diseases, and therefore, MR plays more important role in diagnosis and management of abdominal diseases than ever before. This course intends to give an overview of the various aspects of abdominal MRI including basic physics, introduction of core sequences, basic features of MR contrast agent, and interpretation of liver, biliary, pancreas, and rectal MRI. The course is designed to provide a deeper understanding of Indian society for students planning to pursue abdominal radiologists.

M1934.000800

**Evidence Based Fractionation of Radiotherapy**

Radiotherapy plays the critical role in the management of cancer. Fractionated radiotherapy is the routine practice according to radiobiological background. Recently various fractionation schedules utilized and the paradigm of fractionation in radiotherapy is rapidly changing. The object of this course is to have an ability to set-up the standard fractionation method through review of recent papers. The main target diseases are head and neck cancers and lung cancers.

M1934.000900

**Recent Development in Radiation Oncology**

Recent advances in radiation oncology are very important, and various treatment options have been recently adopted in the field of radiation oncology due to recent technical advances. Not only limited to the technical prowess, multitude of combination therapy and optimal fractionation and target volume delineation have also been introduced in this field. This course intends to give an overview of the recent developments in the field of radiation oncology not yet introduced in the textbooks providing a deeper understanding of trend in radiation oncology research.

M1934.001000

**Clinical Radiosurgery**

Clinical radiosurgery is one of the most promising area and has been applied to many types of cancers. This lecture will focus on the basic concept and implication for the clinics, which will improve the understanding of radiosurgery.
Studies of Tinnitus

This course intends to give an overview of the various aspects of joint disease and of strategy of individualized primary prevention based on “Cancer cause”. The course helps students to understand the importance of prevention and primary prevention for risk factors of cancers to develop individual cancer prevention programs.

Cancer cause and Primary Prevention Strategy

Cancers are a group of multifactorial complex diseases. They are attributed to various risk factors such as individual lifestyles, behaviors, genes and environmental factors. Risk factors of cancer are considered as “Cause of cancer”. Moreover, individual susceptibility to cancer development is another important attributable cause for cancers. This course intends to give an overview of the various aspects of joint effect for risk factors of cancers to develop individual cancer and of strategy of individualized primary prevention based on “Cancer cause”. The course helps students to understand future direction of personalized primary preventive medicine.

Clinical Trials in Radiation Oncology

This course examines major global health challenges, prevention programs, management policies, and global health diplomacy. Students will analyze current and emerging global health priorities, including emerging infectious diseases, poverty, conflicts and emergencies, health inequity, health systems reforms, and major global initiatives for disease prevention and health promotion. This class will take a multidisciplinary approach to the study of global disease management and global health diplomacy. These issues include but will not be limited to medical practices, preventive techniques, diplomacy, economic factors, climate change, third country aid, the involvement of the pharmaceutical industry, education, food and water contamination and shortages, and sanitation.

Public Health and Emergency Care

Emergency medical services (EMS) has been recognized as an essential system in the filed of global health development. An EMS development can be achieved through a comprehensive and integrated program, not short and vertical approach. This class will provide a generalized knowledge and experience to students on current global EMS development and has a goal to explore the future direction of the global EMS.
Global Emergency Medical Services II

Global emergency medical services (EMS) is a research and education area on knowledge and skill for development of EMS in a community. EMS development includes pre-hospital stage, hospital-stage, and EMS environment. This class aims to experience EMS survey, EMS data collection and EMS assessment, EMS program development, and EMS education.

Clinical Preventive Medicine: Theory and Application

Clinical Preventive Medicine Methodology: Theory and Application

Clinical Preventive Medicine is a course showing the association between epidemiological research and disease prevention by teaching the methodology (theory) of patients’ or general population-based research and search and disease prevention by teaching the methodology course showing the association between epidemiological research and patients’ or general population-based research. This lecture is given on the application examples based on epidemiologist-clinicians collaborative research experience. This lecture is on the basis traditional educational lecture, internet-based lecture, and use of service or problem based learning.

Study Guide for Clinical Research Methodology

To derive high-level evidence from clinical research, it is essential to understand the current state of the methodology of clinical research. This course intends to give a comprehensive overview of the various aspects of clinical research methodology. These include classical research design, principles of conducting clinical research, study protocol development, eligibility criteria and selection bias, statistical analysis and confounding, sample size calculation, and statistical analysis plan. It presents principal concepts in a student-friendly way, and suggests practical approaches to the challenging judgments involved in designing, funding, and implementing.

Introduction to Clinical Preventive Medicine

Clinical Preventive Medicine is the study of factors affecting the causation of health and disease in populations and the application of this knowledge to the planning and evaluation of programs intended to improve health. This course provides an overview of the principles and methods of clinical preventive medicine, with a focus on the prevention, detection, and control of disease and injury. It covers the basic concepts and principles of preventive medicine, as well as the application of these principles to specific areas of public health, such as infectious diseases, chronic diseases, injuries, and environmental health. It also includes an introduction to clinical preventive services and their implementation, with a focus on the role of the primary care provider in delivering preventive care.

Cutaneous Tumor: Basic and Clinical Aspects

Cutaneous Tumor: Basic and Clinical Aspects is a course that introduces the basic science and clinical aspects of cutaneous tumors. It covers the pathophysiology, diagnosis, and management of cutaneous tumors, including benign and malignant neoplasms. The course also includes an overview of the classification and staging of cutaneous tumors, as well as the role of surgery, radiation therapy, and chemotherapy in their treatment. It also covers the role of genetics and environmental factors in the development of cutaneous tumors, and discusses the implications for prevention and early detection.
대학원(Graduate School)  

나노기술은 의료영상, 조기진단, 약물전달시스템 등에서 무한한 가능성을 보이고 있다. 본 강좌에서는 나노기술의 기초, 나노 기술의 활용, 의료영상 기술의 현재과 미래, 바이오칩에서의 나노기술의 가능성, 나노기술을 사용할 수 있는 바이오 마커의 이용, 약물전달시스템에서의 나노기술의 현장, 임상적인 나노 기술에 의한 나노기술, 나노기술의 인허가, 의료기기에서의 나노 기술의 활용, 나노기술의 의학적에서의 시장 가능성 등에 대한 전문가의 강의 및 리뷰를 통하여 진행하고자 한다.

Nanotechnology has unlimited potential in medical imaging, early diagnosis, drug delivery system. In this class, the basics of nanotechnology, the role of nanotechnology in medical imaging, the present and future of medical imaging, the potentials in biochips, the use of biomarkers for nanotechnology, nanotechnology in drug delivery system, nanotechnology in unmet clinical needs, the approval process of nanomaterials, the potential markets of nanotechnology will be discussed by experts.

말초신경 재생의학

Peripheral nerve regenerative medicine is a kind of translational research in tissue engineering and molecular biology, to serve the purpose of replacing or regenerating damaged peripheral nerve tissues. This course will discuss the basic mechanisms of peripheral nerve injury and recovery, cell therapy to enhance axonal sprouting, tissue engineering for neural conduit and allograft, and assessment methods for nerve regeneration.

Projects for Biomedical Device Development

아이디어를 가진 임상의사, 의료기술업체, 담당교수와 함께 팀을 이루어 새로운 의료기술에 대한 아이디어를 창출하고 이를 구현할 수 있는 개발기술을 탐색하고 시제품으로 구현하며, 자세한 산업을 확보할 수 있는 방안을 모색함. 이를 통해 의료기기 개발 과정의 전주기적 실무 경험을 획득함.

Teamimg with the clinicians, industries and advising professors, the students will generate an idea for a new biomedical device to research on the needed technologies, realize a prototype and find a way to obtain a right for intellectual property. In this class, the students are expected to experience a whole practical procedure for biomedical device development.

Emergency Medicalinformatics

응급의료정보학은 응급의학영역에서 구축되는 정보를 응급환자에 대한 정보를 수집하고, 전달하고, 분석하는 기술과 과정을 핵심으로 한다. 이 과정에서 의료 정보의 효율적이고 정확한 전달이 중요하게 여겨지며, 이를 위해 다양한 기술들이 개발되고 있다. 이 과정은 응급의료정보학의 기본 개념과 기술을 이해하고, 응급환자의 사전진단 및 기록, 응급환자 정보의 수집 및 전달, 응급환자 정보의 분석 및 활용 등에 대한 내용을 다룬다.

본 과정을 통하여 의학과나 바이오 기술의 핵심적 핵심의 근간을 이해하며 바이오융합 의학에서 필요한 핵심적 기술 및 도출 지향의 창의적 문제 해결 능력을 확득할 수 있다. 바이오 기술은 의학과에서 핵심적으로 적용될 21세기 인프라에 저항하는 보편적 역량을 위한 의료와 의료기기 개발에 대한 다양한 핵심적 성공 사례를 통해, 향후의 인프라의 적합성을 및 다양한 의학과 분야의 새로운 기술을 핵심적 전술 방법에 대해 실천적 접근 방법을 핵심적 전술 방법에 대해 실천적 접근 방법을 핵심적 전술 방법에 대해 실천적 접근 방법을 핵심적 전술 방법에 대해 실천적 접근 방법을 핵심적 전술 방법에 대해 실천적 접근 방법을 핵심적 전술 방법에 대해 실천적 접근 방법을 핵심적 전술 방법에 대해 실천적 접근 방법을 핵심적 전술 방법에 대해 실천적 접근 방법을 핵심적 전술 방법에 대해 실천적 접근 방법을 핵심적 전술 방법에 대해 실천적 접근 방법을 핵심적 전술 방법에 대해 실천적 접근 방법을 핵심적 전술 방법에 대해 실천적 접근 방법을 핵심적 전술 방법에 대해 실천적 접근 방법을 핵심적 전술 방법에 대해 실천적 접근 방법을 핵심적 전술 방법에 대해 실천적 접근 방법을 핵심적 전술 방법에 대해 실천적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전술 방법에 대해 실현적 접근 방법을 핵심적 전주기적 실무 경험을 확보함으로써, 응급환자의 사전진단 및 기록, 응급환자 정보의 수집 및 전달, 응급환자 정보의 분석 및 활용 등에 대한 내용을 다룬다.

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Through this curriculum, student can understand the convergence of medical science and biotechnology and also get creative problem-solving skills and attitude for innovative performance ability. Through the variety of academic success in the filed of medical science and biotechnology for the treatment of disease and improvement of the human health, student will receive training opportunities on how to solve difficult problems facing in the near future.
의 진단 및 치료에 활용하기 위한 지식과 기술을 다루는 학문으로, 임상정보학의 한 분야이다. 이 수업은 응급환자에 관한 대규모 빅데이터를 처리하고, 음성 영상 정보 등 추가적인 정보를 수집 처리하기 위한 방법론을 연구하며, 해당 정보를 이용하여 조기 진단 및 최적의 치료에 대한 예측하기 위한 일반적인 그리고 특수한 방법을 배운다.

Emergency medical informatics is the one of clinical informatics on medical knowledge and skill which use the information collected from emergency care services area for diagnosis and treatment of emergency patients. The class on EM informatics study the methodology on collecting, mining, and analysing the audio-visual information as well as traditional information, and learn general or special methods to predict the early diagnosis and optimal treatment using the information.
제목: 종양생물학방법론 (Program in Cancer Biology)

803.508 종양신호전달 3-3-0

Signal Transduction of Cancer Cell

종양 신호전달은 암의 발생, 성장, 전이, 세포사멸 같은 과정에서 세포신호전달계가 작용하는 양상과 기전을 공부한다. 이 강좌에서는 신호전달, 수용체, 신호반응기, 2차 전달, 단백질 인산화효소, 단백질 탈인산화효소, 전사인자 등의 작용을 다룬다. 따라서 tyrosine kinase receptor 신호전달계에 의한 발암기전, G 단백질 신호전달계에 의한 세포발성 조절, integrin 수용체에 의한 신호전달, Ras 신호전달계에 의한 암세포 변형, Rho family 단백질에 의한 신호조절, MAPK 같은 dual specificity kinase에 의한 신호전달, Src family 단백질인산화효소에 의한 신호전달, 세포사멸의 조절 등을 포함한다.

This course will cover the signal transduction systems involved in the oncogenesis, growth, proliferation, metastasis, and apoptosis of cancer cells. Signaling molecules, receptors, second messengers, protein kinases, protein phosphatases, and transcription factors are the molecules to be reviewed. Topics will cover tyrosine kinase receptor-activated signal transduction system leading to oncogenesis, growth control by G protein-coupled receptors, signaling by integrin receptors, transformation by ras-signaling pathways, signal transduction by the Rho family, signaling by dual specificity kinase such as MAPK, multiple functions of the Src family protein kinase, and regulation of apoptosis.

803.511 종양학개론 3-3-0

General Concept of Oncology

종양학 개념에 대해 다루는 과목으로서 종양의 형태, 종양의 원인, 종양의 진행, 종양의 분류, 종양의 치료 등에 대해 배운다. 본 과목에서는 질병적인 증상을 강조하여 위암, 간암, 폐암, 대장암, 유방암 등의 존재에 대해 기본적인 지식을 습득하며, 상기 암의 진단 처리 등에 대해 공부하고, 이들을 연구하는 방법에 대한 소개를 한다.

This course will deal with the general concept and clinical aspects of cancer. Common cancers such as gastric, liver, lung, colorectal, and breast cancers will be studied in terms of their diagnosis and treatment. Focus will be on research direction and research tools for the study of the above-mentioned cancers.

803.512 종양생물학방법론 3-3-0

Methodology of Tumor Biology

본 과목의 목표는 암 질환의 특성, 발생과정을 연구함에 있어 실험적 접근 방법을 이해하고, 이를 활용할 수 있어야 하며, 이를 방법에 의하여 도출된 결과들을 종합 분석할 수 있는 능력을 배양하고자 한다. 구체적으로는 1) 암세포주의 배양 및 특성을 이해하고 설명할 수 있어야 한다. 2) 유전자 조작법과 이의 이용방법을 이해하고 활용 분야를 제시함이 있어야 한다. 3) 세포 증식, 세포 사망의 확인 방법을 제시하고 이론적 근거를 설명할 수 있어야 한다. 4) 면역학적 방법을 설명하고 활용방안을 제시, 설명할 수 있어야 한다. 5) 유전자, 단백질 연구 방법을 설명하고 이의 활용 가능한 면 분석 방법을 설명할 수 있어야 한다.

This course will provide the ability to use diverse experimental approaches to investigate the characteristics of various types of cancers and the developmental stages of carcinogenesis. Students will analyze the data obtained from experiments. The following five interrelated subjects will be discussed: culture methods and characteristics of cancer cell line; gene manipulation methods and the exploration of relevant examples; methods for evaluating apoptosis and mitogenic activity and the exploration of relevant examples; immunological methods and their usefulness; and experimental approaches to genomics and proteomics and discussions on their exploitation.

803.601 분자세포생물학개론 1 3-3-0

Molecular Cell Biology 1

본 과목은 세포생물학에 관한 최신지식을 공부한다. 이 강좌에서는 세포의 구성과 에너지 eta, 그리고 세포의 특수기능과 총괄에 대하여 강의한다.

This course will study recent advances in molecular cell biology. It will cover the basic functions and structures of the cell and control for cellular activity by the nucleus.

803.602 분자세포생물학개론 2 3-3-0

Molecular Cell Biology 2

본 과목은 세포생물학에 관한 최신지식을 공부한다. 이 강좌에서는 세포의 구성과 에너지 eta, 그리고 세포의 특수기능과 총괄에 대하여 강의한다.

This course will study recent advances in molecular cell biology. It will cover the basic components of the cell, energy metabolism, and integrative and specialized cellular events.

803.701 임상종양학 3-3-0

Molecular Cancer Epidemiology

본 과목은 임상적인 방법(molecular epidemiology)을 이용하여 암발생 기전을 이해한다. 본 과목에서는 산생정보자료의 종류(e.g., internal dose, biological effective dose, early biologic effect, altered structure/function, premalignant lesions, malignant transformation)를 파악하고, 각 지표가 실제 연구에 활용되는 예를 알아본다. 환경성 발암기전(environmental carcinogenesis)과 환경-유전자 상호작용(gene-environmental interaction)에 대한 기본 개념을 습득하고 임상예방학(chemoprevention)에 대한 기본적인 지식과 실제 사례를 살펴본다.

To learn the definition, methodology, and application of molecular cancer epidemiology. To identify and compare the types of biomarkers (e.g., internal dose, biologically effective dose, early biological effect, altered structure/function, preclinical status, malignant transformation). To evaluate the gene-environmental interaction of environmental carcinogenesis. Finally, to recognize the concept of chemopreventive approach and to list the examples of currently on-going chemopreventive studies.

803.702 임상증상학 3-3-0

Clinical Oncology

학부에서 의학을 전공하지 않은 종양생물학 과정 학생들에게 종양학의 임상학적 지식(종양의 증상, 진단, 화학요법의 원리, 화학요법의 원리 및 translational medicine 등의 이해를 도모하여 기초 연구와의 연계성을 이해하고 임상 임상생물학과의 협동연구
의 기반을 다진다.

Provide clinical understanding of oncolgy (symptoms and signs of cancer, cancer diagnosis, principle of chemotherapy, principle of surgical oncology, and so on) and provide understanding of relation between clinical oncology and basic research, which will promote future collaboration between students and clinical researchers.

803.802 종양출기세포 3-3-0

Cancer Stem Cells

종양출기세포는 새로운 개념의 종양 발생 및 성장에 대한 해석으로, 기존의 암에 대한 개념은 암조직을 이루고 있는 세포들이 몇몇 개의 transformed cancer cell 클론에서 유래한다는 것인데 비해, 종양출기세포는 암조직을 이루는 아주 일부의 세포만이 self renewal 및 long-term proliferation potential을 지니고 있으며, 암 조직의 대부분의 세포는 종양출기세포에서 유래한 다양한 성질을 지닌 세포로 구성되어 암조직은 종양출기세포로부터 일종의 hierarchy를 이루는 세포의 무라로 이루여지나는 개념임. 위가 종양출기세포로 정의가 규명하고 이에 대한 선택적 치료법을 확립하면 보다 손쉽게 종양의 치료법을 개발할 수 있는 아주 획기적인 방법을 얻을 수 있음을.

Cancer stem cells are the stem cells that constitute the self-renewal and proliferative core of the cancer tissue. In the conventional views, cancers are originated from transformed cells, either monoclonal or oligoclonal and thus be regarded as the mass of transformed cells. In the context of cancer stem cells, the only long-term proliferative and self-renewal potentials resides in cancer stem cell subpopulations and the remaining cancer cells are derived from the cancer stem cells. In this aspect, if we could characterize the biology and the weak point of cancer stem cells, irradiation of cancer would be more easier.

803.803 종양다배집체학 3-3-0

Cancer Proteomics

최근 종양 연구에서 사용되어지고 있는 단백질체학을 설명하고 각 방법의 기본 원리를 체계적으로 강의하고자 한다. 또한 이러한 기존 원리에 근거하여 실제 연구에 적용할 수 여러 가지 예를 알려주어 실제 연구에 응용할 수 있는 지식을 제공하고자 한다.

In this course, basic principles of proteomics in cancer research will be dissected. Based on these knowledges, several practical applications will be introduced to provide the clue for bridging basic knowledge to their researches.

803.808 유전성종양 3-3-0

Hereditary Tumor

유전성 종양의 분자 생물학적 기전에 대한 이해, 진단 및 치료 방법을 소개하며 유전성 종양 연구의 최신 자료와 유전성 종양 연구를 위한 방법론을 소개한다. 또한 최근에 논문에 발표된 유전성 종양 관련 연구결과를 발표 및 토의하여 유전성종양에 관한 복잡한 자료를 쉽게 이해할 수 있도록 한다.

Introduction of cellular and molecular principles for hereditary or familial cancer. Lectures and seminars for the basic and advanced comprehensions of hereditary cancer will be included in this course.

803.809 발암기전과 화학적 암예방 3-3-0

Molecular Mechanisms of Carcinogenesis and Cancer Chemoprevention

다단계발암과정과 관련된 세포 내 신호전달체계를 구성하는 생화학적, 분자생물학적 지표들을 소개하고 이들의 변화가 암화과정에 미치는 영향 및 그 기전을 집중적으로 강의한다. 또한 안전한 화학물질을 이용하여 발암과정의 주요단계를 억제, 지연, 역전 시키는 전략은, 이론화 학암예방(chemoprevention)에 대한 최신 연구지견을 강조한다.

Some fundamental biochemical and molecular biological markers that constitute intracellular signaling network related to multi-stage carcinogenesis will be introduced, and effects of their alterations on neoplastic transformation will be discussed in detail. Furthermore, perspectives on chemoprevention, defined as the use of nontoxic chemical regimens to inhibit, retard or reverse the multi-stage carcinogenesis, will be addressed in a series of lectures.

803.810 암예기체네티스 1 3-3-0

Cancer Epigenetics I

본 강좌는 종양 발생에 있어 중요한 유전자의 발현 조절에 관한 에피제네티스 메커니즘을 이해하는 데 기초가 있다. 특히 최근에 유전자 발현 조절의 기전이 되는 것으로 알려진 chromatin remodeling의 내용을 공부하고자 한다. 강좌의 주로 다루는 내용은 (1) 히스톤 단백질의 변형, acetylation, methylation, (2) 히스토단백질의 사례별 조절 기전, (3) microRNA의 발현 조절 및 양방향의 응용을 강의하고자 한다.

This lecture lies on the understanding the molecular mechanism of chromatin remodeling and epigenetics, which is recently highlighted in cancer biology. This lecture contains the specific themes as follows (1) histone modification such as acetylation, methylation, (2) histone chaperones regulating chromatin structure, (3) the transcriptional regulation of microRNA expression and its application to cancer biology.

803.811 종양생물학특론 3-3-0

Topics in Cancer Biology

본 종양생물학특론은 종양의 발생과 진단 및 치료, 종양발생에 대한 유전적 및 분자생물학적인 최신지견을 소개하여 종양을 복잡하게 이해함을 목표로 한다. 본 과목은 종양에 대한 강의와 더불어 최신논문에 대한 발표 참여 등을 통해 수업이 이루어진다.

Introduction of cellular and molecular principles for cancer biology. Lectures and seminars for the basic and advanced comprehensions of cancer biology will be included in this course.

803.812 종양생물학의 최신 동향 1 3-3-0

Current Topics in Cancer Biology I

본 과목은 여러 논문의 종양생물학 연구자 양성에 위하여 관련 분야의 최신 연구동향을 제공할 것을 목적으로 한다. 국내·외에서 종양생물학분야의 선두주자로 활동하고 있는 우수연구자를 매주 초청하여 최신 연구 동향과 연구결과들을 토론할 수 있도록 한다. 학생들은 심도 있는 관련분야 최신 지식을 습득한 기회를 제공받아 종양생물학 연구를 효과적으로 수행할 수 있는 능력을 배양하게 된다.

The course is aimed at introducing current trends in can-
cancer biology to graduate students for educating excellent scientists in the research field. Domestic and foreign leading scientists in the field of cancer biology will be invited and up-to-date knowledge and in-depth scientific approaches will be discussed. The students have an opportunity to acquire comprehensive and updated information on related topics so that they will develop the ability to plan and perform effectively cancer biology research.

803.813  종양생물학의 최신동향 II 3-3-0

Current Topics in Cancer Biology II

The course is aimed at introducing current trends in cancer biology to graduate students for educating excellent scientists in the research field. Domestic and foreign leading scientists in the field of cancer biology will be invited and up-to-date knowledge and in-depth scientific approaches will be discussed. The students have an opportunity to acquire comprehensive and updated information on related topics so that they will develop the ability to plan and perform effectively cancer biology research.

M1925.000100  종양생물학의 최신동향 III 3-3-0

Current Topics in Cancer Biology III

The course is aimed at introducing current trends in cancer biology to graduate students for educating excellent scientists in the research field. Domestic and foreign leading scientists in the field of cancer biology will be invited and up-to-date knowledge and in-depth scientific approaches will be discussed. The students have an opportunity to acquire comprehensive and updated information on related topics so that they will develop the ability to plan and perform effectively cancer biology research.

M1925.000200  종양생물학의 최신동향 IV 3-3-0

Current Topics in Cancer Biology IV

The course is aimed at introducing current trends in cancer biology to graduate students for educating excellent scientists in the research field. Domestic and foreign leading scientists in the field of cancer biology will be invited and up-to-date knowledge and in-depth scientific approaches will be discussed. The students have an opportunity to acquire comprehensive and updated information on related topics so that they will develop the ability to plan and perform effectively cancer biology research.

M1925.000300  종양생물학의 최신동향 V 3-3-0

The course is aimed at introducing current trends in cancer biology to graduate students for educating excellent scientists in the research field. Domestic and foreign leading scientists in the field of cancer biology will be invited and up-to-date knowledge and in-depth scientific approaches will be discussed. The students have an opportunity to acquire comprehensive and updated information on related topics so that they will develop the ability to plan and perform effectively cancer biology research.

M1925.000400  종양생물학의 최신동향 VI 3-3-0

The course is aimed at introducing current trends in cancer biology to graduate students for educating excellent scientists in the research field. Domestic and foreign leading scientists in the field of cancer biology will be invited and up-to-date knowledge and in-depth scientific approaches will be discussed. The students have an opportunity to acquire comprehensive and updated information on related topics so that they will develop the ability to plan and perform effectively cancer biology research.

Advanced Topics in Cancer Research I

M1925.000500  종양생물학의 최신동향 VII 3-3-0

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Advanced Topics in Cancer Research II

The course is aimed at introducing current trends in cancer biology to graduate students for educating excellent scientists in the research field. Domestic and foreign leading scientists in the field of cancer biology will be invited and up-to-date knowledge and in-depth scientific approaches will be discussed. The students have an opportunity to acquire comprehensive and updated information on related topics so that they will develop the ability to plan and perform effectively cancer biology research.

Advanced Topics in Cancer Research III

The Principles of Pathophysiology of Hepatocellular Carcinoma

The course is aimed at introducing current trends in cancer biology to graduate students for educating excellent scientists in the research field. Domestic and foreign leading scientists in the field of cancer biology will be invited and up-to-date knowledge and in-depth scientific approaches will be discussed. The students have an opportunity to acquire comprehensive and updated information on related topics so that they will develop the ability to plan and perform effectively cancer biology research.
Clinical Pharmacogenetics

This course teaches students how pharmacaceutics and medicine are integrated in drug development and how the two fields can be applied to clinical pharmacology. The following topics will be discussed: integrated approach from preclinical to clinical trial; drug delivery system; and research methodology for PK/PD/safety/efficacy evaluation.

Molecular Pharmacogenetics

Molecular Pharmacogenetics applies pharmacogenetic knowledge to clinical situations including therapeutic drug monitoring. Phenotype, genotype, polymorphic drug metabolizing enzymes, and variability in drug receptors are studied to be applied in a clinical context.

804.501 Seminar in Clinical Trials 1

Seminar in Clinical Trials 1

This course is a 101 introductory course in drug development and clinical trial. The topics covered include the following: GCP trial ethics; overview of phase 1, 2, and 3 clinical trials; postmarketing surveillance; trial design; sample size calculation; concepts of control group; adverse drug reaction evaluation and reporting; and statistical analysis.

804.502 Pharmaceutical Medicine

Pharmaceutical Medicine

This course provides an overview of hepatocellular carcinoma (HCC) including the function and physiology of liver. Each Lecture covers different topics that related to HCC. Also, it introduces cancer biology majors to general liver diseases that potentially cause HCC and diversity of liver tumors. Therefore, The goal of this course is to encourage cancer biology majors to be able to apply general knowledge of HCC to their research.

804.503 Regulatory Affairs in Drug Registration

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M1925.000600 Research Techniques of Cancer Immunotherapy

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This lecture focuses on understanding of fundamental knowledge about immunology and getting a grasp of recent research trends in cancer immunotherapies mainly by studying immunotherapy methodologies including antibody therapeutics for cancer therapy applied to clinical cases.

M1925.000700 Studies in Endocrine Neoplasms

Studies in Endocrine Neoplasms

This course covers the molecular biological aspects of endocrine neoplasms included lecture and review of landmark publications on the key concepts of endocrine neoplasms. Main issues of the lecture are hereditary endocrine neoplasm, neuro-endocrine neoplasm, thyroid, parathyroid, adrenal glands, endocrine pancreas, carcinoids, and breast cancer. Next-generation sequencing for endocrine neoplasm research will be covered. This lecture also included the pathologic and radiologic findings of endocrine neoplasms.

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Program in Cancer Biology

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pharmacogenetics. The principles and applications of molecular biological methodologies such as PCR, RFLP, SSCE, TDGS, and DGGE are studied.

804.506 Adverse Drug Reactions and Hypersensitivity

Adverse Drug Reactions and Hypersensitivity

This course focuses on the evaluation of PD and PK based drug interactions. This course will help students to predict and assess the clinical significance of drug interactions. This course will deal with major drug developments and clinical trial-related issues from a practical perspective. Topics will cover clinical trial design, randomization, monitoring, CFG and data management, trial reporting, filing, and global trends.

804.507 Pharmacometabolomics

Pharmacometabolomics

This advanced course will deal with major drug developments and clinical trial-related issues from a practical perspective. Topics will cover clinical trial design, randomization, monitoring, CFG and data management, trial reporting, filing, and global trends.

804.509 Clinical Pharmacodynamics and Evaluation Methods

Clinical Pharmacodynamics and Evaluation Methods

This course will cover the application of simulation techniques to the optimal design of trials, mechanistic/empirical PK & PD models, non-parametric PK/PD, PK-PD target models, PK-PD modeling, PK/PD, and physiologically based PK.

804.510 Optimum Therapy in Special Patients

Optimum Therapy in Special Patients

This course will cover dose-response analysis methods to be applied to optimal drug therapy, clinical trials, and PK/PD modeling. Modeling methods such as indirect responses, tolerance, effect-link model, irreversible effects, oscillating response, etc. will be covered as well.
This lecture focuses on the issue of medical decision sciences with an emphasis on methods of medical knowledge representation and probabilistic and symbolic inference for better understanding and generation of medical information.

807.503 의학용어표현이론 3-3-0

Representation of Medical Concept

This lecture introduces basic knowledge and techniques for system analysis and design. Most important issues in the development of medical system are understanding user’s requirement correctly and transforming the requirement into appropriate technical expressions. Through the lecture students will learn analytical methods, basic knowledge of database, methods for the system development and interface standards. Through a term project, student will have the opportunity to design information system by themselves.

807.504 의료정보시스템분석 및 설계 3-3-0

Medical Information System Analysis and Design

This lecture introduces basic principles and applications for medical research and practice, including the use of controlled vocabularies, standardization of documents, principles of medical decision making, computer-aided education, medical literature search and medical information security and privacy. It also covers the real-world examples of hospital information system and system evaluation for better use of information systems in medical practice.

807.502 의료정보연구방법론 3-3-0

Research Methods in Medical Informatics

This lecture provides basic knowledge and techniques for system analysis and design. Most important issues in the development of medical system are understanding user’s requirement correctly and transforming the requirement into appropriate technical expressions. Through the lecture students will learn analytical methods, basic knowledge of database, methods for the system development and interface standards. Through a term project, student will have the opportunity to design information system by themselves.

807.505 임상의표준정보학 3-3-0

Clinical Informatics

Clinical medicine is fundamentally an information-intensive discipline. This lecture defines characteristics of each clinical practice step in terms of information process of communication and control. Clinical information system and clinical decision science are ones of the topics. Algorithms for clinical practice and artificial intelligence in medicine will be introduced.
807.506 

의학통계론 3-3-0

Statistical Inference in Medicine

의생명분야의 임상적 의사결정을 지원할 수 있도록 정량적 분석을 통한 연구 평가 방법에 대해서 배운다. 주된 학습 내용은 다음과 같다. 통계적 통계학을 바탕으로 분산 집중을 위한 모식적 방법, 변수간의 상관관계, 확률, 베이지안 방법을 이용한 통계적 추론 방법에 대하여 탐구한다.

Statistical inference is important in medical decision making. This lecture tries to help students to analyze and develop clinical decision support programs with statistical inference and quantitative analysis. Major subject includes descriptive statistics, difference of sample means, correlation and regression methods, and Bayesinan inference techniques.

807.507

의생명온톨로지개론 3-3-0

Introduction of Biomedical Ontology

온톨로지 공학의 기본 이론을 배우며, 의생명 과학 분야의 온톨로지 모델링과 활용계에 대한 학습한다. 온톨로지 표현 언어 및 모델링 도구의 사용법에 대해 배우고 프로젝트를 통해 온톨로지 모델링을 실습하게 된다. 또한 의생명 과학 분야의 복잡한 개념 및 관계성 표현을 위한 중요 생각과 온톨로지 방법 및 통합에 관한 이론들을 탐구한다.

From this course students will learn basic theories on ontological engineering, ontology modeling technique, and use cases of medical ontologies. Students will also learn about ontology representational languages and how to use ontology modeling tools through projects. This course explores the important issues regarding representation of complex concepts and ontology integration.

807.509

의약처방자연어처리 및 검색 3-3-0

Natural Language Processing and Information Retrieval of Medical Data

임상서식 및 의학 문헌에서의 정보추출을 위한 다양한 알고리즘과 이론에 대해 학습한다. 특히 자연어처리 분야의 기존 연구들 중 기반으로 의학 분야에서 사용된 이론 기술이 적용될 수 있는 사례들도 개방하고, 실제 프로젝트를 통해 새로운 적용 분야들에 대한 연구를 한다.

This lecture provides basic understanding of natural language processing technologies. Various kinds of algorithms of NLP used for information extraction will be introduced and exercised through the lecture. Usage of Korean NLP tools will be demonstrated and learned through a term project.

807.510

전자건강기록시스템 3-3-0

Electronic Health Record System

최근 의료정보화의 중심에 있는 EHR 시스템의 구성과 기능들에 대해 전반적으로 이해하는 것을 목적으로 한다. EHR의 개념에서 임상데이터 및 용어의 표준화와 데이터포맷과 관련된 상호운용의 주제에 대해서 연구한다. 또한 EHR 관련된 정책, 시스템도입 및 관리, 교육 등과 같은 다양한 주제에 대해서 학습한다.

This lecture provides basic understanding of Electronic Health Record (EHR). As EHR is getting more significant in health informatics arena, core functionalities of EHR, terminologies, and messaging standard will be discussed in the class. In addition governmental issues in healthcare policy, cost-benefit aspect of EHR implementation, maintenance of system, and educational issues will be discussed.

807.520

유벌스케어론강 3-3-0

Topics in Ubiquitous Healthcare

한국의 지식경제화 사회에서는 의료서비스를 제공하는 방식으로 IT를 활용하는 u-Healthcare의 개념이 보편화되었다. 본 과목에서는 HT(Healthcare Technology)와 IT(Information Technology)의 임접한 HIT를 활용한 의료서비스 전달방법과 관련된 기술들을 병합하여 학습한다. 또한 유벌스케이아 임상방식 중의 하나인 원격의료(Telemedicine, Telecare, Telemonitoring)와 유벌스케이아 서비스 시장 및 가치체계 분석, 의료의 선구자와 현재 시범사업을 결합된 국내외 유벌스케이아 모델을 고찰한다. 유벌스케이아의 국내 정책과 향후 발전을 위한 범제도적 방안 등도 심층적으로 고찰하여 정책을 탐구한다.

Current information age has made the provision of healthcare service utilizing the IT named ubiquitous-Healthcare common modality. This lecture introduces the brand-new healthcare delivery system using HIT which is the integration of the HT (Healthcare Technology) & IT (Information Technology) and related state-of-the-art technologies. It will also give some introduction to the Telemedicine, Telecare, and Telemursing. Analysis on the u-Healthcare service market and the value chains, the exemplary use cases for the u-Healthcare abroad, and the national demonstration projects of the u-Healthcare will be reviewed. In-depth review and analysis on the ethical and legal issues for the adoption and expansion of u-Healthcare will be provided as well.

807.521

소비자건강정보학세미나 3-3-0

Seminar in Consumer Health Informatics

인터넷에 대변되는 정보의 시대로 진문가 아닌 일반인들도 간갑 및 의료정보에 무제한적으로 접근할 수 있게 되었다. 또한 소비자주체(consumerism)의 대두로 인하여 환자를 더 이상 의료소비자 대상으로서의 위치에서 간강 관련 서비스를 활용하는 주체로서 인식하고 관계를 맺어야 할 시대가 되었다. 본 과목은 간강 및 의료정보의 수혜자이면서 적극적인 사용자인 일반인과 환자에게 직접적으로 수수진 정보를 제공하고, 그들로 하여금 스스로를 몰입할 수 있는 능력을 키울 수 있도록 하는 관계에서 접근하는 새로운 방식과 개념의 "소비자 건강정보학"을 학습하는 과정이다. 또한 의료소비자를 보호하기 위하여 의료서비스 전달계에서의 "환자안전" 향상을 위한 이슈 및 해결책에 대하여 학습한다.

General public as well as the professionals have unlimited access to the health and medical information in the information age represented as the Internet. As the consumerism became very popular, the patients should be considered as the partner of the healthcare delivery system, and not as the simple receiver of the healthcare. This lecture focuses on the Consumer Health Informatics which deals with the provision of quality health information, and empowering the healthcare consumers to take care of themselves as the consumers became the active users of health information. The improvement of patient safety problems, issues and resolutions will be covered as well.
본 과정은 일반적으로 의학에서도 다루는 건강관리의 개념을 넘어 사회학, 심리학적 접근으로 건강경영의 개념과 필요성을 이해하고, 건강경영 전략을 반영한 프로그램 설계를 교육과정학과 함께 접목시킬 수 있기 때문에 매우 적합한 과목이다. 또한 ICT 기술을 이용해 건강경영 전략을 개발하고 이를 실제로 적용하여 건강관리를 할 수 있도록 하는 사례를 소개하고, 개인의 라이프스타일을 고려한 건강 관리 관련 API를 활용하여 ICT 기반의 전문직, 맞춤 형 건강경영 프로젝트를 설계해볼 수 있도록 한다.

Beyond the general medical concept of ‘health management’, this course aims to provide the insight for the health management in sociological and psychological manners. Also, this course will give understandings of how to design health management program based on health management strategies with approaches of educational technology. Also, along with the fast developing Healthcare Environment, this course will introduce the practical applications of ICT-based personalized health management program, using corporation of public big data, personal life log data, and personal health record (PHR).

The purpose of this lecture is to enable biomedical researchers to be familiar with some advanced statistical methods that are useful in medical research. This lecture will allow the development of statistical approach that can effectively model complex biomedical data sets by exploring the data sets to discover how variables are interrelated and comparatively model complex biomedical data sets by exploring how variables are interrelated and comparatively model complex biomedical data sets by exploring how variables are interrelated and comparatively model complex biomedical data sets by exploring how variables are interrelated and comparatively model complex biomedical data sets by exploring how variables are interrelated and comparatively model complex biomedical data sets by exploring how variables are interrelated and comparatively model complex biomedical data sets by exploring how variables are interrelated and comparatively model complex biomedical data sets by exploring how variables are interrelated and comparatively model complex biomedical data sets by exploring how variables are interrelated and comparatively model complex biomedical data sets by exploring how variables are interrelated and comparatively model complex biomedical data sets by exploring how variables are interrelated and comparatively model complex biomedical data sets by exploring how variables are interrelated and comparatively model complex biomedical data sets by exploring how variables are interrelated.

The aim of this class is to introduce the concept and methods of molecular and cellular biology of stem cells. Also, the maintenance of stemness and the differentiation methods of molecular and cellular biology of stem cells.

The purpose of this course is to explore the theories and fields of various topics that have been actively researched recently in the rapidly changing field of medical informatics. Students will be able to identify the computer and advanced technology applied in the present life science field, and have the ability to carry out related research with proper awareness of this field.

The 4th Industrial Revolution, ICT technology development, has allowed the use of medical information to be increased and various medical services to be provided. In addition to medical technology, medical management and marketing capabilities are critical factors for the delivery of differentiated, consumer-centric healthcare. This subject learns about changes and trends in the medical market, operational knowledge, theories of medical consumption behavior, and how to analyze and use consumer information. Improve over all medical management through theoretical considerations, case studies and discussions.
체 세미 원균기술 개발을 통한 환자 맞춤형 세포치료법 연구에도 초석이 될 수 있을 것이다.

The aim of this class is to introduce the concept and methods of genetics and epigenetics of stem cells. Also, the reprogramming and differentiation process of stem cell will be discussed.

M2860.000300 배아줄기세포 및 성장기줄기세포생물학 3-3-0

Embryonic Stem Cell & Adult Stem Cell Biology

배아줄기세포와 성장기줄기세포의 정의 및 생물학적 차이점, 수립 과정 및 특성을 전반적으로 학습하고 줄기세포를 이용한 특성세포 및 조직의 분화량 기전 및 방법을 공부한다. 토론식 강의를 통해 배아줄기세포 및 성장기줄기세포의 최신연구동향 및 관련연구 방법과 해석을 통해 창의적 연구방법을 고안할 수 있도록 한다.

The aim of this class is to introduce the concept of embryonic stem cell and adult stem cell biology. In this class, the difference between embryonic stem cell and adult stem cell will be discussed. Also, the differentiation of stem cell will be discussed to help the design of actual experiments for students.

M2860.000400 유도만능줄기세포생물학 3-3-0

Induced Pluripotent Stem Cell Biology

유도만능줄기세포의 정의, 수립과정 및 특성을 전반적으로 학습하고 줄기세포를 이용한 특정세포 및 조직으로의 분화관련 기전 및 방법을 공부한다. 토론식 강의를 통해 유도만능줄기세포의 최신연구동향 및 관련연구방법과 해석을 통해 창의적 연구방법을 고안할 수 있도록 한다.

The aim of this class is to introduce the concept of induced pluripotent stem cells and their derivation process. Also, recent advance of reprogramming and substantial experimental methods will be discussed.

M2860.000500 조직공학 및 나노의학 3-3-0

Tissue Engineering & Nanomedicine

줄기세포는 인체의 여러 가지 특정 세포로 분화할 수 있는 능력을 가졌으며, 현재 심장, 신경, 연골, 근육, 간, 폐 등의 세포로 분화될 수 있다는 사실이 밝혀졌다. 이러한 연구결과는 세포치료라는 새로운 패러다임의 의료기술을 발전시키고 있으며, 줄기세포와 조직공학을 응용한 인공장기 및 생체조직의 개발은 재생의학의 핵심기술로 발전되고 있다. 이에 손상되거나 기능을 상실한 인체조직 및 장기를 대체하거나 복원하는 것에 초점을 맞춘 조직공학은 크게 세 가지 영역으로 구분된다: 세포, 지지체(scaffold) 그리고 성장인자(growth factor)이다. 수립을 통해 조직공학의 세부 영역의 개념 정립과 새로운 연구 방향을 탐색하고 적용 및 응용 가능성을 확대한다. 또한, 최근 세포적 주요 원인으로 나타난 나아지세포를 이용한 나아-줄기세포의 응용에 대해 탐색하고, 질병의 진단 또는 치료에 적용하는 방법에 대해 고찰하며, 이를 통해 다학제간 연구의 필요성 및 전략적 접근법의 도출 능력을 함양한다.

The aim of this class is to introduce the concept of tissue engineering and nanomedicine in terms of cell therapy. The experimental methods of tissue engineering will be discussed.
대학원(Graduate School) ∴ 협동과정 종양생물학전공(Program in Cancer Biology)

국내외 분야에서의 120 시간 이상의 실무 경험과 심층 지식 축적 한다.
The aim of this class is to study experimental design and improve technical skills for PhD degree candidates through the internship in individual lab.

M2860.001100 실험설계와 과학논문작성 2-2-0
Experimental Design and Scientific Writing
과학적 논문작성에 필수인 논리적인 실험설계, 연구방법, 자료 정리 및 논문 기술방법에 필수적으로 요구되는 식견을 교육하며, 과학윤리에 대하여 학습함으로써 연구윤리 및 학문수준의 향상을 도모한다.

M2860.001200 줄기세포생물학세미나 1-0-2
Seminar in Stem Cell Biology
줄기세포생물학과 관련된 연구과제에 대한 발표와 토론을 통해 이론과 실제를 탐구하고 보고서를 작성, 결과를 발표하여 토론을 진행하게 함으로써 실질적인 연구의 문제제시, 가설정립, 실험설계, 구체적 방법론 확립, 합리적인 결과 해석, 결론 도출과 발표 및 소통능력을 함양한다.

M2860.001300 학위논문세미나 1-0-2
Thesis Seminar
줄기세포생물학 전공 대학원생이 현재 수행하고 있는 연구 및 이를 기초로 한 학위 논문 설계 및 내용에 대하여 세미나를 진행 한다. 학위논문 내용에 대한 토론을 통하여 논문의 질 향상과 융복합 학문의 구성원으로서의 상호간 이해를 증진한다.
치 과 대 학
College of Dentistry
치의과학과(Department of Dental Science)

공통과목(Core Courses)

851.543 치의학특강 3-3-0

Introduction to Dentistry

이 과목의 목적인 대학원생들에게 본 학과의 핵심 과목들을 개략적으로 이해하게 함으로써 대학원과정 동안의 교육의 방향을 제시하고, 학생들이 스스로 연구의 방향을 설정할 수 있는 기초를 마련해 주는 데 있다. 강의를 통해 치과 전반에 있어 이론적, 실무적, 치아결합, 결합계의 기초적인 자세를 그립한 약 3-4주의 시간 내에 알게 한다.

For the non-dental graduate students, the course will introduce basic knowledge and scopes in Dentistry, so that they can understand the state of the art in Dentistry and prospect the future demand in dental research. The topics will include the fundamental knowledge in the anatomy, histology, physiology, and tooth morphology, etc. The scopes of the clinical dentistry will be also introduced.

851.544 분자세포생물학 1 3-3-0

Molecular Cell Biology 1

이 과목의 목적인 대학원생들에게 분자세포생물학의 기본 개념을 강화하는 데 있다. 강의 내용은 핵산의 화학적 특성, DNA의 구조, 복제, 복합체, DNA의 변조, 탄백질 결합물의 기전 및 활성 조절, 단백질 구조 및 기능, 단백질 통합, 한국 내 분자생물학, 세포주기 및 세포분열, 신호전달, 세포망 등에 대한 최신 개념을 포함한다.

The goal of the course is for graduate students to learn about basic concepts in molecular cell biology. Topics include chemistry of nucleic acids, DNA topology, DNA replication, repair and recombination, recombinant DNA technology, transcription, RNA processing and post-transcriptional control, translation and post-translational modification, protein structure and function, techniques for protein purification, tools for protein analysis, membrane biology, intracellular trafficking, cytoskeleton, cell cycle and division, cell signaling, and programmed cell death.

851.545 분자세포생물학 2 3-3-0

Molecular Cell Biology 2

이 과목의 목적인 분자세포생물학 1과 연계하여 핵산생물학의 기본 개념을 강화하는 데 있다. 강의 내용은 핵산의 화학적 특성, DNA의 구조, 복제, 복합체, DNA의 변조, 탄백질 결합물의 기전 및 활성 조절, 단백질 구조 및 기능, 단백질 통합, 한국 내 분자생물학, 세포주기 및 세포분열, 신호전달, 세포망 등에 대한 최신 개념을 포함한다.

The aim of this course is to provide graduate students to learn about basic concepts in molecular cell biology. Topics include chemistry of nucleic acids, DNA topology, DNA replication, repair and recombination, recombinant DNA technology, transcription, RNA processing and post-transcriptional control, translation and post-translational modification, protein structure and function, techniques for protein purification, tools for protein analysis, membrane biology, intracellular trafficking, cytoskeleton, cell cycle and division, cell signaling, and programmed cell death.

851.602 치과연구방법론 3-3-0

Methodology of Dental Research

치과의 임상과 기초분야 연구에 필요한 여러 실험방법에 대해 각 분야별로 검토한다. 실험연구에 필요한 기초지식의 습득과 아울러 진행과정을 이해하고, 실험, 실험수치 및 기초학적 연구 방법에 대해 강의와 토론을 한다. 또한 국 조사의 기능 조사에 관한이라는 실험분석의 분석, 통계실습 및 인체실험 방법이 비교 그리고 각각 치과계획의 물리화학적 특성과 생물학적 특성의 평가방법 등에 대하여 학습하게 한다. 치료 및 진단의 평가 방법과 다르게, 여기서는 치의학 연구방법론 연구논문의 작성방법에 대해서도 연구, 토론한다.

This course will aim at an understanding of the changes of research methodology. This lecture will help graduate students to absorb the field of their research information by recent periodicals and information network. In addition to this, by discussion with their instructors about the research methodology, improve the methodology of their research information. This course will aim at an understanding of the changes of research methodology. This lecture will help graduate students to absorb the field of their research information by recent periodicals and information network. In addition to this, by discussion with their instructors about the research methodology, improve the methodology of their research information. This course will aim at an understanding of the changes of research methodology. This lecture will help graduate students to absorb the field of their research information by recent periodicals and information network. In addition to this, by discussion with their instructors about the research methodology, improve the methodology of their research information.
Dental industry has the capacity to grow in close collaboration with other BT and IT industry. Especially, as the government support to new growth-driving force industry and venture company for this area. The course will cover the understanding the era of new growth-driving force industry and venture company for this area. The course will be provided by team-teaching with the corresponding professors. This course intends to give an overview of the various aspects of dental Industry in collaboration with BT and IT industry.

M2035.000400 보건의료 교육학 개론 3-3-0
Introduction to the Education of Health Sciences Professions

This course introduces the theoretical foundations of the education of health sciences professions. The sub-disciplines of education such as curriculum, assessment/evaluation, educational psychology, educational technology, educational administration, life-long learning, counseling, and human resource development are discussed in the context of colleges of health sciences. Methods and issues for applying educational theories to the health science fields are covered, as well as the roles of education professionals in the field of health sciences.

M2035.000300 가상현실 및 시뮬레이션 교육 3-3-0
Virtual Reality and Simulation-based Training

The goal of this course is to review the present status of research on the underlying mechanisms of signal transduction involved in the neuronal survival and differentiation. We will also review recent advances in research technology. There will be several paper presentation & discussion sessions to consider recently published research papers. Students will be expected to have a chance to think about how to apply recent cellular and molecular neurobiology to dental science.

851,546A 신경계신호전달 3-3-0
Signal Transduction in the Nervous System

851,511 두경부응용해부학 3-3-0
Applied Anatomy of the Head and Neck

851,710A 치과영상영상중심경화 3-3-0
Central Nervous System in Dental Fields

851,900 가상치아삼차원재형성 3-3-0
Virtual Tooth

This course studies a brain’s sensory and motor nucleus that are related to the head and the neck. Specific topics will include the function, the structure, and the aging of the brain stem, sensory and motor nucleus of the trigeminal nucleus, and orofacial sensory pathway. The course also covers degeneration and regeneration of the nervous tissues.
The goal of this course is to provide students basic knowledge of the anatomical organization of the central nervous system and understanding of the relationship between anatomical structure and function. Students will be expected to apply the knowledge obtained from this course to provide patients better diagnosis and treatment of various diseases.

For example, we will examine the anatomical structures and underlying mechanisms involved in the perception of pain and stress.
Anatomy for Implant Dentistry

This course discusses the morphological and anatomical characteristics of craniofacial structures related to osseointegrated dental implant treatment and offers the contemporary knowledge on the response of bone and soft tissue according to the various design and materials.

Dental anthropology

The biometrics and morphology on teeth and maxillofacial structures have provided essential data to clinical dentistry such as orthodontics in order to aid the diagnosis and treatment planning. In addition, the data have been used as clues of human evolution and ethnic differences in the field of physical anthropology. Up to now, various kinds of methodology and analyses were derived from dentistry and anthropology respectively, but at the same time, they are commonly used interchangeably. In the future, the cooperative and convergent use and development of this technique will be emphasized. In this lecture, the history and methodology of biometrics and morphology will be studied from the both perspective.

Development of Permanenent dentition

The topic of this course is to review the formation and development of permanent dentition. During the eruption and subsequent positioning of permanent teeth, the observation of tooth movement into complete occlusion is performed through the 3 dimensional measurements of virtual dental model and biometric analysis.

Tooth Occlusal Morphological Patterns

This course discusses the morphological description of tooth form based on the physical anthropology. With regard to the occlusal characteristics of molar teeth, characteristic features is extracted, and the method to predict the virtual occlusal surface for restoration is studied with the aid of statistical analysis, such as principal component analysis.

Analysis of facial beauty

The facial esthetics is the most important part when we define the beauty of human being. The beauty can be described differently according to era, culture, environment and ethnicity. However, the common factors could be found which comprise the beauty, such as symmetry and youthfulness. This course deals with the digitization of the factors using biometrics of craniofacial structures and the study on the current research trends.

Craniofacial growth prediction

The growth of whole body and craniofacial structures have been interesting topics in dentistry. Not only the simple description of growth but also analysis of the pattern and the prediction of the future growth have been thoroughly studied. This course deals with what was known in the pattern of somatic and craniofacial growth and related researches on the growth prediction algorithm.

Virtual human anatomy library

This course discuss the contemporary trends and technical issues about the construction of the virtual anatomic library.
The library is focused on realization of the Korean population characteristics and compares the state of the art 3D technology worldwide.

**Illustration anatomy**

본 장은 해부학 교과서 및 도해집 등의 삽화에 사용되는 해부학적 구조의 표현 양식에 대해 논의하고, 회화, 조소 등 다양한 반복 전반에 걸친 인체의 표현과의 차이점, 최신 경향 등을 고찰한다.

This course discusses with expression style, technique and its educational efficacy of illustration from anatomy text books and atlases. The unique feature of anatomic illustration different from the general art, such as painting and sculpture, and the contemporary trends will be dealt with in detail.

**Preventive & Social Dentistry Major**

**Basic Oral Health Statistics**

치학연구에 필요한 통계방법을 익히며 과학적 사고방식을 습득함으로써 관련 분야에서 사용하는 통계방법과 통계처리결과의 해독능력을 배양한다.

This course adopts statistic methods of dental research and the scientific way of thinking.

**Advanced Oral Health Statistics**

기초구강보건통계학을 활용하여 자료의 심층적 통계분석방법을 통해 실제 적용해본다.

This course adopts advanced statistic methods and discusses statistic methods in depth.

**Basic Oral Health Epidemiology**

구강역학의 개념과 기능을 이해하고, 구강역학 방법론을 익히며, 구강상병의 발병원인 및 발병기전을 파악하고 그 예방법과 치료법을 개발 활용할 수 있도록 한다.

Oral epidemiology can be defined as the study of distribution and determinants of oral health-related states or events in specified populations, and the application of this study to control of oral health problems.

**Advanced Oral Health Epidemiology**

기초구강보건역학을 활용하여 역학조사를 통해 얻은 자료를 통해 실제 적용해본다.

This course adopts advanced oral health epidemiology and discusses actual data in depth.

**Oral Epidemiology of Molecular·Genetic**

분자·유전역학을 익히며, 분자생물학적 접근의 관점과 도구를 익히는 과정을 포함한다.

Molecular·genetic epidemiology includes the application of molecular biological approaches to epidemiological problems, and the use of tools and perspective of epidemiological approaches to comprehend observations from molecular biology.

**Indoor Oral Health Promotion**

사업장근로자의 구강건강수준과 관리, 구강건강교육 및 상담, 직업성 구강병 예방을 위한 작업환경개선, 산업구강보건관련제도, 산업구강보건관리 및 정책 등 사업장 근로자의 구강건강증진에 대해 학습한다.

The goal of this course is to develop an oral health promotion program for preventing and managing oral diseases of workers in industry.

**Oral Health Education Methodology**

인터넷 홈페이지와 전자메일 등의 활용을 통해, 지역사회 구성원의 구강건강수준을 유지·증진시키기 위해 구강건강에 관여하는 지식과도 및 행위를 합리적으로 변화시키기 위한 원리를 교수하고, 개인과 집단을 대상으로 한 각각의 구강보건교육법과 내용을 학습한다.

This course discusses how to improve community awareness regarding dental health, through the use of internet. It also deals with individual and group approaches to dental health education.

**School-Based Oral Health Promotion**

학교에서 학생의 구강건강을 증진시키고 학생의 구강보건지식과 태도 및 행동을 변화시키기 위한 학교구강보건관련제도 및 정책과 구강보건관리 및 정책 등, 학교에서 구강보건을 관리하는 원리와 방법을 학습한다.

The goal of this course is to develop an oral health promotion program for preventing and managing oral diseases of school age children.

**Prevention and Management of Periodontal Disease**

처치결과를 예방할 수 있는 방법과 치유결과가 이환되기 전, 예방할 수 있는 방법을 알아본다.

In this course, students will learn how to prevent periodontal disease before severe periodontal destruction. Students will be able to educate patients more effectively after learning about periodontitis and its sequela.

**Prevention and Management of Oral Cancer**

구강암 발생예방에 대한 노력을 아우르는 방법과 치유결과가 이환되기 전, 예방할 수 있는 방법을 알아본다.

In this course, students will learn how to prevent oral cancer before severe periodontal destruction. Students will be able to educate patients more effectively after learning about periodontitis and its sequela.
### 지역사회구강보건사업개발론 3-3-0

**Development of Community-Based Oral Health Program**

지역사회구강보건, 공중구강보건교육의 개념 및 개발, 보건사업 등에 대해 알아보고, 영유아 및 성인이 노인, 장애인 학교 및 산업 구강보건 등에 관한 학습한다. 또한 지역사회구강보건인력과 지역사회구강보건 인력양성을 위해 전산화된 데이터에서 입과 후 지역사회 구강보건을 전반적으로 이해한다. 또한 구강건강증진프로그램의 개념과 중요요소를 이해하고, 개별 환자나 집단을 대상으로 한 구강건강증진 프로그램을 개발할 수 있도록 한다.

This course provides students with comprehensive knowledge of the role of dental profession in the society. Student learn a variety of social programs for public health care education, oral health care for children, adult, aged and disabled, and school and industrial oral health. Students will be expected to understand the concept and important factors of oral health promotion program and to be able to develop oral health promotion program for group.

### 치과건강보험제도론 3-3-0

**Oral Health Care Insurance**

치의사로서 반드시 알고 준수하여야 할 구강보건진료제도를 의료관계법규와 연관시켜 학습하고, 사회보장제도와 국민건강보험제도의 개념 역사 현황 및 문제점 등을 고찰하고 발전방향을 모색한다.

Basic concepts of community dental health, dental health care systems, and legal considerations are included. Also, students review concept, historical background, present status and problems of national health insurance and advancement of national health insurance.

### 근거중심구강보건정책론 3-3-0

**Evidence-Based Oral Health Policy**

근거중심구강보건정책은 공급자들과 소비자들을 위한 구강보건진료제도를 의료관계법규와 연관시켜 학습하고, 사회보장제도 및 국민건강보험제도의 개념 역사 현황 및 문제점 등을 고찰하고 발전방향을 모색한다.

Evidence-based oral health policy involves the systematic collection and incorporation of research evidence into clinical practice, to improve the quality and effectiveness of oral health policy for consumers and providers. It has implications for the delivery of oral health policy at both the individual and community level. This course reviews how evidence-based oral health policy is done and describes the sources of evidence and hierarchy of evidence available.

### 구강보건의료명령론 3-3-0

**Equity in Oral Health Care**

구강보건의료서비스에 대한 접근성과 의료이용, 의료비 지출과 의료자원 배분에서의 평형성을 이해한다.

This course includes discussion of healthcare policy implementation and equity in oral health care.

### 장애인구강보건증진론 3-3-0

**Oral Health Promotion for the Disabilities**

정상인에 비하여 장애인 즉 정신적, 신체적 비저상인에게 있어서의 질병, 장애, 구강위생 여부는 특히 심한 어려움이 따른다. 이에 대한 치료, 관리 문제를 연구함으로써 장애인의 구강보건을 효과적으로 유지시키는 데 있다.

The diagnosis, treatment and oral hygiene maintenance in children with mental and physical disabilities are inherently difficult. The management and maintenance therefore are discussed to promote oral health in disabled with special needs.

### 노인구강보건란 3-3-0

**Geriatric Oral Health**

평균수명 연장에 따라 급격히 증가하는 노인환자에 대해 구강보건문제들은 구강건강 뿐만 아니라 신체건강과 관련하여 노인의 삶의 질을 향상시키기 위해 서비스 접근성, 이용 가능한 자원, 공중보건정책 등의 변화를 이해하고 실천해야한다.

To care for aging population, health care professionals, especially dentists, must initiate changes in public policies, available resources and access to services. The dental profession especially must improve awareness among the general public and health care professionals of the link between oral health and general health.

### 구강보건의료명령론 3-3-0

**Advanced Preventive Dentistry**

구강병 예방의 원리와 방법을 교수하고, 최근 예방치과 연구분야의 동향을 살펴본다.

This course deals with the causes of dental diseases, as well as the principles and the methods of their prevention. In this course, students will review recent studies of preventive dentistry.

### 임상 구강상병 예방술 개발 및 평가 3-3-0

**Development & Evaluation of Clinical Dental Health Prevention**

임상구강상병 예방술의 적용과 평가를 중점을 두고, 최근 연구결과와 평가과정을 비평적으로 분석하도록 한다.

This course concentrates on the application & evaluation of the clinical preventive methods. The students will critical reviews recent studies of preventive concepts and evaluation process.

### 생애주기별 구강보건관리 3-3-0

**Oral Health Care throughout Lifecycle**

유아, 학생, 청년, 노년층의 구강보건관리의 특성을 검토하고, 적절한 구강보건관리 방안을 도출한다.

In This Course, students will discuss the characteristics of oral health care procedures and proper dental care methods through life-courses from infant to elderly.
치과생체재료과학전공(Dental Biomaterials Science Major)

850,801

Esthetic Restorative Biomaterials

심미수복을 위한 생체재료는 고분자화학 및 공학의 발전에 그 근간을 두고 있는 바, 현재 사용되고 있는 여러 고분자 물질을 고찰하고 이를 바탕으로 하여 구강 내 임상환경에 적합한 물리적 동력학적 특성을 가지는 치과 생체재료의 고안, 제작, 성능검토 등을 고찰하며 심미성과 연관된 주제를 고찰한다.

The esthetic restorative biomaterials are based on the development of Macro-molecular biochemistry and Engineering. This course provides to review the article about macro-molecules, and suggests the possible new macro-molecular materials as a ground substance of composite resin which has the best physical properties, and understanding an optimum combination of filler, photoinitiator and photoaccelerator with new macromolecular materials. Also this course includes the review of concepts of dentin bonding agents. The possibility of developing new dentin bonding materials will be discussed.

851,509

치과용결합제 3-3-0

Dental Bonding Materials

범람질, 상아질, 금속 및 세라믹 수복물과 접착하는 치과용 결합제의 종류 및 특성을 이해한다. 세라믹의 고효율 접착성 또한 고려하여 다양한 세라믹 접착제의 구성 성분 및 특성을 중요하게 고려하여 새로운 접착제의 개발 가능성과 임상적 특성을 논의한다.

This course studies dental bonding materials for the dentine, enamel, alloy and porcelain restorations. It also discusses the characteristics and the application of newly introduced dentine bonding agents.

851,517

치과용세라믹 3-3-0

Ceramics for Dentistry

새로운 치과용 세라믹의 개발 및 적용방법에 관한 토의한다. 주로 세라믹 및 CAD/CAM용 세라믹의 용도에 관한 논문을 분석하여 심미성과 연관된 주제를 고찰한다. 치과용 세라믹의 엑소와 기존의 접착방식 및 접합력 증대방안을 고찰하며, 세라믹의 강화 및 강화기술에 관한 주제를 포괄한다. 치과용 세라믹의 접착력 및 접합 특성을 고찰한다.

This course discusses new developments of dental ceramics and related topics, focusing on the application of castable glass and CAD/CAM ceramics. It also covers the bonding mechanism between dental ceramic and alloys, as well as techniques for better bonding strength.

851,518A

치과용 충전제 및 차례막 3-3-0

Dental Bone Fillers and GBR Membrane

티타늄, Co-Cr 계 혈관망, 불활성 및 활성 세라믹 등 치과용 임프란트 재료의 특성을 연구한다. 임프란트 표면의 개선 및 생물학적 환경제를 임프란트 표면에 도포하여 생체재의 반응을 극대화할 수 있는 방법을 논의한다. 치과용 임프란트의 설계나 옵션부의 특성에 관한 연구검토와 부식 및 피로에 관한 내용을 검토한다.

This course deals with the material scientific aspect of dental implant materials including cp-titanium, Co-Cr based alloys, inert and bioactive ceramics. Specific topics will include surface modification of dental implant surfaces such as the application of biologically active substances.

851,519

치과용폴리머 3-3-0

Polymeric Materials for Dentistry

로포폴리머, 임프란트 및 이식용 보철재료 등 풍부하게 재료의 특성을 논의한다. 의료용 임프란트, 임상, 임프란트용 아크릴릭 등 고효율 접착성 및 임상특성 및 생체적합성을 결정하는 특성 특성을 검토한다. 치과공학적 관련된 scaffold 개발 및 특성에 관한 내용을 포함한다.

This course reviews polymeric materials such as composite resins, impression materials, and maxillofacial prosthetic materials. It also covers the issues on the denture base resin, soft liner and acrylic resin for implant.

851,525

치과용기공재료 3-3-0

Laboratory Materials for Dentistry

치과용 인상재, 접착제 및 인산염계 매몰재, 치과기공용 재료, 기구 및 장비에 관한 내용을 토의한다. 규격을 검토하며 기공용 악안면 보철재의 효율을 평가한다. 치과용 장비의 특성 및 개발에 관한 내용과 기공용 재료 및 기구의 개발에 관한 내용을 포함한다.

This course studies dental gypsum products, gypsum based and phosphate based investments. It also covers materials, instruments and equipments for the dental laboratory procedures.

851,647

예방치의재료 3-3-0

Preventive Dental Materials

치과용 식고산물, 식고제 및 인산염계 매몰재, 치과기공용 재료, 기구 및 장비에 관한 내용을 토의한다. 규격을 검토하며 기공용 악안면 보철재의 효율을 평가한다. 치과용 장비의 특성 및 개발에 관한 내용과 기공용 재료 및 기구의 개발에 관한 내용을 포함한다.

This course discusses dental gypsum products, gypsum based and phosphate based investments. It also covers materials, instruments and equipments for the dental laboratory procedures.

851,728

치과용인상재 3-3-0

Dental Impression Materials

치과용 인상재를 역사적으로 고찰하고 유형 및 분류에 따른 물성과 사용방법을 토의한다. 양치대, 이가 및 고무 인상재의 특성 및 개선방법에 관한 연구결과를 논의한다. 치과용 인상재의 특성을 향상하는 방법 및 다크기능성 인상재 개발에 관한 내용을 포함한다.
This course reviews a historical background of dental impression materials. It also offers the characteristics and the application of dental impression materials, along with the new developments in the field. Other specific topics will include newer light cured impression materials and compatibility of model materials.

851.769  치과생체재료의 생체적합성 3-3-0

Biocompatibility of Dental Biomaterials

This course discusses the fundamental concepts regarding biocompatibility of dental biomaterials. It also covers biological stability and compatibility of dental biomaterials, along with standard materials for the biological evaluation.

851.810  치과용금속매식재학 3-3-0

Dental Implant Fixtures

This course reviews a historical background of dental impression materials. It also offers the characteristics and the application of dental impression materials, along with the new developments in the field. Other specific topics will include newer light cured impression materials and compatibility of model materials.

851.812A  생체재료의 생물학적 안전성 평가 3-3-0

Biological Safety Evaluation of Biomaterials

This course discusses the fundamental concepts regarding biocompatibility of dental biomaterials. It also covers biological stability and compatibility of dental biomaterials, along with standard materials for the biological evaluation.

851.813  치아재생생체재료 3-3-0

Tooth Regenerative Materials

This course reviews a historical background of dental impression materials. It also offers the characteristics and the application of dental impression materials, along with the new developments in the field. Other specific topics will include newer light cured impression materials and compatibility of model materials.

850.703A  세포신호전달 1 3-3-0

Cellular Signal Transduction 1

This course reviews a historical background of dental impression materials. It also offers the characteristics and the application of dental impression materials, along with the new developments in the field. Other specific topics will include newer light cured impression materials and compatibility of model materials.
This course deals with the biological aspects of hard tissues such as teeth and maxillofacial bones. Specific topics will include the development of bones and teeth, bone biology, bone remodeling, local and systemic regulators of bone.

851.797A 세포외기질생물학 3-3-0

Extracellular Matrix Biology

The goal of the course is for graduate students to understand development, growth, function of oral and maxillofacial tissue as network of cell signaling between cell and network, interactions between cell and protein, and network of interaction between protein and protein. The students are required to actively involve in a discussion section with the lecturers.

852.584 시스템생물학 3-3-0

Systems Biology

The goal of the course is for graduate students to understand development, growth, function of oral and maxillofacial tissue as network of cell signaling between cell and network, interactions between cell and protein, and network of interaction between protein and protein. The students are required to actively involve in a discussion section with the lecturers.

850.627A 타액 단백질체학 3-3-0

Human Salivary Proteomics

The proteomes of biofluid are especially valuable due to their potential clinical importance as sources of disease biomarkers. Saliva contains many peptides and proteins that play putative roles, including maintenance of integrity of the oral cavity and teeth, lubrication of tissues, inhibition of microbial growth and aiding taste. In this subject, student will learn the basic oral biology and disease pathology in relation with saliva proteomics.
세포막수송체학 3-3-0
Membrane transport biology

생물학의 중요한 학문 중 하나로 신경수신원과 신경망, 신경전달체계, 신경조절기전, 신경소생물학, 신경생물학, 신경생물학의 원리와 기전, 신경계의 기능과 기전에 대한 연구를 포함한다. 이 과목에서는 세포막의 구조와 기능, 이온교환체와 수화물수송체의 작용, 전기생리학적 기전, 신경전달체계의 기능, 신경계의 발달과 기전, 그리고 신경계의 기능과 기전에 대한 연구를 포함한다.

시냅스성리학 3-3-0
Synapse Physiology

시냅스는 신경세포의 기능 및 기전을 연구하는 학문이다. 시냅스에서 일어나는 신호 전달과정 및 신호의 전달기전을 이해하기 위한 기초를 제공한다. 이 과목에서는 시냅스의 구조, 기능, 기전, 시냅스의 형성, 구조, 기전, 그리고 세포내에 있는 신호전달체계의 기능 및 기전에 대해 논의한다.

신경생물학원론 1 3-3-0
Principles of Neurobiology 1

본 강좌에서는 신경생물학의 기본적인 이론과 원리를 수용하고, 신경생물학의 기전 및 기전에 대해 논의한다. 이 과목에서는 신경생물학의 기전과 기전에 대한 연구 및 논의를 포함한다.

신경생물학원론 2 3-3-0
Principles of Neurobiology 2

본 강좌에서는 신경생물학의 기전과 기전에 대한 연구 및 논의를 포함한다. 이 과목에서는 신경생물학의 기전과 기전에 대한 연구 및 논의를 포함한다.
This course aims to provide students advanced knowledge on the developmental processes that form neural circuits. The lecture will cover the mechanisms of how precursor cells differentiate to neurons and glial cells, how developing axons find their specific targets, and how specific synaptic connections are initially formed and modified by developmental programs and experience.

852.591  | 신경교세포학 3-3-0  
Gial Cell Biology

Among them, glial cells outnumber neurons by 10 to 1. Recently, it was revealed that glial cells play pivotal role in the pathophysiological conditions. In this class, the current knowledge on the molecular and cellular characteristics of glial cells will be provided. In addition, the physiological and pathological role of glial cells will be addressed.

852.592  | 신경과학연구 방법론 3-3-0  
Tools for Neuroscience Research

Currently, nerve cells have been regarded as inert cells that mainly play a supporting role for neurons. Recent studies, however, revealed that glial cells play pivotal role in the physiological function of nervous system as well as in the pathophysiological conditions. In this class, the current knowledge on the molecular and cellular characteristics of glial cells will be provided. In addition, the physiological and pathological role of glial cells will be addressed.

852.593A  | 칼슘신호의 이해 3-3-0  
Calcium Signaling

Intracellular calcium plays a putative role in the transduction mechanism. Release of calcium from the intracellular calcium stores and/or calcium influx through the various calcium channels contribute to concentration of the intracellular calcium. This course provides overview of the types of calcium channels, their functional roles and calcium signaling pathway.

852.594A  | 신경외분비생물학Ⅰ 3-3-0  
Neuroendocrine Biology I

Secretion is regulated by autonomic nervous system. Lacrimal, salivary, sweat, glands and pancreas are typical exocrine organs in our body. This course provides overview of the role of membrane receptors, ion channels and membrane transporters involved in the regulation of exocrine secretion.

852.597  | 통증학 3-3-0  
Pain in Dentistry

Pain is the main cause of visiting a hospital. Especially, chronic pain is considered as one of controllable disease entities like hypertension. In this lecture, the definition, classification, mechanism, differential diagnosis and treatment methods will be covered. More, important pains in Dentistry such as headaches, tooth pain, and atypical facial pain will be discussed in depth.

852.693A  | 신경과학 세미나Ⅱ 2-2-0  
Seminars in Neuroscience II

This course aims to provide students advanced knowledge on the developmental processes that form neural circuits. The lecture will cover the mechanisms of how precursor cells differentiate to neurons and glial cells, how developing axons find their specific targets, and how specific synaptic connections are initially formed and modified by developmental programs and experience.
Gene therapy is to correct the genetic defects and to cure the disease through the genetic engineering. Salivary glands have advantages as a target organ for the gene therapy. They are well isolated and target genes can be easily delivered to the salivary glands via the ducts. In this subject, we study the various useful vectors and their engineering techniques. Candidate genes responsible for improving the secretory dysfunction also will be studied.

Advanced Neurophysiology

Neurophysiology is a basic discipline and plays a great role in many fields of study. In this course, the physiology and the functional matters of the nervous system will be focused. In neurophysiology, the fact that the nervous system is responsible for the conscious activities in our daily life will be emphasized. The human body contains billions of neurons which communicate with each other through electrical and chemical signals. These neurons are grouped into several systems each with specific functions. The nervous system is the control center of the body and its main functions are: receiving information, processing the information, integrating the processed information, and responding to the external information. In human physiology, to this end, it is optimized to receive, process, integrate, and respond to the external information.

Topics in Regenerative Dentistry

This course will cover the fundamentals of tissue engineering techniques and basic concept of tissue scaffold, current status of development trends in target tissue/organ differentiation using the stem cells. Stem cell differentiation, the process of differentiation into specific organ cells, is one of the most important recent discoveries in regenerative medicine and dentistry using stem cell biology or tissue engineering technology, and then discuss the possibilities to regenerate dental tissues by stimulating stem cell differentiation into specific organ cells. This class focuses on the most important recent discoveries in regenerative medicine and dentistry using stem cell biology or tissue engineering technology, and then discuss the possibilities to regenerate dental tissues by stimulating the differentiation of stem cells by bio-active signal molecules, the growth and differentiation factors.

Biomaterial Engineering for Tissue Regeneration

Biomaterials including genetically modified cell as well as biopolymers and their characteristics, biomaterials in biomimetic engineering, reaction between biomaterials and biologic component in the body will be studied. Physical properties of biomaterials, physiologic characteristics and structure of biocomponent, biocompatibility of materials, immunologic consideration of tissue scaffold, current status of development in artificial organ will be introduced.

Dental Nanobiotechnology

This course is designed for students interested in nanotechnology and its application in the diagnosis/therapeutic procedure by understanding precise regulation of biologic function through cell-cell, intracellular molecular interaction. Recent
trends of nanoparticles, characterization of nanobiomaterials, biomimetics, nanotechnology in tissue engineering and its application in dental tissue regeneration will be covered.

852,878 치의과학과(Graduate School) 3-3-0
Growth factor and Genetic Engineering for Dental Regeneration

조직재생에 이용되는 성장인자의 생물학적 특성, 임상에서의 활용현황을 학습하고 성장인자 및 이들에 대한 유전자 이입에 의한 성장인자 전달효과도 학습하여 향후 임상으로의 적용가능성을 학습한다.

Biologic characteristics of growth factor for tissue regeneration, especially in the dental area, and its application in the clinical dental regeneration will be studied. In addition, growth factors and their coding plasmid transfection technology will be covered in this course.

852,881 치의과학과(Graduate School) 3-3-0
Dental Tissue Engineering

조직공학의 3대 요소인 세포, scaffolds, molecules의 조합과 이용을 통한 조직재생의 현상을 학습한다. 이에 대한 집중적인 토론을 통해 향후 발전단계를 예측하여 연구방향에 대한 논의를 진행한다.

In this course, three major components of the tissue engineering are studied especially for the reconstruction of head and neck area. This lecture is intended to predict future direction of the maxillofacial tissue engineering.

M2035.000100 줄기세포자기조직화능의이해 3-3-0
Stem cell Self-organization

줄기세포 고유 특성으로 대두되고 있는 '자기 조직화능 (Self-Organization)'은 줄기세포 분화연구의 새로운 분야로 주목받고 있음. 이에 이 분야를 이해하고, 새로운 지각을 파악함.

Self-Organization capacity of stem cell would be an additional character of stem cell. Therefore, we understand the meaning of its definition and the advanced application for human diseases.

M2035.000200 물리적스트레스를 이용한 줄기세포자기조직화 3-3-0
Regulation of Stem cell properties by physical stress

줄기세포 고유의 분화능을 물리적 스트레스로 제어하는 기술이 최근 대두되고 있음. 세포의 형태가 그 응용을 결정할 수 있다는 이론에 근거함. 이 분야에 대한 이해와 신진 지식을 습득함.

We understand the stem cell differentiation into various tissue cells by physical stress. This subject are based on a theory that 'Stem cell shape controls its fate'. We understand the theory and its advanced research product.

면역 및 분자미생물학전공 (Immunology and Microbiology)
851,627 치의과학과(Graduate School) 3-3-0
Advanced Oral Microbiology

구강의 감염전환과 관련된 세균을 선택하여 병독력인자와 병원 기전을 이해하고 이를 구강바이오필름형성을 역제시키기 위한 전략 구축에 응용한다.

This course focuses on understanding of virulence factors and pathogenesis of oral pathogens in order to apply the information to getting strategies to prevent oral biofilm formation.

851,633 치의과학과(Graduate School) 3-3-0
Molecular Basis of Microbial Pathogenicity

미생물의 감염경로, 숙주세포에 대한 반응, 숙주세포에서 일어 나는 유전자 및 생물학적 조절양상, 숙주방어의 회피 등에 대한 학문적 내용을 학습한다.

This course focuses on understanding the conceptual framework of the interaction between microorganisms and the host. Especially, this course deals with transmission routes for infectious diseases, host responses to pathogens including genetic and physiological modulation, and bacterial evasion of host defenses.

851,636A 치의과학과(Graduate School) 3-3-0
Basic Immunology

면역계가 어떻게 구성되어 있고, 면역 활성 및 억제, 회피현 상장이 미생물에 의해 일어나는지에 대해 기초자세를 습득하며 인체의 다양한 생물학적 현상들에 더불어 상관관계를 갖는 지 탐구함. 이에, 면역학적 지식을 이용한 예방백신의 개발, 저항제체포나 조직이식시 대두될 수 있는 면역기 반응을 이용한 유효적 측면에 대해 알아본다.

Principle Immunology is a course introducing a wide range of fundamental aspects of immunology, including the overview of immune system and how immune activation, immune suppression, and immune evasion occur in the host. This course covers the biological aspects of the immune responses and applications to vaccine development, antibodies for clinical use, and immune rejection response at stem cell or organ transplantation.

851,739A 치의과학과(Graduate School) 3-3-0
Advanced Immunology

면역학 분야의 최신연구동향에 믿어하여 최근에 제안되고 있는 면역학적 이론이나 신기술에 대한 심도 있는 지식을 습득함과 동시에 생물학, 치의학, 의과학, 발생학, 세포공학 및 임상의학 등 다학제간 학문분야에 적용될 수 있는 심층분야를 대상으로 한다.

Advanced Immunology provides the comprehensive knowledge together with the state-of-the-art contemporary technology in the field of immunology that are applicable to the multi-disciplinary studies comprising biology, dental science, medicine, developmental biology, cell and tissue engineering and clinical medicine.

851,763 치의과학과(Graduate School) 3-2-2
Molecular Microbiology

근래에 분자생물학이 생명학의 전반에 미치고 있는 영향은 매우 커지고 있으며, 그 의미는 더욱 커지고 있음. 이에, 이 분야의 영역에서 분자생물학적 접근이 아닌 경우는 결코 większo를 많 은 의문점들을 해소할 수 있는 해답이 되지 않아야 한다. 이에, 이 분야의 영역에서의 연구에 의한 문제의 해결을 위해 대두될 수 있는 기술이 더 필요함.

Advanced Immunology provides the comprehensive knowledge together with the state-of-the-art contemporary technology in the field of microbiology that are applicable to the multi-disciplinary studies comprising biology, dental science, medicine, developmental biology, cell and tissue engineering and clinical medicine.
This course introduces molecular biology that has been established through the study of microorganisms.

852.694 실기면역학 3-3-0

Experimental Immunology

This course offers an overview of medical classifications (Covabulary), medical knowledge representation, and related theories. Medical classifications include ICD-9, ICD-10, SNOMED, UMLS, and READ Code. Related theories include artificial intelligence and description logic.

852.570 의생명 온톨로지 공학 3-3-0

Biomedical Ontology Engineering

852.295 감염면역 세미나 1-1-0

Seminon Infection and Immunity

This course will focus on learning basic theories on ontological engineering, ontology modeling techniques, and use cases of medical ontologies. Students will also learn about ontology representational languages and how to use ontology modeling tools through projects. This course explores important issues regarding representation of complex concepts and ontology integration.

850.501 전자의무기록 3-3-0

Electronic Medical Record

This course provides some concepts, technical components, standardization issues of EMR and its future trends surrounding them. Topics covered in this course include comparison of traditional paper-based medical and currently implemented electronic medical record systems and their pros and cons. Technical components such as natural language processing, structured data entry, database, HTML, XML, Java, and DICOM are also covered.

851.533A 보건의학적지식표현 3-3-0

Healthcare Knowledge Representation

This course offers an overview of medical classifications (Covabulary), medical knowledge representation, and related theories. Medical classifications include ICD-9, ICD-10, SNOMED, UMLS, and READ Code. Related theories include artificial intelligence and description logic.
This course provides how to develop strategic alternatives in response to Korea's own competitive situations. Based on the understanding, students are required to formulate strategic issues and to build up strategic framework of thinking by tackling case study on healthcare management.

852.579

Customer Management in Healthcare Services

This course provides overall understanding of client behavior management involved with dental care services. There are many models of client behaviors including illness behavior, healthcare-seeking behaviors and so on, based on which students are required to develop appropriate modes for analyzing client behaviors visiting to dental clinics and hospitals.

852.580

Quality Assurance in Healthcare Institutions

This course provide overall understanding of basic concepts of quality issues in dental health care. Further it deals with methods and skills of quality assurance practically applicable to the dental care fields including such issues as evaluation methods, clinical guidelines, utilization control, and risk management based on those materials already implemented on foreign countries.

852.583

Expressiveness of Healthcare Vocabulary

This module provides students understanding the experimental techniques for the research related with developmental biology and embryology. This includes embryo manipulation, gametes and embryo culture, nuclear transfer and transgenic animal production. The module also provides non-mammal animal model research including drosophila, zebra fish, sea urchin and frog, and also discuss about the application of those tools to dental research.

852.589

Topics in Developmental Biology

This module provides students understanding the research on mechanisms of development, differentiation, and growth in animals and human at the molecular, cellular, and genetic levels. Areas of particular emphasis include transcriptional control mechanisms, embryonic patterning, cell-cell interactions, growth factors and signal transduction.

M0000.010500

Research Methods in Biomedical Informatics

This course provides how to develop strategic alternatives in response to Korea's own competitive situations. Based on the understanding, students are required to formulate strategic issues and to build up strategic framework of thinking by tackling case study on healthcare management.

852.893

Methods in Developmental Biotechnology

This module provides students understanding the experimental techniques for the research related with developmental biology and embryology. This includes embryo manipulation, gametes and embryo culture, nuclear transfer and transgenic animal production. The module also provides non-mammal animal model research including drosophila, zebra fish, sea urchin and frog, and also discuss about the application of those tools to dental research.

852.895

Stem Cell Biology

This module provides students understanding the definition, molecular and cellular characteristics, establishment, differentiation and clinical application of embryonic and somatic stem cells.
이 강좌에서는 생명과학연구에 필요한 분자유전학의 기본적인 개념과 원리를 강의하고자 한다. 즉, 유전을 통한 생물학적 특성의 다양화, 유전자간의 상호관계성, 유전자발현 조절, 진화 그리고 유전자재조합기술 등의 내용을 다루게 될 것이다. 이를 위하여 분자유전학의 정립과정에서 발표된 주요 문헌들과 최신의 다양한 문헌들을 집중적으로 검토하고자 한다.

이 강좌에서는 생명과학연구에 필요한 분자유전학의 기본적인 개념과 원리를 강의하고자 한다. 즉, 유전을 통한 생물학적 특성의 다양화, 유전자간의 상호관계성, 유전자발현 조절, 진화 그리고 유전자재조합기술 등의 내용을 다루게 될 것이다. 이를 위하여 분자유전학의 정립과정에서 발표된 주요 문헌들과 최신의 다양한 문헌들을 집중적으로 검토하고자 한다.

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## 약물유전체학개론

852.909 약물유전체학개론 3-3-0

Introduction to Pharmacogenomics

이 과목에서는 약물유전체학의 기본개념과 원리를 강의하고자 한다. 즉, 약물유전체학의 기본개념과 원리를 강의하고자 한다. 이를 위하여 약물유전자재조합기술 등의 내용을 다루게 될 것이다. 이를 위하여 약물유전자재조합기술 등의 내용을 다루게 될 것이다. 이를 위하여 약물유전자재조합기술 등의 내용을 다루게 될 것이다. 이를 위하여 약물유전자재조합기술 등의 내용을 다루게 될 것이다. 이를 위하여 약물유전자재조합기술 등의 내용을 다루게 될 것이다. 이를 위하여 약물유전자재조합기술 등의 내용을 다루게 될 것이다.
cepts of molecular methods and biological techniques and general research laboratory instrumentation will be covered. The language of instruction and discussion will be English.

구강병리학전공(Oral Pathology Major)

851,674 치아경조직의 병리 3-3-0
Pathology of Dental Hard Tissue

본 강좌에서는 치아경조직의 발생과 관련한 최근의 연구동향에 대해 토의하고 치아경조직을 형성하는 각종 질환의 병태생리학적 기전에 대하여 문헌 및 사례 등을 통하여 강의 및 토의하여 수강자로 하여금 치아경조직의 발생과 관련질환에 대해서 숙지하도록 한다.

This course discusses recent advances in embryology and pathophysiology of dental hard tissues, through readings of related journals and case reports.

851,787 종양기질생물학 3-3-0
Tumor Matrix Biology

종양의 침습에 있어 매우 중요한 역할을 하며 실제 다양한 종양의 특성을 이해할 수 있고 치료에의 적용 가능성도 높은 연구가 진행되고 있는 기질의 생물학적 특성에 대해 이해할 수 있도록 한다.

The extracellular matrix is important in the understanding of tumor biology, especially in invasion and metastasis. This course provides knowledge about the recent advancements in tumor matrix research.

851,788 병리조직형태분석학 3-3-0
Histomorphometry in Pathology

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851,789 분자병리학개요 3-3-0
Introduction to Molecular Pathology

분자병리학의 기법들을 이해하고 그 실제적인 적용범위와 각각의 방법들이 가지고 있는 특성 등에 대해 토론한다.

Molecular pathologic methods are now widely used in diagnostic pathology. In this course, students are introduced to basic tools for diagnosing in the area of molecular pathology.

851,790 병리조직형태분석학 3-3-0
Histomorphometry in Pathology

네균수준의 변화를 가장 직접적이고 분명하게 확인할 수 있는 전자현미경 표본의 해석법과 다양한 특수기법의 적용에 대해 알아본다.

Histomorphometry is the field of computer-aided research and diagnosis. This course provides basic information about the structure of relevant devices and their applications in clinical practice.

851,791 미세구조병리학 3-3-0
Ultrastructural Pathology

이름

851,792 두경부염증과 창상치유론 3-3-0
Head and Neck Inflammation and Wound Healing

가장 중요한 생체의 자기 방어기전인 염증의 기본적인 특성을 이해하고 이로 인해 생기는 다양한 염증성 질환을 이해하기 위한 다양한 치료법의 적용가능성에 대해 논한다.

Inflammation and tissue repair are important self-protective responses against injurious stimuli. In this course, students will discuss the basic mechanism of inflammatory responses and the processes of wound healing.
대한 전반적인 내용을 살펴보고, 이에 대한 이해를 높임으로써 중양의 예방 및 치료를 위한 새로운 분자표적치료에 대해 연구하고자 하는 학생들에게 관련기초 지식을 제공하고자 한다.

Along with the development of molecular biology, there have been ongoing active researches on tumor-specific molecular targets in order to develop target-based chemotherapeutic agents. This course will provide an overview of the molecular targets of cancers and provide a basic knowledge to students who are interested in studying new molecular target therapeutics for the prevention and treatment of cancers.

### 852.528 보철생역학연구 3-3-0

**Studies in Biomechanics in Prosthodontics**

보철물 다자인 및 치료계획 수립 시 향후 발생할 수 있는 각종 생역학적 현상을 논의하고 구강악안면 연구 전반에 걸쳐 하중 및 외력을 위한 골, 치아 안정성 및 안정성 등에 관한 전반적인 지식을 토대로하여 습득하고 이를 효과적으로 응용할 수 있는 입상수학을 갖추기 위한 보철치료 방법에 대해 논의한다. TMJ, 치아, 저작물에 대한 생역학적 해석을 비롯하여 수복재료 및 기작 보철물에 대한 피로하중의 영향에 대해 논의한다.

During prosthetic treatment, various biomechanical phenomena can be occurred. In these various biomechanical phenomena, management of the force distribution to the prostheses are very important to reduce the undesirable biomechanical phenomena. To manage complicated biomechanical response, review and investigation of the biomechanical method will be introduced. Especially, biological response to force application and fatigue loads effects on various restorative materials and prostheses will be reviewed.

### 852.529 보철수복연구 3-3-0

**Studies in Prosthodontic Rehabilitation**

구강 및 악안면영역을 보철치료 수복 시 고려할 사항과 임상과정의 각 단계별로 고찰하고 이를 임상에 응용할 수 있도록 한다. 임상에서 발생되는 다양한 증례와 문제를 대상으로 해결하기 위한 방법을 논의한다.

**구강 및 악안면영역을 보철치료 수복 시 고려할 사항과 임상과정의 각 단계별로 고찰하고 이를 임상에 응용할 수 있도록 한다. 임상에서 발생되는 다양한 증례와 문제를 대상으로 해결하기 위한 방법을 논의한다.**

**수복재료에 대한 전반적인 고찰과 함께 각 저작물의 특성에 따른 다양한 증례와 문제를 대상으로 해결하기 위한 방법을 논의한다.**

For rehabilitation of Oral & Maxillofacial area, basic clinical procedures and considerations according to prostheses types will be discussed. Through the review of various cases student can have the ability to solve the problem cases. Especially, prostodontic treatment modalities for TMD patients and cases required interdisciplinary approach will be reviewed.

### 852.531 고급보철치료계획 3-3-0

**Advanced Prosthodontics Treatment Planning**

고쳐진 동의사항과 위험 요소 관리 원칙에 따른 종합적 접근, 환자가 가진 문제 해결에 기반하여 실험적인 치료계획을 연구하고 강의한다.

Formulating pragmatic treatment plans using a problem-solving and multidisciplinary format following the principles of informed consent and risk management.
대학원(Graduate School)

Special Research in Crown and Bridge Prosthodontics

고정보철학 분야에서 치료계획, 지대치형성, 인상, 교합기, 보철물 제작, 납착관리, 조립 및 전부 도재관, 임플란트 보철학에 관한 최근 문헌고찰과 증례를 발표한다.

Recent articles and clinical cases in the field of fixed prosthodontics will be discussed, such as treatment plan, abutment preparation, impression, articulator, die, casting, all-ceramic crown and implant prosthodontics.

Special Research in Partial Denture Prosthodontics

임상 보철에서 응용되는 주요용 합금의 물리적 성질과 특성에 관하여 토론한다.

The physical properties of the casting alloys used in removable prosthodontics will be discussed in depth.

Advanced Clinical Prosthodontics

치과보철학의 기초과정을 충분히 이해한 후 전문적 지식을 습득하는 과정으로 교합, 심미, 치주보철, 임플란트, 도재, CAD/CAM, 보철을 위한 신소재 등에 관한 것을 학습하여 세미나 형식으로 진행한다.

This course aims at an understanding of basic prosthodontic principles and recent developments in clinical findings. The discussion will include occlusion, esthetics, perio-prosthodontic related topics, implants, ceramics, CAD/CAM, and new materials for prostheses.

Implant Prosthodontics

중앙의 보철치료술폐로서 치료사 및 환자에서의 그 효과의 한계, 또는 단점이 있었다. 이를 극복하기 위한 방법으로 과학적 임플란트와 대한 실험적 연구와 임상적 효과가 과학적으로 증명되어 새로운 개념과 방법의 보철술학이 확립되어 가고 있다. 이에 관련하여 그 역학적, 방사선학적, 기초적 연구결과, 임상적 술식, 제작과정, 장기적 효과의 평가, 합병증 및 최근 관련 연구에 대한 점검 등이 강의될 것이다.

Conventional prosthodontic treatments have weaknesses and limits. Osteointegrating implants have been used successfully to overcome such problems. Discussion topics include the following: history, basic study, clinical procedure, laboratory procedure, long-term effects, complication, and the latest research.

Contemporary Prosthetic Restorations Using CAD/CAM Methods

보철물 제작을 위한 전문적인 임상 및 수복 과정에서 CAD/CAM을 이용한 임상 및 기술 및 수복으로 이행되는 과정을 과학적, 임상적 방법으로 고찰하고 CAD/CAM을 이용한 보철물 제작의 이론 및 실제에 대하여 강의 및 토론한다. CAD/CAM 장비의 종류, 작동기전, CAD/CAM 수복을 위한 치아형성, 구강 내에서의 접촉 혹은 비접촉 식 인상제 및 컴퓨터에서의 인상의 수정, 완전 세라믹 수복물의 접착, CAD/CAM 보철물의 정확도 및 수복 등에 대한 문헌 고찰을 통해 CAD/CAM을 이용한 보철물 제작에 관한 전반적인 보철물의 개발 및 실제 임상시험에 유효하게 한다.

This course will discuss the historical background and clinical application of CAD/CAM prosthetics. This course also introduces equipment, modification of CAD/CAM tooth preparation, direct oral impression making using contact or non-contact optical impression, cementation and accuracy of all the ceramic prostheses, as well as the longevity of orthodontic treatment.
고급 보철수복연구 3-3-0
Advanced Studies in Prosthetic Rehabilitation

구강 및 악면의 형태적 보철물로 수복 시 고려할 사항과 임상과정은 각 단계별로 고려하고 이를 임상에 응용할 수 있도록 한다. 임상에서 발생하는 다양한 증상과 문제를 살펴보고 이를 해결하기 위한 방법을 논의한다. 보철 수복재료에서부터 수복과정에 대한 전반적인 고찰과 함께 상호작용에 따른 문제를 가진 환자의 보철 수복, 고관절 증종의 치료방법, 타파와의 협진을 통한 치료 등 총괄적인 접근을 통해 해결할 수 있도록 한다. 위험 요소 관리 원칙에 따른 종합적 접근 뿐만 아니라, 환자가 가진 문제 해결에 기반하여 합리적인 치료가 되도록 치료계획에서부터 단계적 순서, 예후 관리 등의 순차적 과정 전반에 대한 중요점을 토론한다.

위한구강회복론 3-3-0
Theories of Full Mouth Rehabilitation

완전구강회복을 위해 현재까지 발전해온 교합 이론, 임플란트와 함께 발전해온 치료 계획의 진화, 치료의 특성 등을 공부하고 이에 대해 발전된 논문들을 검토, 토의한다.

이 학교의 과정은 프로스테라미디안 과입대에서 발전된 치료계획의 진화와 치료의 특성 등을 공부하고, 이를 토대로 발전된 논문들을 검토, 토의한다.

치과보철학 임상 시행 개론 3-3-0
Introduction to Clinical Trials in Prosthodontics

2000년 이후, 다양한 설계의 임상 연구가 활발하게 이루어지고 세계적으로 발표된 논문의 수가 점점 증가함에 따라 이에 대한 연구, 치료 계획의 진화를 살펴보고, 각 임상 연구 설계의 장, 단점 등을 파악하여 실제 발표된 논문들을 검토, 평가할 수 있고, 스스로 임상 연구 설계를 할 수 있는 능력을 기르도록 한다.

치과보존학전공(Conservative Dentistry Major)

치과용고분자물성계측학입문 3-2-2
851.561 Introduction to Instrumentation for Dental Polymer Characterization

대학원 과정의 학생들에게 치과용 고분자의 물성에 대한 연구 방법론의 핵심과 응용을 위해 제공되는 과목으로서, 1. 계측의 원리와 수학적 해석 2. 각종 센서의 원리와 응용(변위센서, 압력센서, 압력센서, 온도센서 등) 3. Operation amplifier, 저항 등과 filter의 원리와 응용 및 이를 이용한 신호처리 등에 대해 설명한다. 4. A/D converting, data acquisition의 원리와 컴퓨터 interfacing 방법 5. Labview을 이용한 computer programming 및 data analysis

- 836 -
5. Labview programming and data analysis
6. Biomechanics of composite restoration
7. Rheology of dental materials

Unter the objective of this course is to help students learn what kind of pulp stimuli damages pulp tissues histopathologically, and the understand responses of pulp tissues to various stimuli. Students will analyze various forms of pulp stimuli damage pulp tissues, learn clinical operation methods to cut off paths of pulp stimuli during the process, and understand the response of injured pulp tissues. Based upon this lecture, students will be able to understand the scientific background of endodontic therapy and apply the knowledge to clinical cases.

852.641 치수질환 3-3-0
Pulp Disease

치수에 발생하는 각종 질환을 이해하도록 하는 과목으로, 치수의 전장 상태, 염증성 상태, 생리적 노화상태 및 전기상태 등에 대한 지식을 습득하게 하고, 각 종 질환의 유발인자 및 질환의 진행과정, 치료과정을 조직병리학적 및 분자생물학적 관점에서 이해하도록 하며, 이를 자극을 자연치 보호를 위한 임상치료에 적용시킬 수 있는 능력을 기르도록 한다.

This course is designed to help students understand various types of pulpal disease; pulp inflammation, physiologic aging and pulp necrosis. In this course, we will discuss the causative factors of pulpal disease, the disease process, and the healing process from histopathological and molecular biological aspects.

852.642 생활치수보존과 치수반응 3-3-0
Conservation of Pulp Vitality and Pulp Response

생활치수보존과 치수반응은 보존학의 기본이니, 치료과정에서 가장 중요한 것으로서 이에 사용되는 여러 가지 충전재, 치아우식 및 세균과 치수와의 관계를 검토하고 치수질환 시술 후에 치료에 관련된 여러 가지 인자를 강화한다.

The preservation of pulp vitality is the basis of conservative dentistry and an important part in dental practice. The topics to be discussed in this course include restorative materials, liners used in vital tooth therapy, the role of bacteria as a causative agent in pulpul disease, and the healing factor after pulpotomy.

852.644 임상근관치료학실습 3-0-6
Practice in Clinical Endodontics

본 과목은 학생들에게 근관치료의 기술학적 이해시키고 임상 근관치료를 시행할 수 있는 능력을 배양시키기 위한 실습과목으로 통상적 근관치료와 외과적 근관치료를 구분하여, 통상적 근관치료에서는 각 근관치료 속에 적용되는 다양한 시술방법들을 실습하고, 외과적 근관치료에서는 근관치료 미세수술을 할 수 있는 시술방법을 습득하도록 실습한다.

After completion of this course, students will be able to understand the basic principles of root canal treatment. Moreover, students will learn both conventional and surgical endodontic therapy. They will practice a variety of treatment methods applied to each root canal treatment procedure.

852.645 비외과적 근관치료 3-3-0
Non-Surgical Endodontics

비외과적 근관치료의 전반적인 내용 및 취침지점을 이해시키는 과목으로 비외과적 근관치료의 전반과정을 문헌을 통해 고찰한 후, 비외과적 근관치료의 이론적 근거 및 시술의 기본원칙을 이해하고, 근관치료에 관련된 근관의 해부학적 구조, 근관치료를 위한 외과적, 근관치료의 다양한 방법, 근관의 소독 및 밀폐, 비외과적 근관치료의 예후 및 상가의 변화에 인자들은 비교, 분석하며 환자의 수술후진행을 이른바 비외과적 미세근관치료법을 습득하게 하여 임상 시술에서 비외과적 근관치료의 시술 방법들을 합상시키는 능력을 가지도록 한다.

This course introduces current opinions in nonsurgical endodontic treatment through article review. Topics to be covered include canal morphology, the access opening method, canal preparation, disinfection and obturation, along with prognosis and factors affecting the success and failure of endodontic therapy. Special emphasis is placed on the micro-endodontic procedure utilizing state-of-the-art surgical microscope.

852.646 외과적 근관치료 3-3-0
Surgical Endodontics

외과적 근관치료의 전반적인 내용 및 취침지점을 이해시키는 과목으로 외과적 근관치료의 적용중 및 시술의 기본원칙을 이해하고, 이를 근거로 시술의 세부과정을 습득하게 하고, 시술 후 치료 과정을 이해하여 시술결과를 해석할 수 있는 능력을 배양한다. 또한 일부 수술적 방법을 이용한 외과적 근관치료의 복합적 근관치료를 고찰한 후, 방법을 습득하게 하여 임상에의 응용력을 높이고 앞으로의 발전방향을 토의하게 한다.

This course puts surgical endodontic therapy in perspective and introduces the latest opinions. With the understanding of basic principles of the indication and operation of surgical endodontic therapy, students will learn the detailed process of the procedure and understand the post-operative healing process. Students will also practice surgical endodontic therapy using a state-of-the-art surgical microscope so that they can apply the knowledge to clinical cases.

852.647 수복물의 유지 3-3-0
Retention of Filling Materials

치아경조직 손상부위에 수복하는 수복물이 탈락되지 않고 유지되는 원리와 개념을 이해하기 위한 과목으로, 수복물의 유지와 관련된 연구의 개방 및 다양한 형태의 경조직 손상부위의 수복물의 유지를 위한 수술방법과 Pin, Post, 외과적 결합 및 미세각막 결합에 의한 수복물의 유지 장치의 작용증, 시술법 등을 습득하도록 한다.

This course will review the principle of retention of dental restoration. Topics include cavity preparation, indications for

pin and post, chemical bonding, and micromechanical bonding procedures.

852.710 Periapical Pathosis

Periapical Pathosis

The treatment of patients with periapical pathosis involves the field and develops clinical skill in diagnosis and treatment of patients with periapical pathosis. The requirements for ideal restoration are tooth bonding procedures, color matching, and biologically compatibility with hard and soft tissues. This course will deal with the principles for selecting dental materials. The physical properties of and placement methods for new materials will be taken into consideration as well.

852.794 CAD/DAM Restoration

Cad/Cam Restoration

This course will review the fundamental and current developments in endodontic microbiology. Topics will include the sampling and culture method as well as detection of microorganisms from a root canal. Anaerobic bacteria that are related to the development of periapical lesions, and their clinical signs and symptoms will be discussed.

852.795 Dentin-Pulp Complex Biology

Dentin-Pulp Complex Biology

Bacteria is the main cause of periapical pathosis. In this course, students will discuss the latest experimental methods for periapical disease research. By reviewing articles published in latest issues of medical journals, students will also be able to obtain the this basic idea required for research in the field and develop the clinical skill in the diagnosis and treatment of patients with periapical pathosis.

852.847 Contemporary Esthetic Restoration

Contemporary Esthetic Restoration

The dentin and pulp have been studied and taught for a long time, from the point of hard and soft tissue, respectively. But in recent studies, the two tissues have shown a tight interrelation from the primary dentin formation to tooth eruption and reparative dentin formation, so they are now interpreted as being one complex. Hard tooth structure dentin and soft tissue dental pulp are considered the dentin-pulp complex. This course introduces the concepts of odontoblast differentiation, dentin formation, reparative dentin formation, and their clinical application.

852.848 Microscopic Endodontics

Microscopic Endodontics

This course will discuss the historical background and research on endodontic microbial theory. Topics will include the historical background and research on endodontic microbial theory. The requirements for ideal restoration are tooth bonding procedures, color matching, and biologically compatibility with hard and soft tissues. This course will deal with the principles for selecting dental materials. The physical properties of and placement methods for new materials will be taken into consideration as well.

852.854 Conservative Esthetic Restoration

Conservative Esthetic Restoration

This course will provide the fundamentals of microendodontics and microsurgery techniques.
치의과학과(Department of Dental Science)

This course will introduce newly developed aesthetic restoration materials that have proven to possess superior qualities. It will cover the biological evaluation, clinical application, and longevity of restoration materials as well as the bonding interaction between teeth and restoration.

**850.849 복합рез인수복의 생역학 3-3-0**

**Biomechanics in Composite Restoration**

본 강의는 복합레진 수복 중 일어나는 생역학적 현상의 원인과 결과를 분석하고 이를 연구하기 위해 사용되는 계측 장비들의 구성요소와 동작원리를 학습한다. 복합레진 중합의 동력학, 중합수축과 결과의 측정, 교두굴곡, 복합레진의 조작성에 미치는 유변학적 성질, 상아세관액의 유체역학 등에 관하여 심도 있는 학습을 한다.

This course will analyse the causes and results of biomechanical phenomenons in composite restoration, and study the structure and working principles of the instruments for biomechanical research. The polymerization kinetics of composite, measurement of polymerization shrinkage and stress, cuspal deflection, rheological properties related to the handling characteristics of composite, and the hydrodynamics of dentinal fluid will be included.

**852.602A 타액선외과  3-3-0**

**Surgery of Salivary Gland**

본 강좌에서는 타액선에 생긴 염증성 질환과 종양성 질환을 대별하고 각각의 질환에 대한 감별진단과 치료법을 심도 있게 토의 하고 최신지견을 학습한다.

This course aims at understanding recent clinical aspects of salivary gland diseases by studying references on the diagnostic imaging tools on salivary glands. It also aims at understanding and exercising treatment for salivary gland diseases.

**852.604A 악관절기능구조 및 장애론 3-3-0**

**Functional Structure & Disorders of Temporomandibular Joint**

악관절 장애의 원인 및 치료법의 일반적인 원리를 고찰하고 치료계획의 수립과 단계적인 치료법을 수립한 뒤 악관절의 기능회복을 위한 악관절개 복합술, 관절경수술 및 관협외적 악관절 수술 등을 중점적으로 강의한다.

This course focuses on the pathophysiology of TMJ dysfunction and treatment modality. Students will acquire clinical know-how based on the conservative treatment of TMD, TMJ lavage, arthroscopic surgery and open TMJ surgery.

**852.730A 악안면재건외과학 3-3-0**

**Maxillofacial Reconstruction Surgery**

종양이나 외상 등 선천적 또는 후천적 원인에 의한 두개악안면 결손부의 재건에 대한 문헌고찰과 증례분석을 통하여 두개악안면 재건술에 대한 검토된 지식과 최근의 치료경향을 익히고 가장 기능적이고 심미적인 재건술의 시행을 가능하도록 한다.

This course is designed to provide advanced knowledge and recent trends on cranio-maxillofacial reconstruction. By reviewing analyses of cranio-maxillofacial reconstruction in contemporary journals, the course will cover practical and functional esthetic reconstruction.

**852.734A 보철을 위한 구강악안면외과학연습 3-3-0**

**Seminar in Oral & Maxillofacial Surgery for Prosthesis**

보철을 위한 구강학과에서 치아-치조골 등 치주수술 임플란트의 시험, 재료의 특성, 골이식, 골유도 재생, 상아두 가공 및 골 성장한 등의 이론과 실제, 그리고 최신 경향을 토론한다.

This course deals with the recent advancements in implant installation, characteristics of implant materials, bone grafts, bone induction, sinus lifting and distraction osteogenesis. It also provides recent clinical aspects of implant surgery by studying references on the implant.
852.735A 보철을 위한 구강악만치과학3-3-0
Oral & Maxillofacial Prosthesis
무치악 질환에서 보철을 시행하기 어렵 경우에 시행되는 여러 가지 보철과 외과수술의 종류와 기법의 발달배경, 수술기법에 대한 이해를 높이고 최신 수술기법의 소개와 토론을 통해 보철과 구강악만치에의 이해를 증진시킨다.
This course deals with an advanced understanding of various preprosthodontic surgeries, technical backgrounds, and their clinical applications.

852.736A 악안면미세수술학 3-3-0
Maxillofacial Microsurgery
구강악안면외과 영역의 재건에 필요한 이식기법으로 중요한 역할을 하고 있는 미세수술기법에 대해 적용대상, 수술방법, 환자관리, 숨결, 숨후처치에 대한 문헌고찰과 임상증례를 통해 심도 있게 논의하고 최신문헌고찰을 통해 이해를 높인다.
This course will cover the scope of maxillofacial implants including the technical aspects, recent advancements, and also the pitfalls. It also provides the maintenance method for maxillofacial implants.

852.741A 두개악안면미용외과학 3-3-0
Craniomaxillofacial Cosmetic Surgery
두개악안면영역의 기형의 한 범주를 차지하는 미용외과적인 측면에서의 치료를 두개안면유합증과 관련된 증후군에 대한 분류에 서부터 방사선, 유전자학적, 분자생물학적 관점의 두개안면합 합병증의 발생, 두개안면과 관련된 신경계활성성과 두개저의 성장과 관련된 두개골의 발육과 성장 등의 성장발육에 대하여 이해하고, 또한 이의 응용치과적, 수술기법에 대한 전체적인 학습을 시행한다.
This course will cover craniomaxillofacial cosmetic surgery from the classification, pathophysiology, and molecular biological aspects, and the neuromuscular activity of craniomaxillofacial deformities. It will also cover the timing and treatment options for those kinds of deformities.

852.796A 상악동외과학 3-3-0
Surgery for Maxillary Sinus Disease
상악동은 구강과의 관계가 밀접하여 구강내 감염원에 의해 쉽게 염증이 전파될 수 있고 여러 가지 종양 및 난성종 병소를 일으킬 수 있다. 이에 대한 최선진강은 문헌고찰과 통해 학습하고 토론하여 임상적 적용을 가능하게 한다. 또한 최근에 일상진단을 적용시에 상악동 기기를 이용한 보철적 수복시 외과적 고리사항에 대해서도 학습한다.
The maxillary sinus is located closely to the oral cavity, so odontogenic disease can be easily spread there. In this course, various sinus pathologic lesions will be covered, including infective sinusitis and tumors in the maxillary sinus. It will also deal with the sinus lifting technique in implant installation.

852.797A 구강악만치과학 3-3-0
Maxillofacial Molecular Biology
양안면 영역에 발생하는 기형이나 종양은 해당 장기를 구성하고 있는 세포의 유전학적 불안정성과 이로 인한 신호전달물질의 오작동에 의하여 발생할 수 있다. 현재 인간은 약 3~4만개의 기능유전자로 구성되어 있으며 이들 유전자가 기능에 의하여 연구가 활발히 이루어지고 있고, 악안면영역 also includes 드라마나 악안면 영역에 발생하는 질환의 원인 및 치료법을 분자생물학적인 관점에서 구체적으로 밝히고 이해하고자 한다.
This course will cover the scope of maxillofacial molecular biological fields including cancer research and developmental biology for maxillofacial deformities. It will also provide prevention and treatment methods for those diseases on the molecular level.

852.799A 구강악만치과적학 3-3-0
Oral and Maxillofacial Teratology
구강악만치과적학의 기형에 발생하는 반증이나 발육성 기형의 원인을 이해하고 구강악만치과적학에 관련된 임상적, 방사선, 학적, 분자, 모형방식 등 기형에 관한 총체적인 접근방법을 숙지하고 구강악만치과적학에의 기형을 치료하기 위한 치료계획, 수술방법, 숨후처치를 학습한다.
This course is intended to provide knowledge of the etiology, diagnostic imaging, and model analysis for oral and maxillofacial deformities. It will also provide treatment planning, surgical measures, and postoperative care for those deformities.

852.800A 구강점막질환론 3-3-0
Surgical Pathology in Oral Mucosa
구강점막질환론은 구강악안면외과의 학습자료로서 보철과 전문가의 위치를 지키기 위한 관리적, 방법론적, 학적, 분자, 모형방식 등 기형에 관한 총체적인 접근방법을 숙지하고 구강악만치과적학에의 기형을 치료하기 위한 치료계획, 수술방법, 숨후처치를 학습한다.
Certain bacteria, viruses and fungi produce diseases which are manifested in or about the oral cavity. Some of these diseases or lesions are of a specific nature and are produced by a specific microorganism. This course will cover the characteristic features and surgical management of oral mucosal diseases.
This course deals with emergency situations in maxillofacial surgery. It also covers characteristics of maxillofacial trauma, management of its complications, and recent clinical aspects of emergency surgery in the maxillofacial area.

852.803A  
**Cleft Tongue**  3-3-0

**Odontogenic Tumor**

This course deals with the pathophysiology and clinical findings of odontogenic tumors, especially of squamous cell carcinoma. Topics include the differential diagnosis and clinical diagnostic criteria, imaging techniques, surgical ablation, radical neck dissection, radiation therapy, chemotherapy, immunotherapy, photodynamic therapy, gene therapy, and so on. This course also covers the recent research fields in cancer biology and the perspectives of future cancer therapy.

852.849A  
**Craniofacial Skeletal Tumor**  3-3-0

**Seminar in Oral and Maxillofacial Oncology**

This course will deal with etiology and surgical methods for the management of patients with cleft lips and/or palates and provide an understanding of speech therapy and multidisciplinary approaches to related problems by reviewing articles and conducting discussions.

852.826A  
**Molecular Biological Approach to Oral Cancer Treatment**

**Maxillofacial Distraction Osteogenesis**

This course will deal with the diagnosis and treatment of cancer patients and the management and prevention of surgical complications after cancer ablative surgeries.

852.851A  
**Maxillomandibular Anomalies**  3-3-0

**Craniofacial Traumatology**

This course deals with emergency situations in maxillofacial surgery. It also covers characteristics of maxillofacial trauma, management of its complications, and recent clinical aspects of emergency surgery in the maxillofacial area.

852.852A  
**Facial Profile Management**

This course will deal with the diagnosis and treatment of and re-constructive strategies for craniofacial traumas. It will also provide communication skills and knowledge needed to cooperate with neighboring disciplines.

852.855A  
**Facial Profile Management**  3-3-0

**Clinical and Molecular Biology**

This course also covers the recent research fields in cancer biology and the perspectives of future cancer therapy. This course also covers the recent research fields in cancer biology and the perspectives of future cancer therapy.

852.927A  
**Oral-Surgical Training**  3-3-0

**Facial Profile Management**

This course will deal with emergency situations in maxillofacial surgery. It also covers characteristics of maxillofacial trauma, management of its complications, and recent clinical aspects of emergency surgery in the maxillofacial area.

852.929  
**Oral-Surgical Training**  3-3-0

**Facial Profile Management**

This course will deal with emergency situations in maxillofacial surgery. It also covers characteristics of maxillofacial trauma, management of its complications, and recent clinical aspects of emergency surgery in the maxillofacial area.

852.933  
**Oral-Surgical Training**  3-3-0

**Facial Profile Management**

This course will deal with emergency situations in maxillofacial surgery. It also covers characteristics of maxillofacial trauma, management of its complications, and recent clinical aspects of emergency surgery in the maxillofacial area.
the ‘beauty’ in this society. Many patients now want to go through jaw bone surgery as well as traditional minor plastic surgeries. The traditional concept of ‘esthetic surgery’ among the oral and maxillofacial surgeons have to be changed related to this current atmosphere. In this course of lectures and practical lessons, some soft tissue corrections will be introduced. The post graduate students will practice with RP models and clinical instruments and materials. Meanwhile, compared to these meical aspects of curriculum, the students are not familiar with the concept of ‘face’ from the viewpoint of ‘social psychology’. Beside the technical lessons above, the students have to analyze the human face in respect to the social psychology. Therefore, we will review the traditional personalogy, compare the concepts of beauty between the western and the eastern societies and evaluate and discuss about the contemporary concept of ‘beauty’.

852.930A 임상말초신경재생학 3-3-0
Clinical Peripheral Nerve Regeneration
본 과정에서는 왜인면 악안면의 마초신경 손상의 병리, 진단 및 치료에 관한 과정을 학습한다.
In this course students learn the pathophysiology, diagnosis and treatment of peripheral nerve regeneration at head and head area.

852.931A 미세수술연습 3-1-4
Practice in Microsurgery
미세수술 기초 수기를 강의와 동물 연습을 통해 학습한다.
In this course students learn basic techniques of microsurgery using animal model.

852.932A 코골이수면 무호흡증 3-3-0
Snoring Sleep Apnea Syndrome
이 과목은 정상적이고 생리적인 수면과 수면장애에 대한 이해를 돕고자 한다. 이는 코골이와 수면무호흡증의 개인에 따른 해부학적 취약성, 진단 검사 및 도구들, 치료방법에 대해 다룬다. 강사는 수면 생리학, 수면 관련된 여러 질환과 그것의 합병증, 환자의 분류 및 심도에 따른 치료 단계에 대해 설명한다.
This course helps to understand the normal physiologic sleeping and disorders associated with sleeping. It deals with individual anatomic vulnerability, diagnostic exams and tools, treatment modality of the snoring & sleep apnea syndrome. The subject subcategorizes to physiology of sleeping, various sleeping disorders and its complications, treatment steps according to the severity and classification of patients.

852.933A 턱얼굴미용외과학 3-3-0
Maxillofacial Cosmetic Surgery
이 과목은 턱얼굴분야의 경조직 및 연조직 성형수술을 다룬다. 턱얼굴해부의 기초적인 이해를 토대로 턱얼굴미용외과학의 원리에 대해 설명하고자 한다. 강사는 미성형술, 안성형술, 주름제거술, 괄대皮성형술, 우아주 축삭술, 지방흡입술로 세분화되어 있다.
This course deals with hard tissue & soft tissue plastic surgery of maxillofacial regions. Under basic understanding of maxillofacial anatomy, it will describe the surgical principles of maxillofacial cosmetic surgery. The subject sub-
categorizes to rhinoplasty, blepharoplasty, rhytidectomy, malarplasty, angle reduction and liposuction.

852.934A 임상 구강악안면 생역학 3-3-0
Clinical Oral & Maxillofacial Biomechanics
구강악안면 영역의 골조직은 적용과 안면표정 등의 일상생활에서 발생하는 다양한 운동으로부터 기능적 부하를 받고, 이를 통해 골재생과 흡수의 균형을 유지하기에 걸리료평가를 이루고 있다. 하지만, 골조직이 저항할 수 있는 범위를 넘어서 부하를 받거나 골조직의 구조가 변화하여 기능적 부하를 이겨내지 못하게 되면, 변형적 골흡수와 관절염 또는 골절을 입증할 수 있다. 본 과목에서는 이러한 기능적 부하에 대한 정상적인 골의 반응과 임플란트 시술, 골절 정복술과 악안면 수술들의 외과적 치료 후의 변화를 임상적 생역학의 관점에서 접근하여 임상적 의미를 배우도록 한다.
Bone tissue at oral and maxillofacial field is exposed to different functional loads from daily life such as chewing and facial expression, and bone remodelling happens under homeostasis between bone formation and bone resorption. However, complications such as pathologic bone resorption, osteoarthritis and bone fracture can occur. In this lecture, normal osseous response from functional loads, and changes of bone tissue after implant treatment, reduction of bone fracture and orthognathic surgery will be accessed in view of clinical biomechanics.

852.935A 악관절질환적 안면비대칭 3-3-0
TMD Disorders Facial Asymmetry
성장기에 있어서 발생하는 안면비대칭의 원인은 정확하게 알려져 있지 않지만, 하악과의 과성장과 발목 부전과 같은 악관절의 비정상적인 성장에 대한 악관절의 변화가 잘 알려져 있다. 본 강좌에서는 이러한 비정상적인 발목의 원인에 대한 병인론적인 내용과 임상적 증상 및 치료, 그리고 안면안정의 변화에 따른 악관의 성장 발육의 변화에 대한 영향에 대해 배우도록 한다.
It is well known that over- or undergrowth of mandibular condyle can lead to develop a facial asymmetry, even though etiological factors of facial asymmetry in the growing ages are not fully understood. In this lecture, pathophysiological factors of over- and undergrowth of mandibular condyle and developmental changes of jaw bone in relation with internal derangement will be learned.

852.519P 유휴의 치수치료 3-3-0
Pulp Treatment for Primary Teeth
유휴의 치수형태 및 조직학적 구조, 치수침의 필요성, 검사, 치료방법 등을 강의하며 임상적 실례를 서로 검토 토론한다.
This course covers the form and histological structure of the pulp in primary teeth along with indications, testing methods, diagnosis and treatment modalities of pulpal therapy. Patient cases will be reviewed and discussed.

852.523P 병원치과학 3-3-0
Hospital Dentistry
병원치과학이란 일반 치과사가 아닌 각급 병원단위 내에서 이루어지는 모든 유형의 치과활동을 다루는 학문이고, 병원에서 자담할 수 있는 특수환경(의료장비, 시설 및 인력)을 이용하여 선정

<병원치과학>이란 일반 치과사가 아닌 각급 병원단위 내에서 이루어지는 모든 유형의 치과활동을 다루는 학문이고, 병원에서 자담할 수 있는 특수환경(의료장비, 시설 및 인력)을 이용하여 선정

852.523P 병원치과학 3-3-0
Hospital Dentistry
이 과목은 이론 및 실습을 통해 치과의과학과 의료기기의 역사, 구조, 설계 및 인력의 이해를 바탕으로 병원에서의 치과학적 컨텍스트를 이해하고 치과의학의 병원 현장을 살아가는 다양한 경험을 통해 치과의학의 임상적, 교육적, 치료적, 연구적 다양한 면에서의 심화를 요구한다. 병원치과학은 의료기기와 인체의 상호작용을 통해 치과의학을 이해하는 데 중요한 역할을 하는 학문이기도 하다. 이를 통해 치과의학의 전문성과 병원의 역할을 이해하고 경향성을 구축하는 것이 목표이다.
This course is designed to provide students with an understanding of the history and design of dental equipment, as well as the role of dentistry in the hospital setting. Through this course, students will gain an appreciation of the interplay between medical devices and the human body, and the importance of this understanding in the field of dentistry. The course aims to prepare students to understand the professional aspects of dentistry and the role of medicine in the context of the hospital.
All dental activities performed in hospitals, as opposed to private clinics, are covered in this course. The goal is to utilize the special advantages of a hospital environment (medical equipment, facilities and personnel) to provide safer and more efficient treatments to selected patients. Emphasis is placed on the treatment of patients with special needs using sedation and general anesthesia.

852.679 Child Psychology

The diagnosis, treatment and oral hygiene maintenance in children with mental and physical disabilities are inherently difficult. The management and maintenance thereof are discussed to promote oral health in children with special needs.

852.716 Orthodontics in Pediatric Dentistry

This course deals with the early assessment of dental and maxillofacial growth and development in children, and their modification for the guidance of future normal occlusion.

852.725 Advanced Pediatric Dentistry

This course will cover new information and treatment concepts, and their clinical applications to aid the management of oral health in children.

852.744 Preventive Orthodontics in Pediatric Dentistry

The topics for this course include the early diagnosis and treatment of initial malocclusions in primary and mixed dentitions, and the guidance of normal occlusion and maxillofacial development in children.

852.805 Dentistry for Handicapped Child

The diagnosis, treatment and oral hygiene maintenance in children with mental and physical disabilities are inherently difficult. The management and maintenance thereof are discussed to promote oral health in children with special needs.
대학원(Graduate School)  ⋅ 치의과학과(Department of Dental Science)

852.810 소아구강의과학 3-3-0  Oral Surgery in Pediatric Dentistry
소아환자의 구강외과적인 처치수식에 대해 알아보고 치료시 주의할 점과 환자의 관리에 대한 지식을 습득한다.

Oral surgery procedures in pediatric patients will be discussed along with possible complications and patient management during treatment.

850.896 임플란트주위염 3-3-0  Peri-Implantitis
골융합임플란트는 장기적인 예측가능성에도 불구하고 생물학적, 생역학적, 심미적 합병증이 일정 부분 발생한다. 특히 임플란트주위염은 임플란트 주위 연조직의 염증성 변화와 더불어 끝소실이 동반되어 임플란트의 유지를 위협하는 대표적 질환이다.

이 교과목에서는 임플란트주위염의 발병과 진행 그리고 임플란트주위염의 진단과 치료에 대하여 다룬다.

850.897 치주내과학 3-3-0  Periodontal Medicine
치주질환은 구강을 구성하는 복잡한 요소들이 총체적인 관계 속에서 일어나는 질환이다. 구강은 신체기관 중 유일하게 경조직이 연조직을 자연적으로 관통하고 있는 곳으로 각 구조조직간의 유기적인 관계에 대한 이해가 대단히 중요하다. 더구나 이러한 자연적인 기관과 더불어 존재하는 구강내 세균들의 다양성은 치주조직의 복잡한 반응을 일으킨다. 본 강의는 면역학적, 바생학적, 분자생물학적 문제들이 치주조직의 병인에 미치는 영향을 다룬다.

Periodontitis is a disease evoked by changes in the various systems that constitute the oral cavity and a complete understanding of this disease complex needs an integrative network. The human mouth is an extremely complex organ system containing a wide variety of tissues, including the calcified matrices of the teeth, and is the only site in the body where there is a natural break in epithelial/mucosal continuity. To add to this anatomical, cellular and molecular complexity, the human mouth has an enormously complex bacterial microbiota in the human body. This lecture deals with the relationship among immunology, microbiology, molecular biology, and periodontal pathogenesis.

치주질환은 구강을 구성하는 복잡한 요소들이 총체적인 관계 속에서 일어나는 질환이다. 구강은 신체기관 중 유일하게 경조직이 연조직을 자연적으로 관통하고 있는 곳으로 각 구조조직간의 유기적인 관계에 대한 이해가 대단히 중요하다. 더구나 이러한 자연적인 기관과 더불어 존재하는 구강내 세균들의 다양성은 치주조직의 복잡한 반응을 일으킨다. 본 강의는 면역학적, 바생학적, 분자생물학적 문제들이 치주조직의 병인에 미치는 영향을 다룬다.

850.897 치주내과학 3-3-0  Periodontal Medicine
치주질환은 구강을 구성하는 복잡한 요소들이 총체적인 관계 속에서 일어나는 질환이다. 구강은 신체기관 중 유일하게 경조직이 연조직을 자연적으로 관통하고 있는 곳으로 각 구조조직간의 유기적인 관계에 대한 이해가 대단히 중요하다. 더구나 이러한 자연적인 기관과 더불어 존재하는 구강내 세균들의 다양성은 치주조직의 복잡한 반응을 일으킨다. 본 강의는 면역학적, 바생학적, 분자생물학적 문제들이 치주조직의 병인에 미치는 영향을 다룬다.

852.713 치주조직의 생리학 3-3-0  Biology of Periodontium

정상적인 치주조직의 생리학 특성을 별도의 치주조직의 그것과 비교하여, 치료에 응용할 수 있다.

This course is designed to acquaint students with the fundamentals of the normal function of the periodontium and to apply it to the practice of periodontal hygiene.

852.714 치주조직이식학 3-3-0  Transplantation of Periodontal Tissue

여러 식이치주조직이식과 치주조직 이식과에 치주조직을 이식하는 방범, 예방 등에 관하여 공부한다.

Mnay kinds of graft materials are used in periodontology. This course will cover different types of graft materials, their
**대학원 (Graduate School)**

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**치주질환의 진단 및 치료의 예후 (Diagnosis of Periodontitis and Prognosis of Periodontal Therapy)**

치주질환은 성인에게 매우 유병률이 높은 만성질환이다. 이러한 치주질환을 조기에 발견하지 못하면 치아의 소실로 이어지며, 이로 인해 엄중한 음식섭취 장애와 심리적 스트레스를 일으킬 수 있다. 따라서 치주질환의 정확한 진단과 치료의 예후를 결정하는 것이 매우 중요하며, 이를 위해서는 꼼꼼한 검사와 치료가 요구된다.

**치주질환을 조기에 발견한 이유는 무엇인가요?**

치주질환은 치아의 소실을 일으키며, 이로 인해 음식섭취가 어려워지고, 심리적 스트레스를 받게 된다. 이를 방지하기 위해서는 치주질환을 조기에 발견하고 적절한 치료를 받는 것이 중요하다.

**치주질환의 예후가 어떤 것일까요?**

치주질환의 예후는 치아의 소실을 방지하고, 음식섭취 장애를 줄이는데 중요한 역할을 하며, 이로 인해 삶의 질을 향상시킬 수 있다. 하지만 치아의 소실은 예방하기 힘들기 때문에 치주질환을 조기 발견하고 적절한 치료를 받는 것이 중요하다.
영상치의학전공
(Oral and Maxillofacial Radiology Major)

852.547 삼차원영상진단학 3-3-0

Three Dimensional Imaging Diagnosis

단면영상으로부터 3차원영상으로 구성하기 위한 컴퓨터그래픽스와 영상처리기술에 대한 지식은 공부한다. 이로서 연이어서 3차원영상의 종류와 그의 장점 및 한계점을 분류하고 한계점을 극복하기 위한 해결방안들을 토론한다. 3차원영상전단의 계층기준을 종합하고 분석하며 2차원영상전단선의 기초과의 차이점을 확인하고 전단기준에 필요한 데이터들의 필요성과 이용을 인식한다. 3차원영상으로 만들 수 있는 가상치료시스템 및 응용분야를 토의한다.

The course offers lectures on the knowledge of computer graphics and imaging processing technique for 3D reconstruction of the human body. Students classify the various kinds of three dimensional approaches and find the advantages and limitations of the methods and try to solve the problems. They collect the standard data for diagnosis and analysis of 3D image and compare them with those of 2D image diagnosis. Students discuss the applications of three dimensional imaging of face and skull.

852.746 구강악안면방사선학 3-3-0

Radiographic Anatomy of Oral & Maxillofacial Region

구강악안면 영역의 해부학적 구조를 이해하고 이들 구조가 방사선학적으로 투영되는 양상을 숙지함으로써 구강악안면영역의 정상과 방사선학적으로 보다 정확하게 관찰할 수 있는 능력을 배양하고자 한다.

The concept of image formation will be introduced in this course. This course also gives the radiologic characteristics of normal anatomic structures of oral and maxillofacial region through the various imaging modalities such as plain radiography, CT, MRI, ultrasonography, and so on.

852.748 구강악안면방사선학연습 3-3-0

Seminars on Oral & Maxillofacial Radiology

구강악안면방사선학분야에서 최근 이루어지고 있는 연구동향에 대해 토의한다. 최근에 발표된 연구의 임상적 측면에 대한 도움을 주기 위함에 토의한다.

Recently published papers about oral and maxillofacial radiology will be reviewed and discussed in this course.

852.750 두경부초음파진단학 3-3-0

Ultrasonography of Head and Neck

초음파의 의학적 이용에 대한 총괄적 내용과 초음파의 물리, 생물학적 효과와 기기의 구성 및 영상기법 등을 강의하고 구강악안면 영역에서 특히 타액선 및 임파선에 대한 정상 및 병적 소견에 대한 관찰 등에 강의한다.

This course will cover the fundamentals of ultrasonography, including theory and equipment. Ultrasonographic characteristics of various pathologic conditions of oral and maxillofacial soft tissues, especially of the salivary gland and lymph nodes will be discussed.
대학원(Graduate School) 

852.852 두경부방사선치료학 3-3-0 

Head and Neck Radiation Oncology

중앙의 기본적인 병리, 전이 기전, 발암과정, 암유전자와 역학 등 중앙의 기본적인 생물학에 대해 토론하고 이를 중앙, 특히 두경부 중앙의 방사선치료의 rationale, 구체적인 방사선 치료방법 및 그 결과에 대해 토의한다.

This course will cover the basic pathology of tumors; metastatic mechanism; carcinogenesis; and cancer genes. Also, the rationale, methods, and effectiveness of radiation therapy will be reviewed.

852.853 영상물리학 3-3-0

Imaging Physics

구강악면 영역에 발생되는 질환의 진단에 사용되는 여러 영상 전단기기의 기본원리와 임상적응은 물론 영상 형성과 관련된 물리학에 대해 토의한다.

The basic principles and clinical applications of various imaging modalities used for the radiological diagnosis of oral and maxillofacial regions will be covered in this course. Physics related to the imaging will also be discussed.

852.862 구강의학영상진단학 3-3-0

Imaging Diagnosis of Oral and Maxillofacial Region

구강 및 악골의 정상 해부학적 구조를 숙지하고 방사선촬영을 통한 영상을 분석함으로 병상을 규명하고자 한다. 일반촬영, 단층촬영, 파노라마촬영, 조영촬영 및 CT, MRI 등으로 각각의 질환에 대한 특징을 비교 전단하는 데 목적이 둔다.

The understanding of normal anatomy of oral and jaw region and pathology by analysis of radiographs and the characteristics of diseases on conventional radiographs, tomographs, panoramic radiographs, fluoroscopy, CT, and MRI would be investigated.

852.551 방사선 보건 물리학 3-3-0

Radiation Health Physics

개인과 공공의 건강에 있어서 방사선의 효과를 학습하고 국제적인 방사선 방사선활영을 통한 영상을 분석함으로 방사선활영을 규명하고자 한다. 일반활영, 단층활영, 파노라마활영, 조영활영 및 CT, MRI 등으로 각각의 질환에 대한 특징을 비교 전단하는 데 목적으로 한다.

The effect of radiation for personal and public health would be considered and the international rules for radiation protection, or ICRP, would be studied. The method to decrease the radiation exposure and radiation risk would be investigated.

852.556 구강악면 감염영상학 3-3-0

Imaging for Oral and Maxillofacial Infection

구강악면 감염의 상태를 정확히 인지하고 감염의 경로를 이해하여 손상을 최소로 하기 위하여 이용되는 영상의 효율적 이용을 위한 연구 및 실험을 시행한다.

The course offers the study and experiments on the imaging system regarding to the detection, path, and useful imaging methods to reduce the damage of normal anatomy due to the oral and maxillofacial infection.

852.558 컴퓨터를 이용한 구강진단 및 치료계획 3-3-0

Computer Assisted Oral Diagnosis and Treatment Planning

컴퓨터를 이용한 자료 분석으로 진단을 향상시키는 방법을 개발하기 위한 연구 및 실험을 시행한다.

The course offers the study and experiments on the method to improve the diagnostic ability through the analysis of the various informations using computer.

M2188.000100 두경부외상진단영상학 3-3-0

Imaging For Trauma in Head and Neck

두경부와 관련된 외상 진단을 위하여 적절한 영상법의 선택법, 외상의 방사선학적 소견, 치료 후 변화에 대하여 토의한다. 또한 두경부 외상의 적절한 진단 과정에 대하여 토의한다.

In order to diagnose the trauma occurring in the head and neck area, the selection of appropriate imaging modalities, radiographic findings of trauma, and post-operative bone change will be discussed. Also, the diagnosing.

M2188.000200 구강악면영상분석학 3-3-0

Analysis for Oral and Maxillofacial Imaging

골강도와 골량, 해면골 미세구조를 사이의 관계에 대해 토의한다. 해면골의 미세구조를 분석하기 위한 다양한 방법들에 대하여 연구한다.

The course offers the investigation on the image analysis for the evaluation of bone quality in the oral and maxillofacial region. The relationship between mechanical strength, bone mass, and trabecular microarchitecture will be investigated.

851.563 치과의료행위와 의료문서 2-2-0

Dental Practice and Documents

치과의료행위는 그 대부분을 사람으로 한다는 점에서 단순한 과학적 이론이나 기술 이외에 생명의 존엄성과 관계되는 철학과 윤리가 바탕이 되어야 하고 의무와 책임 또한 따르는. 본 과목에서는 이러한 치과의료 행위의 정의와 의료과, 의료문서 및 의료문서 등 치과의료행위가 갖는 법률적 의미와 그 성격에 대해 다루고 응용된 치과의료 행위의 수행과 그에 따른 책임과 의무의 위 무 및 치과의료 행위시 발생될 수 있는 법률적 상황에 대처하는 능력을 습득하도록 한다.

Because dental practice deals with human being, it should be based on philosophy and ethics. It is also accompanied by responsibility and obligations. This course deals with the legal purport of the dental practice including the forensic aspects of the dental practice, malpractice, dental dispute, and documents. It also helps students develop abilities to conduct the dental practice right way, to understand the responsibility and obligations, and to cope with various lawful situations.
In this course, students will develop the ability to carry out the differential diagnosis of white, black, red, and ulcerative lesions in the oral area, and discuss current information about effective treatment methods for various oral soft tissue lesions.

852.632 구강진단을 위한 검사법 2-2-0
Laboratory Aids for Diagnostic Stomatology

환자 개개인의 복합적인 진단적 난점에 대한 제작적인 접근방 법의 모색을 통해 환자의 구강진단상태 및 진단상태에 대한 보다 정확하고 효율적인 치료를 시행할 수 있는 능력을 함양한다.

In this course, students will cultivate the ability to diagnose and treat oral health diseases more practically and efficiently through individualized systemic and comprehensive approaches.

852.633 악구강근학 2-2-0
Orofacial Myology

저작근 및 저작에 관련된 두경부근의 해부와 생리 및 병리적 변화에 대한 근본 연구를 고찰한다.

In this course, students will review current research on the anatomy, physiology, and pathologic changes of the masticatory muscles and head and neck muscles related to mastication.

852.639 악구강동통기능장애론 2-2-0
Myofascial Pain Dysfunction Syndrome

축두하악장애 및 삽사신경통, 설동 등과 같이 악구강영역에서 만성적인 동통을 일으키는 질환은 사회의 다변화 및 전문화와 더불어 증가 추세에 있으며 이런 질환들이 비록 생명에 지장은 없으나 삶의 질적 향상에 해로움을 초래하고 있다. 본 과목은 악구강영역에서 발생하는 각종 동통 및 기능장애 유발 및 그 치료방법들에 대하여 교육하고 이를 질환을 연구하 는 데 활성화된 최신 방법론적인 경향을 소개한다.

Diseases that cause chronic pain in the orofacial area, such as temporomandibular disorders, trigeminal neuralgia, and glossodynia, have been increasing due to the complicated social environment, and they influence the quality of life in affected patients. In this course students will study the characteristics, mechanisms, and treatment methods of diseases causing various chronic pain disorders and dysfunctions in the orofacial area, and up-to-date methodologies used to research these chronic pain disorders.

852.691 노인치과학 2-2-0
Geriatric Dentistry

노인인구가 증가함에 따라 치과의사가 노인환자를 치료하게 될 기회도 증가하고 있다. 본 강좌에서는 노화의 기전 및 노인에게서 나타나는 신체, 생리, 심리학적인 변화와 구강조직의 변화를 공부하 고, 노인환자에 대해 봉사의 치과치료가 제공될 수 있도록 하는 데 필요한 최신지식을 습득하게 하는 데 있다.

As the geriatric population increases, opportunities also increase for dentists to treat geriatric patients. This course has students study aging mechanisms, and the somatic, physiologic, and oral tissue changes in the aged population. This course also gives students the opportunity to
acquire updated information required for better dental treatments for geriatric patients.

852.723 두개안면동통론 2-2-0
Craniofacial Pain
본 강좌는 날로 증가하고 있는 두개안면 영역 만성동통의 발생 기전에 대한 이해를 바탕으로 이를 진단하고 간병하며 그에 따른 적절한 치료계획을 수립하는 능력을 습득하는 데 중점을 둔다. 또, 동통치료방법 중 유전자조작을 이용하는 최신지식을 소개하고 미래지향적 연구의 기초를 다진다.

In this course, students will gain the ability to differentiate and diagnose chronic pain in the orofacial area and establish proper treatment plans by understanding the mechanisms of chronic pain. This course will also cover current knowledge about the application of gene therapy for pain control and perspectives for future research.

852.752 임상법치의학 2-2-0
Clinical Forensic Odontology
연령감정, 개인식별 및 치과진료와 관련된 법률문제를 전망하고 해결할 수 있는 능력을 함양한다.

This course will help students to develop the ability to understand and solve the legal problems related to dental treatments, as well as cover the topics of age estimation and individual identification.

852.753 근막동통 2-2-0
Myofascial Pain
관절장애와 함께 축두하악동통의 대표적인 질환으로 알려진 근육동통에 대한 현례 및 각 운동의 의미를 정확히 파악하고 적절한 진단과 치료능력을 함양하는 데 그 목적이 있다.

This course will provide students with knowledge on myofascial pain, which is known as a representative disease of myogenous temporomandibular disorders. This course will include etiologies, mechanisms, characteristics, and treatments of myofascial pain disorders.

852.754 두통 및 안면통 2-2-0
Headache and Facial Pain
두통 및 안면통은 악구강영역에서 나타나는 만성적인 통증으로 사회의 다양화 및 전문화의 증가 추세에 있으며 삶의 질적 향상에 지배적으로 되고 있다. 본 과목에서는 두통 및 안면통의 특성과 발병기전 및 그 치료방법에 대하여 교육하고 이러한 통증을 연구하기 위한 최신지식 및 방법론을 소개하도록 한다.

Headache and facial pain are common chronic pain disorders in the orofacial area. They increase due to the complicated social environment and they influence the quality of life in affected patients. In this course, students will study the characteristics, mechanisms, and treatment methods of diseases causing headache and facial pain, and up-to-date methodologies used to research these chronic pain disorders.

852.755 악운동묘사법 2-2-0
Gnathography
정상 하악운동의 특정과 각 운동의 의미를 정확하게 파악하고, 기능장애에서 그 변화의 종류와 이에 따른 측면 능력을 함양한다.

In this course, students will learn to understand the nature of normal mandibular movement, the significance of each movement, and the changes of movements in mandibular dysfunction. Students will also discuss, compare, and evaluate various equipments for recording mandibular movements, and develop ideas for new devices.

852.756 개인식별 2-2-0
Individual Indentification
법치의학적 지식을 이용한 개인식별의 절차, 즉 자료의 수집 및 평가에서부터 자료의 보고에 이르기까지 분야에 대한 기본적인 고리적인 지식을 익히고 토론함과 아울러 이에 대한 최근의 토론을 살펴보며 토론한다.

In this course, students will study and discuss basic and practical information about the procedures of individual identification using forensic dental information. This course will also give students the chance to review up-to-date information in the latest literature.

852.757A 교흔 2-2-0
Bite Marks
치아손상, 법치의학적 개인식별과 더불어 법치의학의 중요내용 중 하나인 교흔에 대한 기본적이고 실제적인 지식을 익히고 이에 관한 최신 토론을 고찰한다. 세부 내용으로는 교흔의 특성, 교흔의 제작 및 모형 제작과 법치의학적 평가를 포함한다.

This course provides the students to study basic and practical information about bite marks, which is one of the most important issues in forensic dentistry together with tooth injury and individual identification. This course also gives students an opportunity to review updated information in the latest literatures. This course includes the characteristics of bite marks, bite mark taking and model fabrication, and evaluation by the aspects of forensic dentistry.

852.758 치과심리학 2-2-0
Psychology in Dentistry
심리학에 대한 기본지식을 습득하고 이를 토대로 근본적이고 심리학적 문제를 이해하고 이에 대처 하는 방안을 연구한다. 특히 구강안면 만성 동통과 관련되어 나타나는 우울증, 경박증 등의 심리학적 증상을 질환의 발현 및 악화에 미치는 영향을 이해하도록 한다.

In this course, students will learn basic psychology in order to understand psychologic problems related to dental procedures, and review the methods to cope with them. More specifically, this course will cover the influence of psychologic problems such as depression, anxiety, and obsessive and compulsive disorder, on the occurrence, maintenance, and precipitation of chronic orofacial pain disorders.
852.759A Structural and Systemic Immunology

This course examines immunologic reactions in oral soft tissues considered from the cellular and molecular biology perspective. This course also gives students opportunity to consider and discuss the cellular and molecular biological mechanisms, histopathological features, clinical signs and symptoms, and the treatment methods of autoimmune and immunodeficient diseases in the oral soft tissues.

852.826 Sialology

Sialology

This course will cover the components of saliva and their physiologic function. It will also allow students to recognize the diagnostic value of saliva for various systemic diseases and its future development. In addition, students will gain knowledge about the changes of the oral environment caused by salivary gland dysfunctions, discuss diagnoses and treatment methods for conditions caused by the changes, and learn the basic information related to the development of artificial saliva.

852.827 Sleep Disorders in Dentistry

Sleep Disorders in Dentistry

This course deals with the definition, history, and etiology of snoring and obstructive sleep apnea, and the significance of diagnostic information from cephalometry, tomography, and polysomnography. This course also allows students to compare the data about the effectiveness and usefulness of intraoral snoring appliances with the traditional surgical treatments in the laryngology department. Provided with the logical systemic data about snoring and obstructive sleep apnea, students will gain the knowledge for proper diagnoses and treatments for snoring and obstructive sleep apnea.

852.828 Physical Therapy

Physical Therapy

Physical therapy is one of the most popular treatment modalities together with splint therapy for patients with temporomandibular disorders and chronic pain in the head and neck area. The purpose of physical therapy is to recover the range of motion and function in temporomandibular joints and cervical spines, to correct posture, and to stretch muscles in the head and neck area. This course deals with practical methods, manipulation, and exercise therapy, and allows students to study physiologic mechanisms and the effectiveness of physical therapy.
850.966 Dentition Development
치아, 치열 및 교합의 성장 발육과 관련된 최신의 교정지식을 고찰하여 치과 교정 임상에 도움이 되는 지식을 습득한다.

This course focuses on growth and development of teeth, dentition, occlusion related to contemporary orthodontics to provide knowledge in clinical orthodontics.

850.967 Biomechanics Using Orthodontic Mini-Implant
교정용 미니-임플랜트를 이용한 생역학

This course focuses on the recent advances in biomechanics using orthodontic mini-implant to provide knowledge in clinical orthodontics.

851.574 Dentofacial Orthopedics
성장 중인 아동에서 악골의 과성장이나 열성장에 의한 상악골 하악골 사이의 성장 부조화를 악안면 정형치료로 개선하는 방법을 토대로 정형적 치료에 필요한 악골의 성장시키기, 악골의 성장방향 등에 대한 기본적인 개념과 지식을 습득한다. 이와 같은 지식을 토대로 코 grille 측정을 바탕으로 부정교합의 진단 및 치료계획을 수립할 수 있는 능력을 기르기 위한 것이다. 또한 컴퓨터를 통한 성장발육의 예측을 각종 악안면 부정교합의 진단에 이용하여 환자의 성장발육의 이론적 근거를 교정학적인 진단과 치료에 응용하도록 한다.

Dentofacial orthopedics covers the treatment of skeletal growth discrepancy by overgrowth and growth deficiency of maxilla and mandible in the growing patients. This course will cover the improved diagnostic concept of malocclusion needed for successful orthodontic treatment and stable results, and will also provide case evaluations with each diagnostic method and treatment plan. Also, It will link the prediction of growth and development to the diagnosis of various maxillofacial malocclusion, and apply the theoretical basis of the patient’s growth and development according to each case to orthodontic diagnosis and treatment.

852.830A Removable Orthodontic Appliance
가철식 교정장치

This course will teach students how to approach and resolve complex cases by understanding the analysis of cephalometric tracing which can be the basis of orthodontic diagnosis. It will also develop the ability to diagnose variable orthodontic cases and plan a treatment procedure.

852.831A History of Orthodontics
치과 교정학이 겪어온 발자취를 살펴봄과 동시에 현재까지 이어온 교정학의 역학 및 장치의 변화와 각 기법의 기저에 치열한 연구를 돌아봄으로써 앞으로 치과 교정학이 가야할 길 및 가지 철학을 생각하여 이를 임상에 반영하도록 한다.

This course starts from how orthodontics began to today’s orthodontics, focusing on the mechanics and development of appliances. We will look back on each technique and each principles and think which direction orthodontics should be headed.

852.832B Etiology of Malocclusion
본 과정은 부정교합의 원인론에 이해하고 파악하여 교정환자의 진단과 치료계획의 수립 능력을 키우기 위해 다양한 표준의 진단 및 치료계획의 수립 능력을 키우기 위해 복잡한 증례에 대한 교정적 접근과 해법을 제시한다.

This course focuses on etiology of malocclusion to help diagnosis in treatment planning.

852.839B Maxillofacial Growth and Development
안모의 성장 발육에 관한 최신 지식을 습득하게 하고, 특히 유전, 생화학, 체증기환의 이해와 두개안면의 성장분석, 성장 예측 및 임상적 응용을 할 수 있도록 한다.

This course will cover the latest information on the
growth and development of face, genetics, embryology, congenital deformity, growth analysis of the craniofacial area, growth prediction, and clinical application.

852.840  교정생역학  3-3-0
Orthodontic Biomechanics
교정치료시 치아 및 악골에 가해지는 힘에 대한 원리 및 신체의 반응을 문헌고찰을 통해서 숙지하며 실제 임상에서의 응용방법을 도와서 검토한다.

This course will cover the principle of force applied to teeth and jaws by orthodontic appliances used in orthodontic treatment and the response of the body through journal review.

852.841  순구개열교정학  3-3-0
Orthodontics for Cleft Lip and Palate
악안면 기형 중 가장 높은 빈도로 발생하는 순구개열 환자의 종합적인 치료계획 수립과 교정적 접근법을 숙지하고, 구강외과, 성형외과와의 협진에 대해 토의한다.

This course will cover comprehensive treatment planning and orthodontic approach to cleft palate and lip deformities, the most frequent maxillofacial deformities, and hold discussions with faculty members and students majoring in oral and cosmetic surgeries.

852.842  교정재료학  3-3-0
Materials in Orthodontics
교정치료기법의 발전과 밀접한 관계를 맺고 있는 교정재료의 발달과정을 고찰하고 교정재료학의 최근 성과와 향후 발전방향을 제시한다.

This course will study the developmental process of orthodontic materials, which is closely related to the development of orthodontic treatment techniques, and explore the latest findings of orthodontic material science and future development direction.

852.845  교정심미학  3-3-0
Esthetics in Orthodontics
본 과정은 교정치료의 주 목표인 환자안모의 심미성을 증진시키는 데 필요한 교정전단, 치과계획, 두개안면 성장 발육 등을 다루어 보다 심미적인 교정치료가 가능하도록 관련된 연구에 도움을 주는 데 있다.

This course will provide efficient and aesthetic orthodontic treatments and associated research by discussing orthodontic diagnosis, treatment plans, craniofacial growth, and developments needed to increase the aesthetics of patients’ profiles, the primary principle of orthodontic treatment.

852.842  하악운동학  3-3-0
Mandibular Kinesiology
악운동과 저작근 활동에 대한 기초지식을 이해하고 이를 분석하기 위한 임상적인 기초를 다지기 위한 신뢰도 높은 데이터를 얻고 해석하는 데 필요한 희리기술의 기초지식을 확립한다.

This course will cover the basic knowledge of jaw movements and the activities of masticatory muscles to consolidate the basis of the examination system, to analyze students’ knowledge, and to establish the reliable data and elementary knowledge of up-to-date equipments needed to interpret the data.

852.844  치과마취과학전공 (Dental Anesthesiology Major)
Anesthesia for Dental Treatment of Disabled Patients
장애인의 특이한 심리적, 신체적 상태는 치과치료시 올바른 치료를 시행하기 어렵게 하고, 시술 후의 합병증 가능성을 높인다. 특히 정신지체나 자폐 등 전반적 발달장애인의 치과치료, 간질 또는 뇌성마비 등으로서 치과 수술 후 복지의 수술 후 합병증을 보일 수 있는 환자의 행동조절, 협조가 안되는 소아에서의 행동조절 등에서는 치과치료를 위한 안전한 치과치료를 위한 진정법 및 전신마취가 필요하다.

This class will focus on associations between TMD and malocclusions, which may help orthodontic students understand craniofacial functional occlusion through providing valuable knowledge and perspectives about occlusion and TMD.
마취 및 행동조절법의 적용에 대하여 학습하도록 한다.

The psychological and physical impairment makes dental treatment more complicated and increase the incidence of complications after treatment. Intravenous sedation and general anesthesia can provide safe and effective dental care for patients with physical and/or mental impairments, pediatric patients and patients suffered from uncontrollable gag reflex. This course will cover the general features of patients unable to cooperate, understand or tolerate dental treatment and behavioral management with the use of sedation and general anesthesia.

852.765A 마취와 호흡기계 3-3-0

Anesthesia and Respiratory System

여러 종류의 폐질환은 전체 성인인구의 약 25%에서 나타나며 그 발생은 계속 증가추세에 있다. 특히 호흡기는 마취 중 지각적으로 영향을 받는 부위로 가이드라인과 더불어 환자의 마취에 있어 가장 중요한 부분을 차지하고 있다. 본 강좌에서는 호흡기의 해부생리와 병리생리학적 지식을 습득하고 마취와 관련한 호흡기계 변화를 실습해 가도록 교육한다.

Almost 25% of all adults in Korea have various pulmonary diseases, and the incidence of pulmonary diseases is increasing. In particular, the function of respiratory system, which is usually affected by general anesthesia and desaturation, is the most important part of good anesthetic care as well as airway management. This course will provide a in-depth knowledge of anatomy, physiology, and pathophysiology of the respiratory system, as well as as the changes of the respiratory system associated with anesthesia during dental treatment.

852.770 마취와 환자감시법 3-3-0

Anesthesia and Patient Monitoring

의학적지식과 기술의 발달 및 생활수준의 향상으로 과거에 비하여 전신검사를 알고 있는 환자가나 노인 인구가 경과치료를 받는 기회가 급증하였다. 그러나 이들 환자들 중에는 질환이나 노화로 인하여 심장, 뇌, 폐 등의 중요한 기능의 저하를 초래하고 있어 치과 치료 전후에 심혈관이나 급상승단순 죽음 등 생생한 영향을 미칠 수 있는 질병에 이환될 가능성이 점차 증가되고 있다.

따라서 안전한 치과치료를 위해서는 간호협력 환자들에게서 치과치료 중 직간접으로 인한 환자감시가 이루어져야 한다. 이를 위하여 현재 임상에서 보편적으로 사용되고 있는 환자감시제계의 종류, 원리 및 적절한 임상적 적용방법과 측정값의 해석 등에 대하여 학습하여 보다 안전한 치과치료를 위한 지식을 제공하고자 한다.

Thanks to the development of medicine and the improvement in living conditions, medically-compromised or old patients now have many opportunities for dental treatment. Many of them have such decreased functions of vital organs like the heart, brain, and lungs that they are likely to develop cerebrovascular attack or acute myocardial infarction before and after dental procedures. So, proper patient monitoring is mandatory for the safe dental treatment of high-risk patients. In this course, students will learn about the theory and practice of several kinds of monitoring systems, so that they will be able to perform treatments more safely.

852.775 외래환자치료 3-3-0

Outpatient Anesthesia

병원에 입원하지 않고 외래환자로 수술을 받는 환자의 수는 인구의 증가로 인한 의료수요의 증가, 의료보험의 확대실시, 가족구조의 변화 등 사회적 요인의 변화로 증가 인기에 있다. 이러한 외래환자치료는 의료비 경감과 환자의 이론 사후관리 등의 장점을 가지고 있으나 많은 환자들이 통상적인 입원환자와는 달리 고려해야 한다. 본 강좌에서는 외래가취환자의 선택, 마취방법의 선택과 그 장·단점, 마취의 부작용 및 처치방법, 그리고 환자교육 사항 등에 대하여 학습하도록 한다.

The changes in social systems and medical insurance system make ambulatory anesthesia more popular. Outpatient anesthesia has many advantages, such as medical cost reduction and the patient’s early return to normal everyday life. However, ambulatory anesthesia has its unique features compared to conventional inpatient anesthesia. This course provides the knowledge of proper patient selection, selection of anesthetic technique, advantages and disadvantages of outpatient anesthesia, discharge criteria and complication and its management, providing a novel insight of dental treatment which is usually performed in outpatient basis.

852.856 진정법 3-3-0

Sedation

진정법의 증가와 다양한 진정법을 범주화하고, 실제 진정법을 시행할 때 있어야할 환자 감시장치와 관련된 지식들 및 여러 약물들의 약리작용에 대하여 학습한다. 또한 진정법과 관련된 최신 지식들을 토론 형식으로 진행하며, 마지막 시간에는 실제로 진정법을 시행하는 실습시간까지 포함한다.

This course aims at enhancing to understand what is sedation, monitoring techniques, pharmacology of sedatives and classify different types of sedation techniques into categorization. This course also covers the current concepts of sedation through discussing the related topics. At the last lecture, the students will have an opportunity to have hands-on practice of sedation techniques.

852.857 통증관리 3-3-0

Pain Control

통증의 정의, 다양한 통증의 분류 및 그 기전, 통증대로 사용되는 여러가지 약물들의 약리작용 및 진통방법에 대하여 학습한다. 또한 통증표준 모델과 통증관리에 관련된 최신지식을 토론형식으로 진행하여 마지막 시간에서는 실제로 자가통증조절법을 시행하는 실습시간까지 포함한다.

This course aims at enhancing to understand the definition, classification of pain, pharmacologic actions of analgesics and different types of analgesic techniques. This lecture also provides current concepts of pain management and experimental pain models widely used for pain research conducted by our department. At the last lecture, the students will have an opportunity to perform patient controlled analgesic techniques.

852.858 치과응급처치 3-3-0

Emergencies in the Dental Office

치과진료실에서 발생할 수 있는 이물질 흡입, 의식상실 등의 다양한 응급상황의 종류와 그 절차 및 처치에 대하여 학습한다. 또한 심폐소생술 시행의 이론적인 배경을 토론하고 마지막 시간에는 Resusci Anne를 대상으로, 소아 및 성인의 심폐소생 및 기관내 삽입술을 실습한다.

Emergent situations in dental practice is increasing due to
remarkably growing dental field and aging society. This course provides the basic and in-depth knowledge of the etiology and classification of medical emergencies in the dental office such as loss of consciousness, unstable hypotension, arrhythmia, allergy, and foreign body aspiration. This course also provides basic concepts of CPR and the essential practice of CPR with the use of Resusci Anne which should be re-practiced every 2 years and advanced airway management of utmost importance in dentistry in practice.

852.864 소아치과마취 3-3-0
Pediatric Dental Anesthesia

Recently, it is very common to treat the pediatric patients under sedation or general anesthesia owing to the advanced socioeconomic status. Therefore, dentists should have comprehensive knowledge of the differences in physiologic functions between children and adults, and monitoring techniques under sedation or general anesthesia. In this course, we review the physiologic functions of respiratory, cardiovascular, and central nervous systems, the differences of vital sign(such as blood pressure, pulse rate, respiration) between adult and child, the effects of sedation or general anesthesia techniques on cardiovascular and respiratory functions, and monitoring techniques on cardiovascular systems and depth of anesthesia in children used in current practice.
This course aims to provide an overview of the dental research field for prospective students and to aid their selection of dental research area to study in depth. It introduces a range of topics from the basics to the state of the art research and techniques in dental and biomedical sciences. Topics include the fundamentals in immunology, microbiology, cell biology, developmental biology, neuro-physiology, molecular genetics, cancer biology, biotechnology for tissue regeneration and dental sciences.

**Course Code and Title**

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<td>853.505</td>
<td>치의생명과학 연구기법 3-3-0</td>
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**Course Description**

This course covers various research methods, techniques, and approaches utilized in basic and applied dental sciences. Topics include: electron microscopy techniques, microorganisms, animal studies, human studies, biomaterials study methods, immunological and histological study methods, comparison of therapy and diagnostic methods, and computer software-based statistical data analysis.

**Course Objectives**

1. To provide students with an overview of the dental research field.
2. To help students to develop fundamental skills in critical evaluation of presented research data in a seminar setting and to develop effective presentation skills to scientific audience.
3. To introduce a range of topics from the basics to the state of the art research and techniques in dental and biomedical sciences.

**Course Content**

- The fundamentals in immunology, microbiology, cell biology, developmental biology, neuro-physiology, molecular genetics, cancer biology, biotechnology for tissue regeneration and dental sciences.
- Comparison of therapy and diagnostic methods, and computer software-based statistical data analysis.

**Course Assessment**

- Seminar participation and presentation skills.
- Final presentation or written report based on current scientific literature and cutting-edge experimental techniques.

**Course Prerequisites**

- Completion of prerequisite courses in molecular biology and cell biology.

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Note: The course codes and titles are provided in Korean and English. The course content and objectives are listed in English for clarity.
develop new approaches and improve problem solving skills in their research.

853.508 Current Topics in Cell Biology I

Current Topics in Cell Biology I

This course examines the diverse cutting edge research topics in cell biology in a seminar-presentation and directed-discussion format. Topics include the molecular basis of cellular responses such as growth, proliferation, differentiation, death, survival, and migration.

853.509 Current Topics in Cell Biology II

Current Topics in Cell Biology II

This course examines the basic physiological and pathological principles in relation to skeletal, immune, neuronal, and connective tissues. A seminar presentation and directed discussion format will be employed.

853.510 Cellular Signal Transduction

Cellular Signal Transduction

This course examines the cell signaling from the extracellular aspects of the target cell to the intracellular signal transduction processes. In addition, selected topics in the regulation of some representative signaling pathways and experimental techniques used in cell signaling research will be discussed in depth.

853.511 Physical Biology

Physical Biology

This course deals with the biological aspects of hard tissues such as teeth and bones. Specific topics will include the development of bones and teeth, bone cell biology, bone remodeling, local and systemic regulators of bone.

853.512 Fundamental Developmental Biology

Fundamental Developmental Biology

This course focuses on understanding the conceptual molecular framework of microorganism-host interaction.
course covers the transmission routes for infectious diseases, host responses to pathogens including genetic and physiological modulation, and bacterial evasion of host defenses.

853.517 병원성미생물학 II 3-3-0
**Bacterial Pathogenesis II**

미생물의 방독력인자, 숙주-미생물 분자상호작용, 감염과 숙주면역반응에 대한 분자생물학적 이해에 관한 심층내용을 학습한다.

This course provides an in-depth and contemporary understanding of the molecular analysis of bacterial virulence mechanisms, host-pathogen interactions, and infection and immunity at mucosal tissues.

853.518 고급면역학 3-3-0
**Advanced Immunology**

면역학 분야의 최신연구동향에 입각하여 최근에 제안되고 있는 면역학적 이론이나 신기술에 대한 심도 있는 지식을 습득함과 동시에 생물학, 치의학, 의학, 생물학 및 임상의학 등 다학제간 학문분야에 적용될 수 있는 심층분야를 대상으로 한다.

This course aims to provide comprehensive knowledge together with the state-of-the-art contemporary techniques in the field of immunology that are applicable to other multi-disciplinary studies such as biology, dental science, medicine, developmental biology, cell and tissue engineering and clinical medicine.

853.519 점막감염면역학 3-3-0
**Mucosal Infection and Immunity**

우리 몸의 점막조직은 미생물과 균형적 상호작용하고 있는데, 이 균형이 깨어지면 감염질환이 발생한다. 점막을 특이적으로 포하는 면역세포를 포함한 점막구조를 알아보며, 점막의 방어기전과 점막에서 일어나는 면역반응의 특성을 학습한다.

Mucosal tissues interact with various microorganisms and infectious diseases take place at problems in the interactions. This course covers the structural characteristics of mucosal tissues including the distribution of immune cells, defense mechanism, and immune responses.

853.520 줄기세포생물학개론 3-3-0
**Introduction to Stem Cell Biology**

배아줄기세포 및 성체줄기세포의 정의 및 각각의 분자 및 세포생물학적 특성과 수립방법, 분화 및 임상적용에 이르기까지 줄기세포와 관련된 전반적인 내용을 이해한다.

This course aims to provide students the basics of embryonic and somatic stem cell biology: the definition, molecular and cellular characteristics, establishment, differentiation and clinical applications.

853.521 줄기세포조작기술 3-3-0
**Manipulation of Stem Cells**

줄기세포와 관련된 각종 실험기법을 이해시키고자 한다. 여기에는 줄기세포주 수립, 검증, 증식배양 및 분화유도에 관한 각종 실험기법 및 생체 내 이식에 관련된 내용이 포함된다.

This course provides students with an understanding of the experimental techniques in stem cell biology, including establishment of stem cell lines, their identification and characterization, proliferation, differentiation induction and in vivo transplantation.

853.522 발생공학 필수실험기법 3-3-0
**Essential Methods in Developmental Biotechnology**

착상전후 배아를 이용한 각종 실험과, 생물학적 원리 등에 근거한 현장 실험과, 생물학적 원리 및 실험기술에 대해 학습한다.

This course provides students with an understanding of the experimental techniques in developmental biology and embryology. Topics include embryo manipulation, gamete and embryo culture, nuclear transfer and transgenic animal production. The course also covers non-mammalian animal research models including drosophila, zebra fish, sea urchin and frog, and the application of these research models in dental research.

853.523 조직 치유 및 재생 3-3-0
**Tissue Repair & Regeneration**

조직 치유 및 재생에 관한 기본적인 원리, 조직 치유 조절 이상으로 인한 질환과 조직 재생을 도모하기 위한 새로운 접근 방법들에 대해 이해한다.

This course provides students with an understanding of tissue repair and regeneration. Topics include fundamental principles of tissue repair and regeneration, the pathologies of dysregulated tissue repair, and newly emerging therapeutic approaches to facilitate repair/regeneration processes.

853.524 조직공학의 이해 3-3-0
**Understanding Tissue Engineering**

조직공학의 정의, 조직공학의 생물학적 재료학적 측면 이해, 구조 요소의 특성, 임상적용 탐색 등 조직공학과 관련된 전반적인 내용을 이해한다.

This course aims to provide students the basics of tissue engineering: the definition, biologic and biomaterial components, their molecular and cellular characteristics, and feasibility of clinical applications.

853.525 조직공학적 세포부착기질에 의한 세포신호전달 3-3-0
**Application of Systems Biology**

조직공학적 세포부착기질에 의한 세포신호에 대한 이해를 도모하고자 한다. 세포부착기질의 물리학적 특성에 따른 세포 미세 환경 조절, 세포 기능 조절, 생체 내 세포 운영 패턴 추적, 조직 치유 재생을 위한 인공 세포부착기질 유래 신호의 이용에 관한 내용을 이해한다.

This course provides students with an understanding of cell signaling by engineered extracellular matrix. Topics that will be covered include, development and regulation of cellular microenvironment; control of cell function by engineered microenvironment; dynamic tracking of cell fate in
vivo; and application of such insights to the development and optimization of human clinical therapies for tissue repair and regeneration.

853.526 신경세포막 및 시냅스 생리학 3-3-0

Physiology of Neuronal Synaptic Membranes

시냅스는 신경세포와 신경세포가 서로 만나 신호를 전달하는 곳이다. 시냅스 신경세포막에서 일어나는 세포 간 신호전달은 조건에 의해 변화할 수 있으며 시냅스에서 일어나는 생물학적 현상을 이해하는 것은 신경 작용을 이해하는데 매우 중요하다. 본 강좌에서는 시냅스 신경세포막에 존재하는 다양한 종류의 이온채널 및 세포막 수송체의 생리적 기능과 특성 및 발현 조절을 바탕으로, 시냅스의 형성, 시냅스의 구조와 기능, 시냅스 기능성, 시냅스 신호전달현상과 고등 행동 등을 학습한다.

Synapse is where the communication between neurons occurs. The cell-to-cell signal transmission in synapse can be altered and modulated by many factors. Knowledge of the molecular and physiological mechanisms of synaptic communication is essential for a better understanding of the higher order brain functions and neuronal network processing of information. This course will deal with the diverse repertoire of membrane transporters and ion channels expressed at the synaptic membranes and the molecular details of their properties and biological function, the formation and the structure and function of synapses, plasticity and synaptic signal transductions and their related higher order behaviors.

853.527 신경세포 분화 및 신경재생학 3-3-0

Neuronal Differentiation and Neuroregeneration

포유동물의 중추신경계는 발생과정 중에 다분화능을 가진 줄기세포로부터 신경세포와 마이크로글리아를 제외한 교세포들이 발생한다. 따라서 이 강좌는 관찰하고 여러 신호전달물질을 종합해서 어떻게 신경세포 또는 교세포로 분화하는지 그 기작을 살펴볼 수 있으며, 학생들이 이러한 분화과정을 이해할 수 있도록 한다. 본 과목에서는 이러한 신경세포를 구성하는 다양한 세포들의 발생 및 분화과정을 학습하며, 또한 신경세포 종류별 특성과 생리적/병리적 기능을 이해한다.

The central and peripheral nervous systems consist of various cell types including neurons, astrocytes, oligodendrocytes, microglia, Schwann cells, and others. In this course, students are expected to learn how these different cell types develop and differentiate during nervous system development. In addition, students will learn about characteristics of each glial cell types, and their functions in physiological as well as pathological context.

853.528 신경과학 연구방법 특강 3-3-0

Topics in Methodology of Neuroscience Research

고전적으로 신경과학은 조직염색법 등 해부학적 연구방법 및 전기생리학적 연구방법을 바탕으로 발전되어 왔으나, 현재는 유전자 조작기술, 단백질 연구기술과 같은 분자생물학적 연구방법, 세포 이형 기술, 뇌영상기술, 전자현관영 개발 기술 및 행동학적 연구방법 등 다양한 최신 연구기술들이 바탕으로 연구가 진행되고 있다. 강좌를 성공적으로 마친 학생은 자신의 연구에 적합한 연구 방법을 설계할 수 있게 될 것이다.

This lecture covers various methodologies used in neuroscience. Topics include traditional means such as immunohistochemical and electrophysiological methods, as well as more recently developed techniques such as gene manipulation, proteomics, cellular imaging, brain imaging, transgenic mice, behavioral assays. Students who successfully finished this course will be able to apply appropriate techniques in their studies.

853.529 신경발생 및 교세포 생물학 3-3-0

Neurodevelopment and Glial Cell Biology

신경계는 녹색주름과 포함하는 흔한신경계와 말초신경계로 구성되어 있으며, 각각의 중추신경계와 말초신경계는 신경세포, 성장교세포, 소교세포 및 슈반세포 등과 같은 다양 한 세포로 구성되어 있다. 본 과목에서는 이러한 신경관련 세포의 발생 및 분화과정을 학습하며, 또한 신경세포 종류별 특성과 생리적/병리적 기능을 이해한다.

The central and peripheral nervous systems consist of various cell types including neurons, astrocytes, oligodendrocytes, microglia, Schwann cells, and others. In this course, students are expected to learn how these different cell types develop and differentiate during nervous system development. In addition, students will learn about characteristics of each glial cell types, and their functions in physiological as well as pathological context.

853.530 고급신경생리학 3-3-0

Advanced Neurophysiology

신경계는 내분비계와 더불어 대부분의 신체활동을 조절하는 기능을 가지고 있다. 이를 위해서 신경계는 수많은 정보를 받아들이고 통합하여 적절한 반응을 일으키는데, 본 강좌에서는 신경계의 일반적인 특성과 작용을 살펴 신경계가 이와 같은 기능을 할 수 있는 이유를 알아본다. 그리고 감각과 운동에 관련된 신경계의 기능에 대해서 자세히 살펴본다.

Human nervous system plays a central role in regulating human physiology. To this end, it is optimized to receive, process, integrate, and respond to the external information. In this course, general characteristics and functions of the nervous system that enable such pivotal physiological roles will be addressed with special emphasis and depth on the sensory and motor function of nervous system.
보건 대학원
Graduate School of Public Health
<table>
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<tr>
<th>900.502A</th>
<th>지역사회보건실습 3-0-6</th>
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<tbody>
<tr>
<td><strong>Community Health Field Training</strong></td>
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<tr>
<td>본 실습은 지역사회 현장에서 실습하는 실습으로서 지역사회 진단을 통한 그 지역의 보건요금 및 환경 등의 문제점을 파악하고 그에 대한 해결방안을 모색하고 그 해결방안을 현장에서 실시함으로써 학생들이 스스로 경험할 수 있는 기회를 제공하고 Team Work를 통한 보건사업 수행능력을 배양하도록 하는 학습 과정입니다.</td>
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<td>This course will provide an opportunity to apply academic experience to actual situations related to public health and environmental problems. It will also provide opportunities to synthesize knowledge from previous experiences and courses and to evaluate selected approaches to problem solving in community-related problems.</td>
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<th>900.504A</th>
<th>역학원론 및 실습 3-2-2</th>
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<tbody>
<tr>
<td><strong>Principles of Epidemiology</strong></td>
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<tr>
<td>역학원론 및 실습 과목은 석사과정의 공통필수과목으로서 보건문헌에서 응용되는 역학의 개념과 영역을 이해하고 실습을 통한 보건사업 수행능력을 배양해 간다. 이들 기초로 질병발생과 이와 관련되는 원인간의 원인해석을 역학적인 개념에서 획득하고 질병의 원인구명을 위한 연구방법들을 구할 수 있도록 이론과 실습을 통해 강화한다. 실습시기는 소집단 토론 중심으로 우리나라나 외국에서 발생했던 질병의 집단발생 예들을 자료로 이론에서 배운 지식을 활용, 역학적인 문제의 해결 능력을 배양해 간다. 즉 국민의 증진을 목표로 하여 질병예방과 관리, 질병의 원인구명, 질병발생을 예방할 수 있는 전략개발, 보건사업의 평가 등을 내용으로 다룬다.</td>
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<td>In this requisite course, students will learn the core concepts and basic skills of epidemiologic methods used in various areas of public health. During classes and tutorial sessions, lectures and exercises will present theories and practical methods for the study of the distribution and determinants of disease occurrence. Tutorial sessions will introduce several actual epidemiologic investigations conducted in Korea and abroad. Students will perform the problem-solving exercises to experience the process of epidemiologic studies.</td>
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<tr>
<th>900.579A</th>
<th>보건통계학개론 3-2-2</th>
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<tbody>
<tr>
<td><strong>Introduction to Biostatistics</strong></td>
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<tr>
<td>보건통계학의 기본적인 이론을 이해하고 실습을 통해 자료를 수집, 처리, 분석 및 평가하는 데 필요한 통계기법을 습득하게 한다. 본 과목의 내용은 주로 일반통계부문에서 정규지표와 산포도, 정규분포 및 그의 여러 가지 성질, 카이제곱분포, 포아슨분포, F분포와 그의 검정법, 추정법, 분석적, 상관 및 회귀분석법을 포함한다.</td>
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<tr>
<td>This course is designed to introduce a basic concept in biostatistics for students who are pursuing their career in public health. Data collection and analysis is a main theme of studying this subject. It ranges from descriptive statistics to statistical inferences of t-test, z-test, chi-square test, and linear models Computer exercises will be accompanied for efficient understanding of statistical reasonings.</td>
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<tr>
<th>902.661</th>
<th>보건학개론 3-3-0</th>
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<tr>
<td><strong>Introduction to Health Science and Services</strong></td>
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<tr>
<td>세계보건기구는 진강이란 단순히 질병이나 기능장애가 없는 것으로 이해하지 않고 사회적인, 정신적, 그리고 사회적으로 안녕상태가 총체적으로 존재하는 것을 의미하고 있습니다. 보건학이란 다양한 분야의 학문적 지식을 보건문헌에 적용하여 이와 같은 건강상태를 유지하도록 하는 것이 목표입니다. 따라서 보건학은 다양한 학문적 배경을 인류의 건강을 향상시키기 위한 분야에 활용하기 위하여 보건문헌에서 종합적으로 논의되는 내용들을 설명하고자 하는 학문입니다. 따라서 보건학이란 보건학의 정의와 의의, 그 내용을 중심으로 보건학의 분과와 역할, 연구방법과 건강증진의 방향, 환경보건학의 내용 등을 종합적으로 도와한다.</td>
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<td>This course cover wide scopes of public health area. The World Health Organization (WHO) defines health as 'a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity'. Public health aims at helping peoples to maintain health by using various disciplines into public health area. As an introductory course in the field of public health, the subject emphasizes identification of essentials and roles, research methodology and direction of public health practices including environmental health covering concept of contents and meanings.</td>
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<tr>
<th>900.511A</th>
<th>보건사 3-3-0</th>
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<tbody>
<tr>
<td><strong>History of Health &amp; Medical Care</strong></td>
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<tr>
<td>의료 및 공중보건사업의 역사적인 발달과정과 배경을 검토하고 사회, 정자, 문화적 배경을 근거로 하며 질병의 변화양상과 이에 대한 대책의 발달과정을 이해시킨다. 공중보건의 기원, 희랍, 로마, 중세기의 보건활동 내용을 알아보고 미래의 보건사업에 대한 검토를 하여 고찰의 능력을 길러준다.</td>
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<tr>
<td>This course reviews the history of medical science and public health services. It also introduces the changing patterns of disease, development of environmental sanitation and public health measures, based on a review of the socio-political-cultural contexts. This course was newly established in 1985 to meet the increasing demand of the community to treat important contemporary public health problems. The course provides an opportunity for both the teacher and students to expand and develop epidemiological methodologies to study causal associations between health hazards and non-biological agents.</td>
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<tr>
<th>900.513A</th>
<th>보건정책관리학전공 (Division of Health Care Management and Policy) 902.661</th>
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<tbody>
<tr>
<td><strong>Introduction to Health Economics</strong></td>
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<tr>
<td>경제학의 기본이론과 분석방법을 이해하고 이를 보건서비스부문에 응용함으로써 보건서비스의 생산, 분배 및 소비에 관한 이해와 그에 관한 보건행정, 정책수단을 강론한다. 보건서비스의 수요와 공급결정요인 및 의료보험은 보건서비스시장에 미치는 영향을 분석하고, 병원이 보건서비스부문에서 하는 역할 및 비용-비용의 이론의 구조와 정책해석을 연계하며, 곧으로 보건서비스시장에 대한 정책수단의 규제가 어떻게 밀집되어 있는지 알아보고 가장 pró가 하는 것을 자유시장경제체제와 비교하며 공부한다.</td>
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<tr>
<td>This course will cover the economic analysis of medical and insurance markets and the production of health services.</td>
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Using analytical techniques, it will explore issues in the consumption and production of health services and in provider behavior.

900.529A 理財政策論 3-3-0

Theories of Health Care Organization

번역결과

현대의 리 adalah 의사나 야사 같은 보건의료 직업집단, 병원이나 재 약회사 같은 보건의료 생산기관, 그리고 거시적인 수준의 의료체 도와 의료체계 등 조직을 통하여 만들어지고 제공되는 이 강좌는 일반 조직이론을 기초로 보건의료조직이 갖는 여러 가지 특성을 이해하고 조직내의 권력과 조직통제, 조직과 환경의 관계가 보건 의료서비스의 생산과 결정에 어떤 영향을 미치고 있는가를 이해하 는 것을 목적으로 한다.

Health care is produced and delivered by complex organizations such as medical occupational groups, hospitals, and the health care system as a whole. Thus, the goal of this course is to understand the nature of health care as a product of complex organizations. The course will review the basic theories of complex organizations and apply them to health care phenomena. Focus will be on power and control in health care organizations and the relations between the organization and its environment.

900.530B 理財政策論 3-3-0

Health Care Financing Policy and Management

본 과목에서는 거시적인 관점과 미시적인 관점, 그리고 경제학 적 관점과 재무관리적 관점을 통한 보건의료재정을 조정하고 배 분하며 운영하는 정책과 관리를 고찰한다. 첫째, 거시적 보건재정 정책의 관점에서 조사, 사회보험, 민간보험, 환자부담수 cryst를 갖는 다양한 보건의료재정의 역할과 장단점을 고찰하고 다양한 보건재정 정책의 성과를 비교 평가한다. 둘째, 보건의료기관 및 보건의료 산업에서 효율적인 재무자원의 관리에 필요한 지식을 제공한다. 재무제표의 이해, 재무분석, 현제자산계산, 이자율의 결정, 자본운용과 투자분석 등은 관리적인 재무자원 관리에 필요한 지식을 제공한다.

This course examines the policy and management associated with the generation, pooling and allocation of financial resources in the health sector. It first, examines the pros and cons of different types of financing sources for health care, namely, tax, social health insurance, private health insurance, and out-of-pocket payment. It reviews the comparative performance of different health care financing systems. Second, it deals with the basic concepts of finance, accounting and financial analysis and their applications to health care institutions and industry. Topics include time value of money, financial statement analysis, capital market mechanisms, capital budgeting, costing, and cost allocation.

900.536 女性egend 3-3-0

Women's Health

여성들은 남성과는 신체적인 생리적인 차이에서 상이한 면이 많다. 특히 최근에 여성은 사회의 사회적 분석에 따라 사회적인 여성의 능력과 가치는 제조되고 있고, 이에 따라 여성의 특수한 상태에서 감안하여야 하는 건강문제를 집중적으로 토의한다. 신체 적 생리적인 문제로부터 사회보건학적인 측면에서의 여성의 건강 문제를 심층토의한다.

The objectives of this course include the following: to provide the student with an overview of the situation of women and men in a variety of settings; to make a case for gender equity as a primary objective in development; to discuss the main obstacles to achieving equality between women and men; and to describe the policy initiatives most appropriate to promoting gender equity in specific cases.

901.762B 女性保健 3-3-0

Research in Equity and Healthcare

건강과 보건의료의 향양성에 대해 여러 이론을 검토하고 정책 을 포함하여 문제해결의 능력을 기르는 것을 목표로 한다. 구체적 인 대상은 역학을 사회계층, 성(gender), 지역, 인종, 연령, 소수자, 빈곤 등이며, 주제별로는 정책의 기본개념, 윤리와 규제, 측정, 관 논의와 일반화 관계와 대책, 정책적 접근 등을 학습한다. 또한 최근의 건강과의 정책과 관리와 사회적 성격연구와 실천결과를 발굴하 고 이를 현실에 적용할 수 있는 능력을 배양한다.

This course will do in-depth theoretical study of equity issues in health and healthcare. It will examine various topics in equity: the basic concept, philosophy and ethics, data collection and analysis, current and future researches; the application to policymaking. Discussions will cover major equity issues related to socioeconomic class, gender, neighborhood, race, age, minority groups, and poverty.

902.507B 女性保健 3-3-0

Aging and Public Health

노인보건 정책과 관리 분야의 연구 및 실험의 근간이 되는 노 인보건 분야의 주요 개념, 이론 및 논점들을 소개한다. 노령화를 다각적(예: 사회적, 심리적, 신체적) 측면에서 고찰하고, 노령화가 개인, 가족, 지역과 사회에 미치는 영향을 검토한다. 노령화에 대한 보건의료관련에서의 이해를 확장하고, 그 바탕 위에서 노인보건 분야의 주요 논점들-성공한 노화, 건강 정책 요인, 건강 서비스 이용 결정 요인, 노인보건서비스, 노인복지의 윤리 문제 등-에 대한 토론한다. 노인보건 분야에 있어 다학제간 협력의 중요성을 논의한다.

This course introduces the emerging field of public health gerontology. It presents the aging process in the context of social, psycho-behavioral, and physical changes, and its implications for the individual, families, the community, and society, as a foundation for study in health services and policy for aging populations. Students have an opportunity to examine aging and its key concepts from public health perspective, and to discuss major topics in public health gerontology, such as successful aging, determinants of the health and health care utilization of older people, aging programs and policy, and common ethical issues in later life. The value of interdisciplinary collaboration is emphasized.

902.517B 女性保健 3-3-0

Theory and Practice of Health Security

건강보장의 기본개념과 그 실험을 학습하여 건강보장제도와 정 책을 분석, 평가하고 이를 관리와 사회적 해결능력을 기르는 것을 목표로 한다. 건강보장의 기본 개념, 역학, 재정, 규제, 보건의료의 윤리, 관리, 민간보험 등에 중요한 학습주제이다. 이론을 적용하여 국내외 건강보장의 정책과 제도를 분석하고 평가하는 것도 범위에 포함한다.
The objective of this course is to understand basic concept and methods of health security including insurance-based and tax-based systems. Main topics will include basic principles, history and development, financing, benefit, healthcare management, governance and management, and private insurance. Also basic theories will be applied to analyze current systems and policies of some countries.

Comparative Health Systems and Policy

This course will identify the similarities and differences among national health care systems and policy in the world, in terms of comparative methodology, history, and types of and changes in national health systems. The ultimate goal is to learn lessons from the experiences of other countries.

Studies in Health Care Policy

The goals of this course are to: formalize the interactive effects of health and health related factors in the organization and delivery of health care at the global level; develop and apply the analytical tools to evaluate policy through practical study of current health issues and critique of health policy in developing countries; understand current activities of international health organizations and criticize their positions and manners they are performing.

Methods of Research in Health Economics

Academic literature on economic evaluation in health care has increased rapidly. It ranges from cost-effectiveness and cost-benefit analyses to cost-utility analysis. This course will cover the basic appreciation of the nature of economic evaluation and its relevance to health care decision making on all levels.
Aging and Long-term Care Policy

This course provides an understanding of policy issues related to aging and long-term care. First it examines the implication and impact of aging on labor market and capital market including pensions. Second, it examines the pros and cons of various financing options for long-term care including pensions. Third, it examines the delivery and impact of aging on labor market and capital market including pensions. This course is based on...
This course focuses on the organization and management of long-term care services to maintain and promote the health, quality of life, and well-being of the elderly and people with chronic conditions. This course provides a comprehensive overview of a wide array of aging programs and services across the continuum of care and factors influencing living arrangements. The essential components of administering long-term care facilities are examined, including leadership and human resource management, quality assurance, measures of effectiveness, information systems, and strategic management and planning. Regulatory, social, and ethical issues relevant to long-term care administration are also discussed.

902.689 Advanced Seminar in Organizational Analysis of Health Care Field

This course offers an intensive exploration of the macro, micro aspects of health care organizations(HCOs) more effective. It provides students an opportunity to (1) learn the various theories and concepts of strategic management applied to healthcare, (2) examine organizational structures of HCOs, administrative process, and performance, (3), identify problem areas confronting HCOs, and (4), develop strategies for organizational innovations. Emphasis will be placed on the students’ ability to use critical thinking and analyze the major organizational issues in HCOs from a manager’s viewpoint.

902.690 건강위험관리와 커뮤니케이션 3-3-0

Health Risk Perception & Communication

이 강좌는 위험에 관한 개인과 사회의 인식 및 위험 커뮤니케이션 관련 이론을 학습하고, 그 이론들이 건강과 환경 위험 연구에 적용된 사례를 검토하는 기회를 마련하여 우리 사회의 안전과 건강을 더욱 효과적으로 보호할 데 방안을 모색하는 학생들의 능력을 높이기 위해 개설되었다. 이 주제 강좌의 구체적인 학습 목표는 다음과 같다. 첫째, 위험, 위험 인식, 위험 커뮤니케이션에 관한 주요 개념과 이론을 소개한다. 둘째, 건강과 환경 위험을 다루는 위험 연구의 성과와 한계를 비판적으로 검토한다. 셋째, 기존 이론을 수정하거나 통합하여 건강 및 환경 위험 관리 및 커뮤니케이션 방법을 제시한다.

This course explores the theories and concepts of health and environmental risks. Students will also examine how the public communicates with the media, social institutions, and scientists, as well as various health professionals regarding these risks. Emphasis will be placed on critical reviews of past research on environmental and health risks management and communication. Students will be asked to develop new studies for protecting health and safety of the society, by either editing their basis theory, or by combining more than one theory.

'보건의료 공급자와 소비자'라는 학과목 명칭이 산업적 또는 경제학적인 의미를 갖추고 있어 수강생들의 이해를 사로잡고 있다.
The terminology of “Health care providers and consumers” has the misleading connotation of the medical-industrial or economic discipline. Since this course usually deals with the relationship between doctors and patients, the state and doctors, the market economy and doctors, I want to change the name of the course into “the state, economy and medical profession”.

902.704 국제보건정책 3-3-0

Global Health Policy

International (Global) Health is an area of study that spans various fields and disciplines, including public policy, economics, law, anthropology, epidemiology, and health sciences. The course focuses on the political and economic factors that influence health systems and policies. Students will learn about the principles of research designs in social sciences (concepts, components, and analytic framework etc.) and the multidisciplinary fields of health services research[HSR]/health systems and policy research[HSPR]. Students have opportunities to discuss recent research trends and issues in the fields in relation to a country(countries)’ health systems they are interested in. This course also promotes students’ understanding of the principles of research designs in social sciences and provides opportunities to apply such understanding to develop research ideas and plans on the topic of their interests in HSR/HSPR.

M2059.000100 건강정책의 정치분석 3-3-0

Political Analysis of Health Policy

The course covers the political factors in health policies and practices. It focuses on the political and economic factors that influence health systems and policies. Students will learn about the principles of research designs in social sciences (concepts, components, and analytic framework etc.) and the multidisciplinary fields of health services research[HSR]/health systems and policy research[HSPR]. Students have opportunities to discuss recent research trends and issues in the fields in relation to a country(countries)’ health systems they are interested in. This course also promotes students’ understanding of the principles of research designs in social sciences and provides opportunities to apply such understanding to develop research ideas and plans on the topic of their interests in HSR/HSPR.

M2191.000200 정신보건세미나 3-3-0

Seminar in Mental Health

Mental health is a top health policy agenda in Korea and international society. Students learn the concepts of and the theories and perspectives on mental health/mental illness, based on which they examine major topics in mental health in social context and also research trends on high risk groups in mental health across the life cycle. The course offers understanding of epidemiology of mental health/mental illness, and its contributions to health, well-being, and social well-being. Students have opportunities to apply such understanding to develop research ideas and plans on the topic of their interests in HSR/HSPR.

M2072.000100 거시보건경제세미나 3-3-0

Seminar in Macro Health Economics

인구 고령화, 신약기술 발전 등은 한정된 자원의 보건 의료부문 투입을 더욱 가속화하고 있으며, 세계화, 의료보장 변화와 이를 둘러싼 각종 정책 정책은 국민건강과 의료서비스 푸짐을 통해 정책에 대한 영향을 미치고 있으며, 또한 우리 사회는 의료인력 및 시설의 불균형 분포, 의료비용의 양극화, 세계화의 결과 등 많은 도전에 직면해 있다. 이 강좌는 거시적 수준에서 보건의료부문의 새로운 도전들의 원인과 가능한 대책을 규명함에 있어 보건경제학적 분석능력을 제공하는 데 기여함.

M2191.000100 보건시스템과서비스 연구 3-3-0

Studies in Health Systems and Services

The course covers the political factors in health policies and practices. It focuses on the political and economic factors that influence health systems and policies. Students will learn about the principles of research designs in social sciences (concepts, components, and analytic framework etc.) and the multidisciplinary fields of health services research[HSR]/health systems and policy research[HSPR]. Students have opportunities to discuss recent research trends and issues in the fields in relation to a country(countries)’ health systems they are interested in. This course also promotes students’ understanding of the principles of research designs in social sciences and provides opportunities to apply such understanding to develop research ideas and plans on the topic of their interests in HSR/HSPR.

M2059.000100 건강정책의 정치분석 3-3-0

Political Analysis of Health Policy

The course covers the political factors in health policies and practices. It focuses on the political and economic factors that influence health systems and policies. Students will learn about the principles of research designs in social sciences (concepts, components, and analytic framework etc.) and the multidisciplinary fields of health services research[HSR]/health systems and policy research[HSPR]. Students have opportunities to discuss recent research trends and issues in the fields in relation to a country(countries)’ health systems they are interested in. This course also promotes students’ understanding of the principles of research designs in social sciences and provides opportunities to apply such understanding to develop research ideas and plans on the topic of their interests in HSR/HSPR.

M2191.000200 정신보건세미나 3-3-0

Seminar in Mental Health

Mental health is a top health policy agenda in Korea and international society. Students learn the concepts of and the theories and perspectives on mental health/mental illness, based on which they examine major topics in mental health in social context and also research trends on high risk groups in mental health across the life cycle. The course offers understanding of epidemiology of mental health/mental illness, and its contributions to health, well-being, and social well-being. Students have opportunities to apply such understanding to develop research ideas and plans on the topic of their interests in HSR/HSPR.

M2072.000100 거시보건경제세미나 3-3-0

Seminar in Macro Health Economics

인구 고령화, 신약기술 발전 등은 한정된 자원의 보건 의료부문 투입을 더욱 가속화하고 있으며, 세계화, 의료보장 변화와 이를 둘러싼 각종 정책 정책은 국민건강과 의료서비스 푸짐을 통해 정책에 대한 영향을 미치고 있으며, 또한 우리 사회는 의료인력 및 시설의 불균형 분포, 의료비용의 양극화, 세계화의 결과 등 많은 도전에 직면해 있다. 이 강좌는 거시적 수준에서 보건의료부문의 새로운 도전들의 원인과 가능한 대책을 규명함에 있어 보건경제학적 분석능력을 제공하는 데 기여함.
Aging and new health technologies accelerates the consumption of scarce resources in health care sector. Globalization and privatization of health care, and various government policies have profound effects on the health of the population as well as health expenditure. Besides, our society faces with many challenges including maldistribution of health manpower and facilities, and polarization of and inter-generational inequity in health care. Using the health economic approach, this course aims to investigate the causes and possible solutions of these new challenges at the macro level.

**Evidence Based Health Policy**

Evidence-based public health policy is designed to introduce students to evidence-based public health policy with emphasis on examples. Specifically, this course covers topics such as searching the scientific literature and organizing information, assessing scientific evidence for public health action, understanding and applying analytic tools, developing and prioritizing intervention options, developing an action plan and implementing interventions, and evaluating the program and policy.
보건대학원(Graduate School of Public Health) :: 보건과(Dept. of Public Health)

their integration are explored. Multilevel health promotion cases are examined and compared to discuss implications for research and practice.

M2072.001000 보건정보기술과 정책 3-3-0

Health Information Technology and Policy

인터넷과 대신전환, 기술발전 등의 사회 변화에 따라 보건의료와 의료분야에 정보통신기술의 활용이 관련 논의와 도입이 활발하다. 이 강의는 인포마틱스와 그 이론적기술에 대한 기초적 이해를 보건학과 관련학문에서 제공하고자 한다. 또한 주요 정보통신기술 툴(tools)을 소개하고 이들의 국내 및 국제 보건 분야에서의 활용과 가장 관련 연구와 실제에 대해 학습하고 토론한다. 보건의료 및 공공복지 분야의 정보통신기술의 역할과 보건복지기술정책 현황과 과제를 논의하고 제시한다.

The utilization of Information and communication technology (ICT) in healthcare and wellness· caregiving are widely discussed and adopted, triggered by social changes including population aging, increasing chronic illness, and technology advancement. This course intends to provide basic understanding of informatics and its applications in healthcare at public health perspective. It gives an overview of the utilization and evaluation of key ICT tools in domestic and public health settings. Discussed are roles of ICT in healthcare and public welfare fields and current status and future agenda in health-welfare technology policy.

M2073.001900 국제보건실습 3-0-6

Global Health Field Practicum

본 과목은 학생들에게 수업을 통해 배운 국제보건 관련 지식을 국내외 현장에서 실제 국제보건 문제점들을 해결하기 위해 적용해 보는 기회를 제공하는 실습과목이다. 학생들은 실습을 통해 그간 습득한 연구 및 실무 경험을 확대 적용하며, 국제보건 현장의 문제점들을 파악하고, 현지의 보건 관련 요구도를 이해하며, 현지의 사회문화적 특성을 고려한 문제해결 방법을 스스로 모색하고 기획, 개발해보는 기회를 갖는다.

This course will provide students with an opportunity to apply their academic knowledge and experience in global health to real-world practical public health problems in the global context. Through the practicum, students will expand their research and professional experience to understand health problems, assess health needs, and explore alternative approaches to problem solving, based on their understanding of the sociocultural and economic status of the local populations.

M2073.002000 국제보건연구방법론 3-3-0

Global Health Research Methods

최근 국제보건 분야의 경제적과 문제점들을 해결하는데 있어 다학적관점에서 수행되는 것이 점점 더 중요되고 있다. 국제보건의 영역과 관심 분야가 확대됨에 따라 국제보건 관련 연구의 영역도 복잡화되어 양적연구, 그리고 실무현장에 이르기까지 매우 포괄적이다. 이 과목은 국제보건 분야의 연구에 사용되는 다양한 방법론들을 소개하고 실제 적용사례들을 실제보드로 학생들이 국제보건 관련 연구를 설계하고 수행할 수 있는 능력을 배양할 수 있도록 돕는다. 또한 국제보건 관련 연구를 수행하는데 있어 수반될 수 있는 윤리적 이슈들을 함께 토의하는 기회를 제공한다.

Recently the role of well-designed research is drawing an increasing attention in addressing the challenges and problems in the field of global health. Reflecting the extended scope and interest of the field, research in global health has a corresponding wide spectrum, ranging from qualitative studies to quantitative research to practical implementation research. This course introduces diverse research methods in global health and discusses their applications to real-world examples, with an aim to help students develop their own research design and implementation skills in global health. The course also provides opportunities to explore the important ethical issues surrounding global health research.

M2191.000300 건강연구 질적조사방법 3-3-0

Qualitative Methods in Health Research

건강은 다차원, 다양한 영향요인들 간의 복잡한 상호작용의 과거이다. 이러한 흐름과는 복잡한 상호작용의 과거는 인터넷과 대신전환, 기술발전 등의 사회 변화에 따라 보건의료와 의료분야에 정보통신기술의 활용이 관련 논의와 도입이 활발하다. 이 강의는 인포마틱스와 그 이론적기술에 대한 기초적 이해를 보건학과 관련학문에서 제공하고자 한다. 또한 주요 정보통신기술 툴(tools)을 소개하고 이들의 국내 및 국제 보건 분야에서의 활용과 가장 관련 연구와 실제에 대해 학습하고 토론한다. 보건의료 및 공공복지 분야의 정보통신기술의 역할과 보건복지기술정책 현황과 과제를 논의하고 제시한다.

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M2191.001400 보건의사결정분석 3-3-0

Decision Analysis in Public Health

의사결정분석은 경제학, 수학, 통계학, 심리학, 산업공학 등 여러 학문의 분야를 다루고 있는 다학제적 학문이며, 복잡성을 뛰어난 문제를 해결하기 위해 다양한 전략적 및 전략적 방법론들을 제계적으로 적용한다. 의사결정분석은 다양한 학문의 영역에 응용되어, 보건학 및 국제보건 분야에서는 경제성평가의 방법론적 접근을 이용하여, 최근 개별 국가 및 국제기구에서 보건프로그램이나 보건정책의 성과나 영향을 평가하는데 있어 주요 방법론 중 하나로 활용하고 있는 분야이다. 이 강의는 보건학과 국제보건 분야에 응용될 수 있는 의사결정분석의 주요 개념과 방법론들을 소개한다. 의사결정분석의 기초, 의사결정 수립과정, 의사결정모형 구축, 모형변수 추정, 의사결정모형을 이용한 시뮬레이션기법 및 불확실성 분석 등이 다루되며, 실제 사례 및 최신 학문 동향도 소개한다.

Decision analysis is a multidisciplinary science that draws upon economics, mathematics, statistics, psychology, and engineering, and is defined as a systematic approach to decision making under uncertainty. It has been applied to a wide range of fields, including public health and global health, and is used to support key concepts and methods of decision analysis as applied to public health and global health. Topics to be covered include decision analysis basics, decision structuring, decision modeling, parameter estimation, simulations for health and economic outcome projections, and uncertainty analysis. Real-world application exam-
최근 국제보건의 영역과 관심은 세계화 과정의 결과, 기술의 발전과 보지 및 도발적 감염병 전염병 (emerging infectious diseases)의 신체적 증상으로 인해 급속도로 확대되고 있다. 이 과속은 국제보건관련에 해당하는 기존 강의들로 다루어지는 내용을 넘어, 최신 동향 및 최근의 국제보건정책 사례들을 세미나 형식을 통해 토론하고자 한다. 또한 국제보건 분야에 사용되는 연구방법들을 소개하고 실제 적용 사례들을 살펴봄으로써 학생들이 국제보건 관련 연구를 설계하고 수행할 수 있는 능력을 배양할 수 있도록 돕는다.

Recently the scope and interest of global health are being rapidly extended, affected by the recent consequences of the globalization processes, development of technologies, and the newly emerging infectious diseases, etc. This seminar course aims to deal with advanced topics and recent trends in global health that are not covered in the existing introductory course on global health. The course also introduces and discusses various research methods in global health and their applications to real-world examples, with an aim to help students develop their own research design and implementation skills in global health.

발전과 도발적 감염병 전염병 (emerging infectious diseases)의 신체적 증상으로 인해 급속도로 확대되고 있다. 이 과속은 국제보건관련에 해당하는 기존 강의들로 다루어지는 내용을 넘어, 최신 동향 및 최근의 국제보건정책 사례들을 세미나 형식을 통해 토론하고자 한다. 또한 국제보건 분야에 사용되는 연구방법들을 소개하고 실제 적용 사례들을 살펴봄으로써 학생들이 국제보건 관련 연구를 설계하고 수행할 수 있는 능력을 배양할 수 있도록 돕는다.

Planning and evaluating a global health program in a developing country setting is particularly challenging and requires a broader perspective and a systematic approach considering the specific local conditions. This course aims to review important factors relevant to each of the steps in planning, implementing, monitoring and evaluating a global health program and to provide understanding about the theories and methods of the steps. The course introduces real-world examples of a global health program planning and evaluation and discusses the reasons of success or failure of each example. The course also provides students with an opportunity to experience developing their own global health program design and a monitoring & evaluation plan, considering a country’s sociocultural and economic conditions, health care needs, community participation, and sustainability of the program.
902.53A

Introduction to Radiation Health

This course will provide the basic knowledge of the recognition, prevention, and management of health problems in association with ionizing and non-ionizing radiation in general and occupationally exposed populations. It will introduce scientific principles on a broad spectrum of biological mechanisms and radiation reactions.

901.777A

Analysis of Human Fertility

Low fertility along with aging population has become one of the most apparent social issues in Korea. Even 10 years ago, Korean government paid attention to how to limit fertility. With the rapid decrease of total fertility rate, Korean government now tries to boost fertility to the level even higher than that of 10 years ago. This class reviews Korean government's efforts to reverse the decline of fertility and societal level in response to the aging population. Topics: (1) Epidemiological and pathogenetic characteristics of chronic diseases as the most important causes of death and disability in modern life. The students are expected to develop skills to conduct studies on selected chronic diseases to contribute to prevention at the individual and societal level. Topics: (1) Epidemiological and pathological characteristics of chronic diseases, (2) Research methods in chronic disease epidemiology, (3) Current status of major chronic diseases, (4) Public health strategies for major chronic disease.

902.53B

Epidemiology of Aging

Population aging changes the patterns of diseases and various aspects of health. Epidemiology of aging is the study of the distribution and determinants of health-related states and events arising from the aging process. Specifically, epidemiology of aging investigates the biological and social mechanisms and their interactions that determine the health of aged population, and provides scientific basis of intervention strategies for disease prevention and health promotion in the aged society. Topics of this class includes biological and social perspectives of aging, methods to assess health, function, and their determinants in the elderly, cohort methodology for aging research, and strategies to optimize the socioeconomic determinants of health for aging population.

902.571

Data Processing in Health Research

In this course, students will solve actual problems such as the entering and handling of large-scale data, data manipulation, and application and interpretation of statistical models. Lectures on SAS data and procedural steps such as print, univariate, means, tabulate, reg, anova, glm, and logistic will be given.

902.611

Linear Statistical Analysis

This course aims at helping the students understand the characteristics of chronic diseases as the most important causes of death and disability in modern life. The students are expected to develop skills to conduct studies on selected chronic diseases to contribute to prevention at the individual and societal level. Topics: (1) Epidemiological and pathological characteristics of chronic diseases, (2) Research methods in chronic disease epidemiology, (3) Current status of

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to multiple regressions. Also, the analysis of variance techniques will be covered along with experimental design concepts.

902.621A  
**Nutritional Epidemiology in Public Health**

Nutritional epidemiology is the study of the characteristics of dietary or nutritional determinants of disease frequency and the distribution of nutritional factors in the human population. This course will examine the research methods and applications of nutritional epidemiology: the assessment of nutrition in the population; research on the causal relationship between dietary factors and diseases; the establishment of nutritional policy and programs for disease prevention and treatment. This course will help students get prepared to do research in the field of public health nutrition.

902.650A  
**Public Health Nutrition**

This is the basic course of students in public health nutrition. Since public health nutrition emphasizes the application of nutrition knowledge and research to the improvement of health in the community, the class focuses on the role of nutrition for the maintenance of health and the prevention of disease. The class is designed to provide proficiency in the assessment of nutritional status, nutritional needs, and their causes, the design of appropriate interventions to improve nutritional status of communities, and the evaluation of nutritional programs and policies, and the interpretation and execution of research in this area.

902.652A  
**Nutritional Assessment**

Nutritional Assessment

This course focuses on the methodology for assessing nutritional status of individuals or community. It includes 4 types of measurements, such as anthropometric measurement, dietary assessment, biochemical assessment, and clinical symptoms that are generally using in assessment of nutritional status, and applications with examples in various research and programs. This course is necessary for the students who want to design research or programs related to the nutritional problems in the community.

902.665  
**Topics in Epidemiology and Vaccinology**

This course will cover along with experimental design concepts.

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Multi-disciplinary approach is very important for this area. Student will learn how to perform multi-disciplinary studies form this course.

902.668  **Social Epidemiology**

Social Epidemiology

Social Epidemiology, which analyzes social conditions and characteristics as a main determinant of disease and illness, has increasingly enlarged its revenue as a sub area of contemporary public health. This course helps students understand individual social characteristics, such as sociodemographic and socioeconomic attributes, with special emphasis will be given to the sociological examination of the causal mechanisms between social characteristics and health. Further students will expand their conceptual knowledge on social epidemiology, statistics, genetics and basic genome epidemiology form this course.

902.670A  **Epidemiology of Infectious Diseases**

Epidemiology of Infectious Diseases

Infectious diseases have evolved with human history. In this course, students will learn the ecological and epidemiological characteristics of infectious diseases and scientific research design. Students will be able to assess the current status of infectious diseases and develop the strategies for prevention and control. Main contents: 1) Characteristics of infectious diseases, 2) Epidemiological research methods for infectious diseases, 3) Current status of infectious diseases in Korea, 4) Control of major infectious diseases.

902.671  **Practice of Biostatistics**

Practice of Biostatistics

Biostatistics is a branch of professional statistics that concerns the application of statistical and mathematical methods to problems in biology and health sciences. Students are required to analyze a large scale epidemiology statistics, linear models, survival analysis, and sampling survey. The students is expected to be an independent researcher who can design and perform a study, analyze the data, and interpretate the results. The course covers basic theories of mathematical statistics, linear models, survival analysis, and sampling survey. Students are required to analyze a large scale epidemiology data like National Health and Nutritional Examination Survey (NHANES).

902.673  **Analytic Methods in Family-twin Study**

Analytic Methods in Twin Study

This course is designed for the public health researchers who took the data analysis of public health. The students is expected to be an independent researcher who can design and perform a study, analyze the data, and interpretate the results. The course covers basic theories of mathematical statistics, linear models, survival analysis, and sampling survey. Students are required to analyze a large scale epidemiology data like National Health and Nutritional Examination Survey (NHANES).

902.674  **Personalized Health and Medicine**

Personalized Health and Medicine

Personalized medicine and health promotion is one of the key concepts in future-oriented health strategies. This lecture will cover the basic theories, approaches, technical and socio-ethical issues regarding the personalized health and medicine strategies, mainly through book and journal reviews on topics related to this topic including genetic epidemiology, gene-environmental interaction, obesity, nutrition, physical activity and other lifestyle factors.

902.682A  **Common Complex Disease Epidemiology**

Common Complex Disease Epidemiology

Common complex disease epidemiology is one of the key concepts in future-oriented health strategies. This lecture will cover the basic theories, approaches, technical and socio-ethical issues regarding the personalized health and medicine strategies, mainly through book and journal reviews on topics related to this topic including genetic epidemiology, gene-environmental interaction, obesity, nutrition, physical activity and other lifestyle factors.
Environmental studies of public health will be discussed. Statistical aspects in the policy-related, epidemiological, and environmental studies of health issues will be covered on those selected common complex diseases.

Key features of the newly developing research methodologies. To complement the traditional course, this seminar is given over 2 semesters, aimed to provide students with up-to-date perspectives of diverse new trends. In the second semester, ‘New results’ part, students will discuss important new results from the recent studies on diverse topics, with particular attention to the applications of new methodologies.

Statistics for global health and population

This course is to teach students core concepts and principles of biostatistics and public health demography through examples from global health and population. This course will be offered in English language especially for international students, and arranged to complement the required course ‘Introduction to Biostatistics’ given in Korean language. Class contents will cover: 1) Descriptive statistics and statistical distributions, 2) Statistical hypothesis testing, 3) Public health demography.

Global Health Epidemiology

This course is offered in English language for international students or other students interested in global health. The contents of this course will be arranged for international students to complement the required course ‘Principles of Epidemiology’ given in Korean language. Examples of global health issues will include regional or global infectious diseases, non-communicable diseases and their risk factors, and health issues related to climate change. Class contents will cover: 1) Role of epidemiology in global health, 2) Descriptive epidemiological methods, 3) Research methods to study health determinants. Epidemiology is a research field which provides basic principles and methods of health and medical science, connecting etiology of disease to effective management. As the health problems and their causes are getting more and more globalized, the necessity of a new perspective and approach to respond the global health problems is increasing. In this subject, students will learn basic principles and methods to assess global health problems, to prioritize the health issues. Lectures will cover a range of health issues with practical data and examples.
Understanding mHealth

MHealth has grown rapidly worldwide. In less developed regions, mobile phones (mostly feature phones) have been applied to various types of public health programs including community-based public health, maternal and child health, family planning, and the creation of medical records. In more developed regions, smart phones and their connected wearable devices have been applied to various individual and institutional health promotion programs and health care systems. It is expected that MHealth market will dramatically increase in near future. This course is to help students better understand MHealth in the context of public health. This course will include such topics as what MHealth is, on what theoretical or philosophical basis MHealth has been developed, what mobile technologies have been applied, what Mhealth programs have actually been implemented, how Mhealth has been evaluated, and to which direction and how Mhealth will be developed in near future.

M2073.000100 역학실습세미나 1: 사례연구 1-1-0
Seminar on Practice of Epidemiology 1: Case Studies

M2073.000200 역학실습세미나 2: 적용 1-1-0
Seminar on Practice of Epidemiology 2: Application

M2073.000400 통계실습세미나 2: 적용 1-1-0
Seminar on Practice of Biostatistics 2: Application

M2073.000600 고급보건통계이론 3-3-0
Advanced Theory for Health Statistics

Epidemiology is a practical discipline that provides the methodology to solve real-life problems based on scientific evidence. This is the first of 2-part courses aiming at strengthening problem-solving competency of students, including their capacity to teach epidemiologic principles to field workers. In this course, students will work in groups to tackle currently on-going cases of public health problems and to develop solution strategies.
Bioinformatics is a discipline for solving biological problems by utilizing a variety of theories, such as mathematics, statistics, and computing technologies. This course is for students who have taken “Understanding Bioinformatics” as prerequisite. Based on the understanding of the preceding courses, we will study how Bioinformatics approaches can be applied to public health issues by examining the latest research trends.

M2073.00700 Genomic Epidemiology2

Genomic Epidemiology2

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M2073.000800 Understanding Bioinformatics

Understanding Bioinformatics

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M2073.000900 Application of Bioinformatics

Application of Bioinformatics

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reviews and invited lectures, we will discuss what are new data sources, approaches and methods involving ICT and big data, with particular emphasis on new insight and outcomes from the new approaches.

M2073.001300
ICT 기술기반 지역사회 건강증진 및 실습 3-1-4
ICT-based community health promotion and practice

ICT 기술은 스마트폰과 각종 wearable/portable 기기, 웹과 모바일을 아우르는 다양한 접근으로 건강관리와 건강증진의 새로운 영역으로 자리잡아 가고 있다. 본 과목에서는 지역사회 건강증진의 일반적인 원칙과 단계들을 숙지한 후에 (예: 지역사회 건강진단, 건강증진의 목표설정, 접근의 일반적인 원칙 등등), 이러한 ICT 기술을 지역사회 건강증진의 원리에 실제로 활용하는 실습을 진행한다. 공통적인 이론부전에서는 실습조별로, 실습지역과 방법, 실습결과의 평가 등을 결정하여 배정된 담당 지도교수와의 상의하여 실습을 진행한다.

Information and communication technologies (ICTs) are rapidly incorporated in health and health promotion area. Smart App, wearable/portable devices, and social media combining web portals and mobile apps are typical examples with which many people manages their health. In this academic and practical courses, students will learn the standard theories and approaches of community-based health and health promotion (e.g., community health diagnosis, setting health promotion goals, general principles in the community health, etc.), and will practice applying ICT technologies. The practical course will be done as a group practice, with mentorship. Each group will decide the goal and approach of the ICT-based health practice.

M2073.001400
지역사회보건 서비스 디자인 및 실습 3-2-2
community health service design and practice

서비스 디자인은 이용자 경험을 바탕으로 비즈니스 기회 및 기술의 접목 가능성을 찾아 균형 있게 적용하는 인간중심적 접근방법이다. 건강서비스, 특히 지역사회 건강서비스에서 일반적으로 서비스 제공자의 관점에서 제시되어 온 건강서비스를 서비스 이용자의 관점에서 재구성하는 것이 본 과목의 핵심 목표이다. 이는 지역사회 건강서비스의 제공자와 이용자의 관점에서 제공하는 것이 본 과목의 핵심 목표이다. 즉, 건강서비스 "이용자 경험"을 중심으로 서비스 제공자를 포함한 모든 이해관계자의 요구를 균형 있게 반영하여 서비스를 재구성하기 위한 새로운 원리이며 방법론적 들이다. 서비스 디자인에서는 디자이너들과의 사고 방법인 '디자이너 사고(Design Thinking)'를 적용하여 무형의 개념을 시각화하고, 구체화된 결과물로 끌어낸다. 이를 바탕으로 지역사회 건강서비스 이용자 경험을 향상 시킬 수 있는 방안을 다각적으로 탐색하여 구체적인 해결책을 도출한다. 그 외, 그룹 토론과 실습을 통해 협업이 가능하며 각 그룹별로 지역사회보건과 관련한 주제를 선정하여 한 학기 동안 프로젝트를 진행하고 이용자 경험 증진의 방안을 제시하게 된다.

"Service design" is a human-centered approach where a service is planned based on user experience. It aims at improving service user experience by balancing with business viability and technical feasibility. In health field, health service has been frequently practiced based on its providers' needs rather than service users'. In this course, students are asked to be designers employing "Design Thinking", which is how designers develop a conceptual idea to a tangible solution, rather than passive observers of health services. Students will be required to conduct group practices and field works, mainly interviews and observations, in order to empathize with users’ experience and to understand their needs as well as stake holders’ and organization’s needs. They will discuss to produce solutions for health service by using visualization tools which make them efficiently communicate to each other. After choosing specific topics and exploring them, students will suggest new solutions for community health services.

M2073.001500
사용기간학생 및 실습 3-2-2
Spatiotemporal Epidemiology in Practice

시간과 장소는 사람과 함께 역학의 3요소이지만 상대적으로 덜 주목받아왔다. 2000년부터 2010년까지 주요 역학자들 7년 동안 실천 논문 중 공간 요소를 제대로 분석한 논문은 약 1%에 지나지 않았다. 최근 지역정보시스템(GIS)의 발전과 소리의 영역정보 제공에 따라 관련 역학 연구가 늘어나 있다. 본 과목에서는 QGIS 및 R와 같은 소프트웨어를 이용해 건강행동과 접점의 분포를 시각화하고, 시간공간관련을 고려한 군집분석과 회귀분석을 수행하며, 지역사회개입의 효과를 평가해보고자 한다.

Time and place are the three elements of epidemiology together with humans, but they have been relatively less noticeable. Among the papers published in seven major epidemiological journals from 2000 to 2010, only about 1% of the papers correctly analyzed spatial factors. Recently, the development of geographic information systems (GIS) and the provision of small-area health information have increased the number of related epidemiological studies. In this course, we will use open source software such as QGIS and R to visualize the distribution of health behaviors and diseases, perform cluster analysis and regression analysis considering space-time correlation, and evaluate the effects of community intervention.

M2073.001600
손상역학 3-2-2
Injury Epidemiology

우리나라 사망원인 중 45세 미만의 연령층에서는 의도적 및 비의도적 손상이 가장 많은 사망원인이고, 특히 15세 미만에서는 22.7%를 차지하고 있지만, 역학적으로 많은 연구가 수행되어 있지 않다. 과거에는 손상생리학, 손상증후, 손상감시체계를 이해하고, 손상역학 연구 설계와 데이터 분석을 국민건강영양조사 자료와 국가응급환자진료정보망 자료, 그리고 병원기반 손상조사체계 자료와 같은 실제 데이터를 이용해 실증적 증거를 산출하며 비교해보고자 한다.

Among the causes of death in Korea, intentional and unintentional injuries are the most common cause of death in the under-45 age group, especially 22.7% of those under 15 years of age. In this course, we will understand the damage sources, damage severity and damage monitoring system, and use the damage epidemiology study design and data analysis as empirical data using actual data such as National Health and Nutrition Survey Data, National Emergency Department Information System Data to compare the evidence.
### Forensic Epidemiology

 최근 국민건강보험공단 담배소송과 가습기살균제폐렴소송 등 역학적 증거가 법률적 맥락에서 활용되는 사례가 증가하고 있다. 본 과목에서는 인과성을 위한 기본 과학적 접근을 바탕으로 실제 사례에서 역학적 인과성과 법률적 인과성을 비교 평가해보고자 한다. 이를 위해 과학적 전공자, 법률 전공자와 공동으로 강의를 기획 구성하고, 보건학, 행정학 이외에 과학사 및 과학철학 전공과 변호사 전공 행정학에 공개하기로 한다.

In recent years, there has been an increase in the use of epidemiological evidence in the legal context of the National Health Insurance Corporation tobacco lawsuits, humidifier disinfectant pneumonia lawsuits, and so on. In this course, we try to compare the epidemiologic causation with the legal causation in actual cases based on the philosophical perspectives of science. To this end, we plan to organize a lecture in cooperation with a major in philosophy of science, and law students.

### Reading the Classics of Epidemiology

 눈부시게 발전하는 최신 역학 이론과 실제에 널리되어 역학적 사고의 진화 과정과 역사를 잊게 되는 경우가 많다. 본 과목에서는 역학의 발전 과정에서 중요한 전환이 됐던 고전 논문을 함께 읽고 역사적 의미를 현대적 맥락에 맞게 재구성하는 시도를 수행해보고자 한다.

It is often buried in the latest dynamical theory and practice that develops brilliantly, leading to the forgetfulness of the evolutionary process and history of epidemiologic thinking. In this course, we will try to read the classical papers that have become an important transition in the development of epidemiology, and try to reconstruct historical meaning to the contemporary context.

### Epidemiologic Research with R and Python

 이 과목은 역학적 핵심 개념과 원리를 R과 Python 소프트웨어를 이용한 공공빅데이터 자료분석 예제를 통하여 교육하고자 한다. 수업 내용은 1)간단한 상태와 사건의 분포 기술, 2)간단한 총계 요인의 분석, 3)역학적 연구결과의 종합적 적용 등의 영역을 포함한다. 조별 연구를 진행하며, 국제학술지 논문작성 연습을 목표로 한다.

This course is to teach students core concepts and principles of epidemiology through exemplary analysis of open big data using R and Python softwares. Class contents will cover: 1)Description of health-related states and events, 2)Analysis of health determinants, 3)Synthesis and application of epidemiological study results. Team research will be conducted to practice writing for an international journal.

### Research Techniques for Demography

 본 강좌는 출산력과 사망력 혹은 인구 성장과 구조 등 기초적 인구분석에 널리 사용되는 방법론을 소개한다. 인구 분석을 위한 인구학적 방법과 통계적 분석 기법은 사회학, 경제학, 역학, 보건학 등 다양한 학문분야에 적용되어 왔다. 본 강좌에서 주요 논의할 주제는 인구학적 방법론에서 생명표의 작성 및 해석, 인구 추계법, 출산 및 사망력 측정 등이 포함되며, 통계적인 분석 기법으로 다수정 분석, 성장 커브 분석 등이 포함된다. 본 강좌는 인구 및 통계 방법론의 수학적인 검증이나 증명을 이룬다는, 인구 및 보건학 연구에서 실제 사용되는 데이터를 이용한 분석과 해석을 통해 학생들이 인구학에서 사용하는 방법론을 쉽게 이해하고 본인들의 연구에 직접 사용할 수 있도록 설계되어 있다.

This course provides groundings in the principal techniques of demographic analysis together with an understanding of how mortality and fertility determine the growth and structure of human populations. Demographic methods and techniques as well as population dynamics are widely applied in sociology, economics, epidemiology, and public health--in almost every field where the growth and structure of population matters. Students will learn how to calculate demographic rates, construct a life table, and make population projections. Special emphasis will be given to the application of demographic methods in real-world demographic and public health research situations.

### Understanding Demography

 본 강좌는 어떻게 인간 집단이 다양한 사회적 현상 혹은 문화들과 연관되는지 그 과정을 기술하고 설명하는 것에 목표로 한다. 중심적으로 다루어지는 내용은 주요 인구학적 측면인 출생, 인구이동, 사망, 그리고 도시생활에 관한 인구학 이론을 탐구하고 이들이 지니는 사회적 의미를 다양한 역사 및 국가들 간의 비교를 통해 고찰하는 것이다.

This course introduces students to the demographic perspectives on how individuals are related with various social phenomena and the culture of our society. Main discussions will be focused on the following four topical areas: fertility, migration, mortality and urban ecology. Further, this course discusses various demographic theories and examines social implication of four demographic elements through historical and comparative perspectives.

### Advanced Computational Programming for Public Health Data Analysis

 보건데이터 정리부터 통계 분석까지 보건데이터의 처리는 상당한 수준의 프로그래밍을 필요로 한다. 이 수업에서는 보건데이터의 자료 처리에 필요한 R과 SAS의 프로그래밍 기법에 대하여 강의할 것이다. SAS를 활용한 데이터 다루기, SQL, 매크로 프로그래밍, R을 활용하여 함수 만들기, object 프로그래밍 등에 대하여 설명할 것이다. 다양한 데이터를 처리하는 방법을 학습하고 연습함으로써 보건통계자료 분석의 기본 프로그래밍을 배울 수 있는 기회가 될 것이다.

Data analysis for public health-related researches requires programming skill for data management and statistical analysis. In this lecture, students will learn how to program
환경보건과학(Department of Environmental Health)

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Environmental Microbiology and Laboratory

이 과목을 통해 환경 매체에 존재하는 바이러스, 세균, 균, 원핵생물 등의 다양한 미생물의 생태학, 분자 유전학, 환경과학 등은 환경보건학적 관점으로 이해하고 연구하는 방법을 습득한다. 각 세부의 과제는 대기, 수질, 토양, 식품 등의 환경매체에 존재하는 각종 미생물을 보건학적 중요성을 이해하고, 이들 미생물의 환경매체에 존재하는 주요 원인, 농도, 환경매체의 저항성, 이동방식, 병원성의 전염경로, 보건학적 중요성을 이해한다. 또한 병원성 미생물의 환경보건학적 연구에 있어 대비한 다양한 미생물의 수질, 공기, 식품 등의 암호성 방법과 배양, 분자생물학적, 생리학적, 면역학적 등의 분석 방법, 그리고 플라스마화학적 조절 방식 등을 이해하고 기초적인 미생물유해평가방법을 습득한다. 이 과목을 수강하려는 학생들은 일반 생물학의 기초적인 이해가 되기를 권고한다.

This course covers all aspects of environmental health microbiology fields including microbial ecology, molecular genetics, and environmental science. This course will provide students with an understanding of different microbiological organisms such as virus, bacteria, fungi, and parasite present in air, water, soil, and food in public health perspectives. This course will cover the source, concentration, fate and transport, and routes of exposure of these microorganisms. The other areas of emphasis are (1) general microbiology (2) sampling methods for microorganisms in air, water, and food etc (3) cellular, molecular, and immunological methods for analyzing microorganisms in environment (4) the impact of microbial activities in the environment on human health, and (5) chemical and physical control measures of pathogens (6) basic microbial risk assessment. Knowledge on general biology is recommended to take this course.

Introduction to Air Pollution

대기오염의 역사적 변천과정과 정의, 지역 및 범세계적 영향, 오염물과 그 배출원, 그리고 그 오염원으로 인한 가스, 인간, 동식물, 재산 등에 대한 피해, 오염물의 제거 및 감축기술, 오염물의 법적 및 경제적 관리방법과 UN기구의 범세계적인 대처방안 등을 고찰한다. 특히 최근 우리나라에서 문제점으로 대두되고 있는 자동차 배기가스의 관리방법, 화학학습도, 배출가스의 배출 및 치명도가 증가함에 따라 학습한다. 학기 중 2회 현장실습을 하여 우리나라 대기오염의 정도와 문제점을 제의하며 대처방안을 모색할 수 있는 능력을 기르도록 한다.

This course will examine the source, components and measurement of air pollutants. It will monitor the effects of air pollution on human health, plants, animals, materials, visibility and meteorology. Other topics include air pollution, forecasting, the control equipment of pollutants, laws and regulations.

Water Pollution Management

이 과목에서는 기본적으로 이용되고 있는 화학이나, 생물학의 기초 이론들을 습득하여 수질오염물질이 수체 환경에서 어떤 기호의 형태를 띠는지를 습득한다. 이 이론들은 도태로 수질 분야에 특히, 정수 및 판매 분야, 습지처리, 그리고 수질관리, 물의 세척 및 판매 분야에서 어떻게 적용되고 있는지를 알아본다.

This class provides comprehensive coverage of the fundamental principles such as chemistry and biology in water, and current practices in water and wastewater treatment, sludge treatment, advanced wastewater treatment, and water reuse. The objective is to transfer knowledge of these subjects to students interested in continuing their study in water and wastewater fields.

Industrial Toxicology

<산업독성학>에서는 산업장 및 환경에서 노출되는 건강상해를 입히는 유해화학물질들과 물리적 요인들 중 중심으로 독성의 작용기전 및 건강영향에 대한 체계적인 검토를 하도록 한다. 이를 위하여 일반적인 독성물질에 대한 신체 손상 및 치료에 대한 논의와 함께 독성물질의 측정 및 그 노출현황을 알아보도록 한다. 독성과 환경오염물질에 대한 독성자료를 조사하여 특정 화학물질의 독성과 환경오염물질에 대한 분석을 통해, 특정 화학물질에 대한 건강영향을 알아보도록 한다. 독성물질에 대해 적절한 대처방안을 제시하여, 특정 화학물질에 대한 건강영향을 알아보도록 한다. 독성물질에 대해 적절한 대처방안을 제시하여, 특정 화학물질에 대한 건강영향을 알아보도록 한다.
tribution, and metabolism of toxic chemicals as well as their exposures in the environment will be covered. Students will be required to summarize and to present information on toxic chemicals of their choice.

903.535 산업의학개론 2-2-0
Introduction to Occupational Medicine

본 과목은 의사, 간호사 등과 같이 산업장에서 근로자를 직접 대하면서 그들의 건강을 관리하기 위한 위치에서 근무하는 전문가들을 위한 강좌이다. 전문인들은 직업보건에 관심을 갖고 있는 학생들에게 필수적인 과목이다.

기초 과목을 제공하면서 몇몇 분야에 대해서는 심도 있게 이슈를 다룬다. 또한 컴퓨터 프로그램을 이용한 설계방법도 제시한다. 전문가적인 지식을 갖추게 한다.

903.549 산업환기 3-3-0
Industrial Ventilation

유해작업환경 개선책으로 가장 중요한 방법은 공학적 개선이 다. 여기에는 공기환경을 개선하기 위해 직업환경개선, 노출경로에 따른 노출 평가 방법, 관리방법이 내용의 주를 이룬다. 이 과목은 보건대학원 환경보건학과 학생들에게 현재 다양한 형태로 이뤄져 있다. 대한 에어로졸은 가장, 기후 및 우리의 건강과 생명의사에 영향을 미친다. 이 과목은 이러한 에어로졸의 특성, 산업, 발생방법, 대기환경, 방사선 방호, 기타 환경과학 분야에 종사하면서 공기 중 입자상 물질을 측정하거나 연구, 해석하는 사람에게 기초적인 지식을 제공하고자 한다.

903.550B 산업위생학 3-3-0
Industrial Hygiene

작업장 또는 지역사회에서 다양한 유해인자(화학적·물리적·생물학적·인간공학적)를 인식, 평가, 관리하는 과학적 지식을 다룬다. 이를 위해 유해인자를 관리하기 위한 작업환경개선, 노출경로에 따른 노출 평가 방법, 관리방법이 내용의 주를 이룬다. 이 강의는 전개의 첫째 세부분으로, 유해인자의 인식, 평가, 개선으로 왔다. 다른 산업환경관련 과목의 기초과목으로 전공자나 산업보건에 관심을 갖고 있는 학생들에게 필수적인 과목이다. 이 과목의 목적은 학생들에게 작업 및 환경 환경의 넓은 영역에 대한 기본 훈련을 제공하면서 몇몇 분야에 대해서는 심도 있게 이슈를 다루어 전문가적인 지식을 갖추게 한다. 이 강의를 수강하면서 학생들은 유해인자로부터 근로자를 보호하기 위한 최선의 동향과 아울러 창의적인 사고를 할 수 있다. 이 과목은 수강학생들은 직업 및 환경보건문제에 대한 전문가가 될수록, 근로자 및 화학 관리자와 문제를 해결하기 위한 상호작용을 할 수 있어야 하고, 관련 논문을 전문적 시각에서 읽고, 평가할 수 있어야 하며, 기본적인 작업장 평가 리포트를 스스로 작성할 수 있어야 한다. 이 강의는 앞으로 산업보건 또는 환경보건의 고급과정을 수강하기 위한 기초 과목이다.

The purpose of this course is to acquire knowledges about a variety of disciplines of occupational (including environmental hygiene), while covering certain issues in some depth. This course will require and challenge you to think creatively for yourself about current issues in OH field and about means to prevent hazardous exposures from the general environment as well as workplace. After completion of this course, you should be able to: find out what could be hazardous agents in a given workplace, prioritize the agents to evaluate and control, effectively interact with professional hygienists to help solve OH problems, to critically evaluate the scientific literature and professional hygiene reports, and develop your ability to communicate and work in teams acquire prerequisite knowledges to pursue hygiene studies at a more advanced level.

903.555A 에어로졸오염관리개론 3-3-0
Introduction to Aerosol Science and Technology

공기중에 존재하는 입자상 물질은 먼지, 미스트, 스모그, 안개 등 여러 가지 다른 형태로 이루어져 있다. 이러한 에어로졸은 작업장, 기후 및 우리의 건강과 생명의사에 영향을 미친다. 이 과목은 이러한 에어로졸의 특성, 산업, 발생방법을 강의하며 산업위생, 대기환경, 방사선 방호, 기타 환경과학 분야에 종사하면서 공기 중 입자상 물질을 측정하거나 연구, 해석하는 사람에게 기초적인 지식을 제공하고자 한다.

Airborne particles are present throughout our environment. They came in many different forms, such as dusts, mists, smoke, or fog. These aerosols affect visibility, climate, and our health and quality of life. This course covers the properties, behavior, and measurement of aerosol to serve as an introduction for people engaged in industrial hygiene, air pollution control, radiation protection, or environmental science who must measure, evaluate, or control airborne particles.

903.556B 환경보건특강 및 세미나 3-3-0
Topics in Environmental Health

이 과목에서는 보건대학원 환경보건학과 학생들에게 현재 다양한 환경보건 분야의 최근 이론과 동향을 논의하고 이들과 연관되어 현재의 국내외의 환경보건 분야의 중요한 이슈들을 세미나식으로 진행하고 토론한다. 강의는 특강, 연사들의 발표와 수강생들의 세미나 발표와 보고서 발표로 이루어진다. 수강생들은 이 과목의 주요 내용과 관련된 조언이 이루어 강사와의 협의에 관심주제를 결정하고 준비하고 Seminar 발표와 보고서를 준비하여 발표한다.

This course will be composed of lectures given by visiting speakers and seminars and discussions by the students. Visiting speakers will provide recent research activities in environmental health field. Students will make a group and provide a review of recent research and development in the field of environmental health. In the latter half of the semester, students will prepare reports and give presentation of the results in a group of 2-3 students.
Environmental health risk assessment provides a measure to predict and manage health consequences of exposure to hazardous substances. The importance and utility of the environmental health risk assessment are growing especially in public health area. Environmental risk assessment (ERA) consists of data collection and evaluation, exposure assessment, toxicity assessment, and risk characterization. Risk assessments are site-specific and therefore may vary in both detail and the extent to which qualitative and quantitative analyses are used. In this coursework, students will gain an understanding related to organizing and analyzing data, developing exposure and risk calculations, and preparing risk assessment reports. Both human health and ecological risk assessment will be discussed. Case studies will be introduced to help student better understand applications of risk assessment in real setting. In addition, students will learn an approach of integrating human health and ecological risk assessment procedures.
Exposure assessment is described as evaluation of exposure. Occupational and general environments contain numerous substances that are potentially hazardous to the health of the workforce, other occupants and the public. The role of the occupational and environmental health professionals is to identify these potential hazards, evaluate the risk they pose to persons, property and equipment and to recommend control measures which can manage the risks involved. Throughout the course students will be provided with a variety of skills that should enable them to identify and predict hazards in environment. Focus of this course will be the presence and/or formation of toxic substances in environmental media, their movement within and between contaminated media, and the contacts of human populations with those media.

**903.570 환경보건학을 위한 독물 동력학 3-3-0**

**Toxicokinetics in Environmental Health**

Toxicokinetics (TK) refers to the study of the kinetics of xenobiotics, referring to mathematical description of the time course of ADME (absorption, distribution, metabolism and excretion) of xenobiotics in the whole organism. Understanding ADME of toxic substances is increasingly important in risk assessment specifically for dose-response relationship. This course introduces how to 1) estimate disposition of toxic substances over time course; 2) make profiles of the parent compounds and their metabolites; 3) predict the intake and dose in the organisms; 4) estimate the kinetic parameters utilizing both classical kinetic modeling and physiologically-based pharmacokinetic model. (3-3-0 for master and doctoral students)

**903.573 바이오모니터링 개론 3-3-0**

**Introduction to Biomonitoring**

Biomonitoring addresses dose, mode of action, and disease etiology of toxic substances conceptually. Since each connection between box of exposure-disease continuum represents genetic susceptibility, inter-individual difference of the responses is one of the key issues in the biological monitoring. In this course, students will be provided with comprehensive knowledge for biomonitoring and susceptibility researches though organized lectures, statistical analysis using real data sets and recently published research papers. Each student should prepare a virtual research proposal by ppt-presentation and regular format of proposal, and is exposed to how to construct study-design and methodology in the real world of biomonitoring. (3-3-0 for master/doctoral student)

**903.574 보건대기미생물학 개론 3-3-0**

**Aerobiology and Public Health**

Aerobiology is an interdisciplinary area of physical and biological research, and important from environmental and public health aspects. For example, some biological agents are known to be human allergens and pathogens while others are thought to be associated with global climate through their activities as ice and cloud condensation nuclei. This course introduces basic physical and biological properties of bioaerosols and their implications of environmental health problems. The topics include environmental and human health impacts, indoor and atmospheric behaviors, sampling and analytical methods, and control strategies of bioaerosols.
Physics for Environmental Health Sciences

Physics is fundamental for all areas of natural sciences. Indeed, physics provides deep insights into underlying mechanisms of environmental health problems. For instance, physical agents such as noise and radiation are important for human health, and therefore basic physical knowledge is essential from the aspect of their public health impacts. Fundamental mechanisms of global climate change can also be understood by basic knowledge of thermodynamics. This course introduces physical aspects of environmental health problems. The topics include classical mechanics, fluid dynamics, thermodynamics, and electromagnetics that are associated with environmental health problems.

Advanced Studies on Microbial Genomics

This course is for understanding current status of microbial genomics and its related research tools. The importance of microbiota has been recognized as critical factor for human health and natural ecology. During this course, there will be lecture, in-class discussion, and paper presentation to help the students understand the scientific importance of microbiota and learn the tools for performing related research.

Sustainable Health and Environment With Global Perspectives

Sustainable Health and Environment With Global Perspectives is designed for students who like to learn about the field of sustainable health and environment from an East Asian perspective. Students will learn facts and developments in issues related to sustainable health and environment through cross-country lectures, multimedia viewing, panel discussing, and group projects and presentations. The sciences of sustainable health and environment cover broad and intersected disciplines from health sciences, physical sciences to social sciences locally, regionally, and globally. Students’ views of sustainable health and environment will be cultivated from current and historical perspectives as well as local and regional living experience. Global perspectives of students will be further cultivated through in-class discussion among students, group projects by cross-country teams.

Statistical analysis for environmental health data

Statistical analysis for environmental health data is designed for students who like to learn about the field of sustainable health and environment from an East Asian perspective. Students will learn facts and developments in issues related to sustainable health and environment through cross-country lectures, multimedia viewing, panel discussing, and group projects and presentations. The sciences of sustainable health and environment cover broad and intersected disciplines from health sciences, physical sciences to social sciences locally, regionally, and globally. Students’ views of sustainable health and environment will be cultivated from current and historical perspectives as well as local and regional living experience. Global perspectives of students will be further cultivated through in-class discussion among students, group projects by cross-country teams.
능력의 증진에 목적이 두고 있다. 학생들은 다양한 선행통계 분석 기법과 원리를 실전에서 적용하는 방법론을 배우고 실제 데이터와 통계 패키지를 활용하여 수업 중 실습한다. 강의 후반에는 반복측정 자료분석을 통한 위험평가(risk assessment)의 기법도 배운다.

Statistical principles and methods are required to describe and interpret environmental measurements in environmental or human samples. This course was designed for students to promote to make study design and statistical analyses using generalized linear models and other modern statistical methodology for their researches on health risk assessment.

M2191.001200 바이오모니터링과 인체노출평가 3-3-0
Human exposure assessment using biomonitoring

다양한 환경오염물질에 노출되어 건강영향을 야기하려면 체내흡수가 이루어져야한다. 환경에제품물질의 함량과 접촉을 조사하는 노출모델(exposure model)과 약동력학(pharmacokinetics)을 이용한 노출량 추적 및 노출시설량평가, 인구집단 바이오모니터링연구 기획 및 분석절차와 자료 해석을 제대로 수행하기 위해 인체노출평가는 생체지표(biomarker)를 측정하여 노출과 건강영향을 연결하고 이해하는데 필요한 원리를 체계적으로 학습할 수 있도록 기획되었다. 산업보건학과 환경보건학분야에서 축적된 경험과 지식을 학문적 원리로 정리하고 관련 분야의 새로운 연구기술을 소개함으로써 학생들의 연구수행에 도움을 주고자 한다.

New waves of significant findings and novel experimental technologies have been emerged in molecular biology, medicine, environmental sciences and toxicology since the completion of a human genome project. Thus, students need to understand the comprehensive knowledge on the mode of actions of toxic substances and genetic/environmental factors as well as new laboratory technologies for their researches. To achieve these goals, this course provides material covering molecular mechanisms of toxicants' action in target organs and current experimental approaches in environmental sciences and toxicology.

M2191.000800 환경화학물질과 건강 1-1-0
Environmental Chemicals and Human Health

환경화학물질의 종류가 다양해지고 생산도 증가추세에 있다. 이런 화학물질은 환경에 전초하면서 인체에 영향을 미칠 수 있다. 이 과목은 환경 내 화학물질이 인체에 미치는 영향, 노출평가 방법, 인체건강의 평가 방법, 위험성평가 방법에 대한 강의를 진행하여 화학물질의 건강영향에 대한 이해를 높이고자 한다. 또한 과목은 홍카이도 대학과 공동으로 진행할 예정이며 환경보건학을 전공하고자 하는 학생들에게 국제적 지식과 전망을 제시한다.

There are a growing of evidence demonstrating that environmental chemicals production have been rapidly increasing in recent decades. There are a wide variety of chemicals including non-regulated materials have been released into environment and consequently humans are exposed to these chemicals. These chemicals are globally distributed in environment, wild life, and human bodies. In this course, we focus on hazard of human exposure to environmental chemicals, methods of exposure assessment, evaluation of the effects of these chemicals on human health, and approaches to health risk assessment, management and prevention.

보건대학원(Graduate School of Public Health) ∴보건학과(Dept. of Public Health)

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분산과정(Doctoral Courses)  
공통과목(Core Course)  
901.742 보건학특론  3-3-0

Advanced Studies in Public Health Sciences

보건학의 기본적인 철학을 정립하고 우리나라에 필요한 보건학의 발전방향을 설정하여 미래를 전망한다. 또한 보건학의 각 전공별 분야에서 활용되는 방법론적 접근은 공통화하고 종합함으로써 각 연구방법의 공통적 원칙과 차이점을 연구한다.

This course is offered to all doctoral candidates as a core course. Special emphasis is given to the interrelationships of administrative and organizational aspects to selected public health services topics through in-depth study on various aspects of health services.

보건학전공(Division of Public Health)  
901.745 범주형자료분석  3-3-0

Categorical Data Analysis

보건학적인 자료 중에서 많은 것이 이산수이다. 따라서 보건학 연구기법을 바탕하려면 이산변수의 분석방법을 이해하기 어렵다고 하는 효율적으로 자료분석할 수 없다. Chi-square 방법은 이러한 자료를 분석하는 가장 기초적인 방법인데, 이에서 황선을 다 보고 다변량으로 이산변수가 나타나는 경우에 분석방법을 다룬다. 따라서 자료의 상관성 문제가, 대수선형분석방법 등을 다룬다.

Discrete data is common in public health research. Therefore, knowledge of statistical techniques regarding discrete data is very important. Chi-square test is fundamental for discrete data analysis. Also, logistic regression and log-linear model and other techniques will be covered in this course.

M2073.001000 유전자역학 1  3-3-0

Genome Epidemiology 1

유전자 역학 1은 질병-건강상관 중에서 특히 다변량 복합질환 (common complex diseases)에 대한 유전적 요인의 규명을 중심으로, 보다 정밀한 환경요인의 역할을 평가하고, 질병발생의 위험 요인으로 작용하는 유전자율 규명하여, 나아가, 유전적 감수성이 있는 사람에서 특히 문제가 되는 생활습관 / 환경요인의 영향을 평가하고 개인의 특성에 맞는 조절방향을 규명하는 역학의 분야이다. 이 강좌에서는 유전체학, 역학 및 통계학에 대한 기본적인 이론을 가진 학생들에게 유전체역학의 기본개념을 이해하고, 동시에 이의 적용방법을 위한 다양한 사례들을 다루고자 한다.

This course will cover basic concepts of genome biology, statistical genetics, and principles of personalized health promotion, particularly focused on common complex diseases. Many practical concepts will be taught by lecture, appropriate visual materials and group discussion. This course is intended for the graduate students who would like to understand what genome era can contribute to future health and health systems

901.774 인구학세미나  3-3-0

Seminar in the Study of Human Population

본 강좌는 보건대학원 내에서 인구학을 세부전공으로 하고 있는 박사과정 학생들을 위해 개설되었다. 하지만 인구학적 지식과 접근법에 대한 이해의 훈련을 바탕으로 하는 박사과정 학생들의 수강도 가능하다. 최근 한국사회의 가장 중요한 사회적 이슈의 해를 가진 학생들에게 유전체역학의 기본개념을 이해하고, 다양한 생활습관으로 인한 문제에 대해 생각할 수 있는 방법론적 기본을 이해하는 것을 목표로 한다.

This course is open to PhD students whose major area of study is health demography. However, any PhD students who have interest in population issues and who hope to expand their knowledge on demography may welcome to take this course. Everyday, we face with numerous demographic phenomena in our daily lives, such as the lowest low level of fertility, dramatic increase of life expectancy due to medical and/or biological innovation, notable residential clustering by socioeconomic status, etc. This course chooses one contemporary population-related issue and review a number of related literatures to understand their conceptual or theoretical apparatus in great detail. Further, there will be substantial discussion on the causes and consequences of that population issue within the context of Korean society.

901.778A 진화, 인구집단 유전학과 건강 3-3-0

Population Genetics

이론은 소수의 조상으로부터 비교적 짧은 시간인 십만년 ~ 수십만년의 시간 사이에 현재와 같은 대규모의 인구집단으로 진화해 왔다고 믿어진다. 즉 인간의 다양한 건강-병종성향과 인간집단의 유전자적 차이는 단지 개인적인 관점에서만이 아니라, 인구집단과 진화과정이라는 차원에서 해석할 때 정확한 해석이 가능한 경우가 많다. 

Human being is thought to have evolved from not big founders to current huge population during one hundred to several hundred thousand years, which is relatively short duration. Many health-diseases phenomena can be properly interpreted against this historical background. Hardy-Weinberg equilibrium (HWE), which is obtained when large population undergoes stable reproduction without mixture with other population, is theoretically expected, however the actual data and human history does not always suffice HWE. In this lecture, basic concepts of population genetics are covered to provide big picture of the genetic and environmental problems in the population level.

901.779 금연과 건강 3-3-0

Tobacco Control and Health

흡연을 통한 담배사용은 강한 중독성을 가진 암, 폐중증, 심장질환 등 여러 가지 심각한 질병을 일으킨다. 세계 많은 나라에서 이러한 질병부담을 덜고자 담배사용을 규제하기 위한 기
보건대학원(Graduate School of Public Health)

보건정책과(Dept. of Public Health)

■ 보건의료정책과

보건정책과는 보건의료정책을 연구하고, 그 결과를 바탕으로 정책 제안을 한다. 이 과목은 보건의료정책과 관련된 주제를 다루며, 정책 분석, 정책 개발, 정책 평가 등의 기술을 집중적으로 배운다.

보건정책과 3-3-0

901.749B 비판건강정책 3-3-0

Critical Health Policy

이 과목은 보건의료정책의 기초가 되는 이론을 비판이론의 관점에서 학습할 것이다. 보건의료정책의 이해는 다양한 이론적视角가 필요하다. 본 과목은 보건의료정책과의 관점에서 보건의료정책의 기초를 이해하는데 도움을 줄 것이다.

902.642B 건강증진기획 3-3-0

Health Promotion Program Planning

건강증진 기획은 다양한 과정을 거쳐 수행되며, 이를 위한 기초가 되는 이론적 이해는 중요하다. 본 과목은 건강증진 기획모델인 PRECEDE-PROCEED, PATCH, MAPP, Intervention Mapping, 6-Step Process Model을 비교 학습한다. 각 모델의 특성, 장단점, 활용 분야 등을 탐구하게 된다.

900.540B 보건정책과 3-3-0

Political Economy of Health System and Policy

보건정책과는 보건의료정책을 이해하고, 이를 바탕으로 정책을 제시한다. 이 과목은 보건의료정책과의 관점에서 보건의료정책을 이해하는 데 도움을 줄 것이다.

보건정책과 보건의료정책과의 조화를 통해, 보건의료정책과의 관점에서 보건의료정책을 이해한다.
901.776 社会理論と健康 3-3-0

Social Theory of Health

This course deals with social theories of health, illness, and medicine. By utilizing the conventional concepts of sociology such as social power, group interests, social class and inequality, organizations and groups, health behavior and illness episodes will be analyzed. Postmodernism and social constructionism are also adopted for understanding the current issue of health politics and health policy.

902.678 보건의료의 계량경제분석 II 3-3-0

Econometrics in Health Care II

This course, advanced econometrics applied to health care, focuses on developing analytical skills in handling observational data using various econometrics models. It covers extension of classical linear regression model, regression with panel data, quasi-experiments, and instrumental variables regression.

902.693A 도시건강과 커뮤니티 연구 3-3-0

Urban Health and Community Research

This course covers the history and basic principles of community health research (CBPR). This course aims to enhance the understanding of the principles and processes of community health research (CBPR). This course focuses on urban health issues and related community health perspectives. This course deals with social theories of health, illness, and medicine. By utilizing the conventional concepts of sociology such as social power, group interests, social class and inequality, organizations and groups, health behavior and illness episodes will be analyzed. Postmodernism and social constructionism are also adopted for understanding the current issue of health politics and health policy.

903.533 작업환경허용기준 2-2-0

Scientific Basis for Occupational Exposure Standards

This course will cover the history and basic principles of setting occupational exposure standards in Korea and the US. This course will cover the history and basic principles of setting occupational exposure standards in Korea and the US. Students in this course will learn the concepts and applications of community capacity, community collaboration, participation and empowerment, and community-based participatory research (CBPR). This course aims to enhance the understanding of the principles and processes of community health and CBPR in urban health context via discussions and case studies.

901.758A 환경오염물질이동특론 3-3-0

Topics on Fate and Transport of Environmental Pollutants

This course will cover the history and basic principles of setting occupational exposure standards in Korea and the US. Students in this course will learn the concepts and applications of community capacity, community collaboration, participation and empowerment, and community-based participatory research (CBPR). This course aims to enhance the understanding of the principles and processes of community health and CBPR in urban health context via discussions and case studies.
This course is for practitioners and specialist in occupational safety and health services. The history of occupational safety and health programs and each program will be reviewed. The principles and limitations of operating safety and health programs will be discussed. Students will be expected to have practical experience in running occupational health and safety services and to share.

This course is designed for professionals and specialists in occupational safety and health services. The historical development of occupational safety and health programs is discussed. The principles and limitations of operating safety and health programs will be reviewed. Students will be expected to have practical experience in running occupational health and safety services and to share.

This course will introduce students to the theory and practice of environmental impact assessment (EIA). The objective of EIA is to encourage consideration of the environment in the planning and decision-making process to arrive at actions that avoid or minimize adverse impacts on the environment. EIA is now mandated by legislation in over 100 countries around the world. With encouragement from ISO 14000, the practice of EIA is expanding into the corporate world. The main goals of this course are teaching students about many aspects of climate change and mechanisms of Kyoto Protocol. Areas of emphasis are (1) causes of climate change (2) effects of climate change (3) solutions of climate change (4) methodologies of emission inventory for domestic greenhouse gases (5) management of global climate agreement. Knowledge on general environmental pollution is recommended to take this course.

The objective of this course is to make professionals related to emission inventory and database for greenhouse gases by teaching students about many aspects of climate change and mechanisms of Kyoto Protocol. Areas of emphasis are (1) causes of climate change (2) effects of climate change (3) solutions of climate change (4) methodologies of emission inventory for domestic greenhouse gases (5) management of global climate agreement. Knowledge on general environmental pollution is recommended to take this course.
경비학과(Dept. of Public Health)

903.571A 환경보건학을 위한 독자독성학
Molecular toxicology perspectives

이론과 실제를 익히는 데 목적이 둔다. 이 과목은 환경오염물질에 대한 심화된 이론들을 배우게 된다. 오염 현상에 대한 심화된 이론들을 배우게 된다. 환경오염물질을 분석을 통하여 오염정도를 평가하는 프로젝트 진행하게 된다. 환경오염물질의 거동과 분해 및 제거에 대하여 평가하게 된다.

903.568 수질 화학 및 실험 특론
Topics on Water Chemistry and Experiment

본 과목에서는 수질에서의 중금속, 유기물질, 환경오염물질로 인한 오염 현상에 대한 심화된 이론들을 배우게 된다. 또한 화학 분석 기법들을 통하여 환경 중 특히 물에서의 환경 오염물질을 정량화하는 분석 기법들을 마치게 되고, 이를 통한 실험을 진행하게 된다. 미바에 환경오염물질의 기동 효과 및 예측에 대하여 평가하게 된다. 마지막 단계에서는 습득한 이론과 분석 능력을 통하여 선택된 사례에서의 오염물질을 분석을 통하여 오염정도를 평가하는 프로젝트를 진행하게 된다.

903.569A 정량적 노출평가 방법론
Quantitative Methods of Exposure Assessment

노출 평가는 위해성 평가의 중요한 부분으로서, 노출과 관련된 여러 인자(생물학적, 화학적, 물리학적 노출원 및 경로, 노출 정도)가 예측 용량 및 생물학적 반응을 취득한다. 노출의 수준이 그 크며, 개인 내외적으로 다르기에 통계적 방법론은 노출을 추정하는데 매우 중요하다. 본 수업에서는 정량적 노출평가와 관련된 이론을 다양한 산업현장 및 환경에서 측정된 데이터를 활용하여 (통계 편지자를 활용) 직접 분석하고 해석하는 과정을 통해 노출 평가의 이론과 실제를 익히는 데 목표를 달한다.

석박사 3학년, 선수과목. 보건학 개론, 보건 통계학 개론, 작업 환경 측정 및 실험(선형 통계 분석은 대체 수강 가능)

Exposure assessment is an important branch of risk assessment, and it deals with exposure (covering biological/chemical/physical sources, pathways, exposure magnitude), potential/internal dose and biological effects. Since the exposure levels vary across groups, between subjects in a given group and within subjects over time, statistical methodology is an important tool to estimate the exposure and intake. This course provides both theoretical information and practice applications using real data collected in various occupational workplaces and environmental settings. (3-3-0 for doctoral students and advanced master students)

Prerequisites: Introduction to health science and service, Principles of biostatistics, Sampling & Analysis of industrial environment, (Linear statistical analysis may be taken concurrently)

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903.575A 보건대기미생물학특론
Current Topics on Aerobiology and Public Health

차세대 DNA 염기서열 결정법(next-generation DNA sequencing)을 포함한 분자분석 기술에 대한 최근의 발전은 생명과학 연구의 다양한 영역에 영향을 끼쳤다. 이런 기술들은 연구에 대한 이해와 더불어 새로운 실험 연구기법에 대한 이해를 요구한다. 본 수업은 대기미생물학과 보건학 연구에 대한 최근의 이슈를 배우고 공유하는 기회를 제공한다. 대기미생물학 연구에 사용되는 최첨단 기술, 지구온난화에 미치는 공기 중 미생물의 영향, 공기 중 감염질병의 발생이나 공기 중 미생물과 관련된 생물방어(biodefense)와의 특성 관리 주제를 포 함한다. 선수과목: 보건대기미생물학개론

Recent advancement of molecular-based analytical techniques including next-generation DNA sequencing has revolutionized various areas of biological research. It is also the same for aerobiological research so that such technologies have transformed the research paradigm. This course intends to provide opportunities to learn and share the current topics on aerobiology and public health by reading the latest literature over time. The particular topics of interests include, but not be limited to, cutting-edge technologies used for aerobiological research, effects of airborne microorganisms on global climate, emerging airborne infectious diseases, or biodefense associated with airborne microbial agents. Prerequisites: Aerobiology and Public Health.
아시아의 급격한 경제적 성장 및 활동은 다양한 환경보건문제의 원인이 될 수 있다. 하지만, 다양한 문화 및 지역적 배경에 따라 국가간 환경보건문제의 범위 및 그 질은 다르게 될 수 있다. 이에 따라, 환경보건문제가 국가간의 경계를 넘어 일어나게 되고, 때문에 각각의 국가간에 이러한 특이적 환경문제들을 서로 배우고 나누는 것이 중요해지고 있다. 이에, 다음과 교과과정은 다양한 국제적 배경을 가지고 있는 교수 및 학생들에 있어 각각의 국가에서 일어나는 환경문제를 배우고 나누게 하기 위해 개설되었다. 이러한 이유로, 본 수업은 간접적으로 환경문제를 전공하고 있는 학생은 물론이고, 다른 분야의 학생들과 여러 나라의 학생들 모두 환영한다.

Increasing economic activities may be a major cause of various environmental health problems in Asian countries. However, extent and quality of environmental health problems likely vary from country to country due to different cultural and geographical backgrounds. As environmental problems became more borderless, it is essential to learn and share information of environmental problems unique to each country. This course intends to provide an arena for students and faculty with various international backgrounds to learn and share environmental problems unique to each country. This class welcomes students not only from the school of public health, but also from schools of various academic disciplines. Insights from non-Asian countries are also very important, so their participation is also highly encouraged.

현대사회에 들어와 직업의 유해인자 중 다양한 근골격계 질환을 일으키는 작업장 인간공학적 요인들이 크게 중요하게 되고 있다. 이로인해 발생할 수 있는 여러 환경보건문제가 아직도 존재하고 있다. 환경보건 전문가는 다양한 환경의 문제를 파악하고 이들이 인체와 생태계에 영향을 미치는 부분의 이해와 관리에 기여하는 것이 필요하다. 개발도상국에서는 우리나라는 이미 해결이 되어 발생되지 않는 여러 환경보건문제가 아직도 존재하고 있다. 이런 문제에 대한 이해를 통한 지식의 함양과 환경보건의식 수준의 향상은 학생들이 직업생활에서 직면할 수 있는 실제 경험을 구성하고자 하는 학생들에게 국제적 지식과 전망을 제시한다.

Environmental health involves assessment of various environmental problems which can cause effects in human health and ecosystem. In Korea, various fundamental and serious environmental health problems has been already solved. However, such problems still exist in developing countries. Students in Korea do not have real experience of assessment of such environmental health problems. Therefore, this practice course will provide an opportunity to gain experience of assessing and tackling various environmental health problems in developing countries.
행정대학원
Graduate School of Public Administration
公共行政(Introduction to Public Administration)

本课程旨在理解公共行政领域的基础理论，包括行政行动、行政关系、法律政策问题等。

<table>
<thead>
<tr>
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<td>공공인턴십</td>
<td>3-0-6</td>
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<tr>
<td>920.611</td>
<td>행정이론</td>
<td>3-3-0</td>
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<tr>
<td>920.620</td>
<td>경제분석</td>
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<tr>
<td>920.621</td>
<td>행정법</td>
<td>3-3-0</td>
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<tr>
<td>920.622</td>
<td>공공윤리와 리더십</td>
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<tr>
<td>920.625</td>
<td>계량분석</td>
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公共行政(Graduate School of Public Administration)
### 920.651 조사방법론 3-3-0

**Research Methods for Public Administration and Policy**

The course attempts to enhance students’ ability to understand and analyze administrative and policy problems in the public sector. The course focuses on comprehensive understanding of research methods for social sciences and limitations of quantitative methods. The course will cover how to setup research questions and hypotheses, collecting data, analyzing and testing data, and report writing. During the course, students will develop research proposals and present in the classroom for further discussion.

### 920.658 정책이론 3-3-0

**Theories of Public Policy**

The aim of this seminar is to introduce major theories of public policy studies in order to deepen our understanding of public affairs. The students are expected to go on applying those concepts and theories to real-world public policy challenges. The seminar will analyze policy process such as agenda setting, policy making, implementation and evaluation. It will also examine various policy actors who influence public policy such as the President, elected politicians, bureaucrats, legal practitioners and civil society activists as well as ordinary citizens.
Theories of Public Organizations

This course intends to help you acquire the basic knowledge about organization theories and to develop your ability to think critically about managerial practices in organizations. While some attention will be given to private organizations, the primary focus will be on public and quasi-public organizations. Key themes that will be examined include organizational environment, goals, effectiveness, powers, decision-making, structures, leadership, cultures, and changes. This course will be organized into three sections: lectures on basic concepts and theories, presentation of short paper on assigned readings, and case discussion on team projects.

Human Resource Management in the Public Sector

The goal of this course is to examine major concepts and theories of human resource management (HRM) in the public sector. Based on this knowledge, this course intends to develop students’ professional capacity by analyzing HRM practices and discussing recent cases. The focus of this course is on understanding the distinctive features of human resource management in the public sector as compared to HRM in the private sector. The course is organized into three parts: lectures on key concepts and theories, presentation of short paper on assigned readings, and case discussion on team projects.

Financial Administration

This course examines the theories of budgeting and financial management. More specifically, it examines: (1) the role of budget/fiscal policy, (2) the determinants of (national) budget, (3) the behavior theories of budget, (4) the reform of budget systems, (5) the government sector accounting, and (6) the theories of auditing.
본 강좌는 환경행정과 관련된 이론적 논의 및 환경문제를 해결하기 위한 제도적 수단들을 검토하고, 문헌과 사례분석을 통해 지속가능한 사회를 실현할 수 있는 대안을 모색하고자 한다. 강의 1 3주차에는 신 환경 패러다임의 대두와 환경행정의 대상 및 환경정 조치를 공부한다. 4 7주차에는 환경 분쟁에 대한 사례를 소개하고, 수질, 토양, 대기 등 매체별 환경관리 제도를 개관한다. 8 11주차에는 환경과 정보적 분석, 환경영향평가, 자율환경 관리 등 환경관리의 다양한 기법을 공부한다. 12 15주차에는 지구 환경협력, 지속가능한 발전, 녹색 정치 등의 주제를 통해 환경 관리의 시사점을 도출한다. 본 강좌는 매주 강의와 발제 및 토론으로 진행되며, 발제자로 제한된 학생들은 각 주차별 리딩리스트를 임고 임해외 대외의 리뷰페이퍼를 제출하여야 한다. 발제는 본인의 기말페이퍼와 연관된 논문으로 총 3회를 발표하며, 리딩리스트는 참석문에 나와 있는 논문을 발제하고자 할 경우 학기 초에 교수가 상의하여 결정한다. 중간고사는 강의노트를 중심으로 촉발되며 기말보고서는 강의계획서에 나와 있는 12개 주의 강의주제 중에서 선정한다.

This course introduces the study of corruption and corruption control. Corruption is considered individual, organizational, national, and international problems. What is corruption? The term “corruption” is applied in ways that are sometimes culturally specific, but which cover a broad range of practices. Does the pervasiveness of corruption really impose substantial and widespread societal costs, impeding economic development, limiting the efficiency of public services, and weakening political institutions by undermining trust in government? The causes and consequences of, and control strategies for corruption have been contested in various literatures. This course is to understand the topic to systematic study, combining insights from several different disciplinary perspectives, including political science, economics, sociology, and public management.

Administrative Information System

이 강의는 (1) 정보화 사회와 행정의 변화, (2) 행정정보체계와 정보기술 인프라, (3) 정보기술의 응용, (4) 행정정보체계의 개발 방법론, (5) 정보민주주의, (6) 정보정책, (7) 전자정부 등에 대한 개괄적인 이해를 추구한다.

Basic elements of computer hardware, software and programming will be introduced. Concepts on administrative
<table>
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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>921.617A</td>
<td>공공 행정과 사회이론 (Public Administration and Social Theory)</td>
<td>3-3-0</td>
<td>本课程介绍公共行政与社会理论，涉及公共行政理论、社会实践及方法。研究现代社会的问题，如民主、社会不平等、社会变迁和政府行为等。</td>
</tr>
<tr>
<td>921.618</td>
<td>국가와 행정 (State and Public Administration)</td>
<td>3-3-0</td>
<td>本课程研究国家与行政的关系，包括行政的历史、结构、法理和政策。通过分析国家和行政的关系，理解国家在现代社会中的作用。</td>
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<tr>
<td>921.619</td>
<td>행정과 사회이론 (Public Administration and Social Theory)</td>
<td>3-3-0</td>
<td>本课程继续探讨公共行政与社会理论，侧重于行政与社会的互动，以及行政在现代社会中的角色和影响。</td>
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<tr>
<td>921.623</td>
<td>한국행정사 (History of Korean Public Administration)</td>
<td>3-3-0</td>
<td>本课程研究韩国公共行政的发展历史，包括行政制度的演变、政策的制定和执行，以及社会对行政的影响。</td>
</tr>
<tr>
<td>921.679A</td>
<td>행정과 커뮤니케이션 (Public Administration and Communication)</td>
<td>3-3-0</td>
<td>本课程探讨公共行政与沟通的关系，包括行政在沟通中的角色，以及如何有效沟通行政政策和社会需求。</td>
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</tbody>
</table>

In this course we will do a historical analysis of Korean public administration.
M2083.000300 미국의 외교정책론 3-3-0

US Foreign Policy Study

This course provides an introduction to the comparative study of political systems using case studies from Asia, Europe and North America. The focus is on the historical development of political systems and the comparative evaluation of issues such as conflict and consensus, electoral systems, federalism and unitary states, party systems, presidentialism, institutional characteristics of parliamentary government, and institutional checks and balances. The course also examines country cases that do not follow the blueprint of liberal democracy. The presentation of case studies follows a historical and regional logic starting off with the Westminster system of democracy (Britain), consociational democracy (Switzerland and Lebanon), liberal democracy with and without presidentialism in North America and Europe (USA, France, Germany, Spain). It then focuses on a number of Asian country case studies of liberal democracy (Republic of Korea, Japan) and on non-liberal systems of government (People’s Republic of China, Syria). The course aims to help participants to gain comparative knowledge of a large number of political systems and detailed knowledge of at least two country case studies.
## International Relation

한국과 국제관계의 특징을 점검하고, 국제관계 이론이 국제사회에
서 현실적으로 어떻게 전개되고 있는가를 분석하고, 국제사회의
행위자의 행동 및 결과와 그 해결방법을 모색하여, 2000년대
세계가 직면하고 있는 여러 문제점에 관하여 검토, 진단하여
본다. 특히 강대국이 국제관계에서 큰 영향을 미치는 현실 속에서
제3세력의 대두가 따르는 약소국 발전조성시대의 국가이익 증진책
과 안보문제 등을 통해 논의하고 국제사회 속에서 한국의 새로운
좌표모색을 위한 방안연구에 중점을 두고 있다.

In this course we will review and diagnose various international
problems We will study the characteristics of modern
international relations, analyze how the theories of interna-
tional relations are actually being developed in the interna-
tional society and examine the actions and conflicts of be-
haviorists in the international society as well as the meth-
do of settling these conflicts We will have discussion on
the small and weak countries as regards their security prob-
lems and the promotion of national benefit Although the
third force is on the rise, in actuality the powerful countries
will pay special attention to the research that deals with the new
coordinates of Korea in the international society.

### 924.523 재정정책 3-3-0

#### Fiscal Policy

이 과목에서는 재정정책의 목표, 소비, 저축, 소득균형 이론, 재
정정책과 소득변화, 재정과 금융정책 등을 논한다. 또한 현실이 높
어진 재정정책과, 그리고 재정정책의 정책적 측면도 고찰한다.

This course will examine the following topics: the ob-
jectives of fiscal policy; consumption; saving; the theory of
balanced income; fiscal policy and saving change; finance
and banking policy It will also discuss local finance and the
political aspect of fiscal policy.

### 924.544 통제정책 3-3-0

#### Economic Policy

한국경제는 정부주도형 경제성장기를 지나 시장의 역할이 중심
이 되는 전환기에 있다. 이 과목은 현재 한국 경제가 당면하고 있
는 산업구조조정, 기업의 소유 지배구조, 정부기구 조정이라는 중
요한 정책과제에 대한 이론적 근거와 실증적 사례를 연구하는
것을 목적으로 한다.

Korea is in transition from government-driven economic
growth to an advanced market economy. This course dis-
cusses economic theories and empirical cases regarding struc-
tural economic policy, corporate governance and government
regulations in the current Korean economy.

### 924.556 비용편익분석 3-3-0

#### Cost-Benefit Analysis

이 과목에서는 공공투자사업을 분석하고 평가하는 데 필요한
각종 이론과 기법을 공부한다. 연구의 핵심은 비용-편익분석
(Cost-Benefit Analysis)이며, 이론과 실제를 함께 고찰한다. 공공
투자의 타당성 분석에 관한 사례연구도 한다.

The purpose of this course is to study various theories
and techniques for analyzing public investment projects We
will do an in-depth study of cost-benefit analysis and do
case studies on the analysis of validity of public investment.

### 924.591 외교정책 3-3-0

#### Foreign Policy

가족의 외교정책을 비교, 점검하고, 국제사회에서 각각의 나라
간 문제를 모색하는 데 역점을 두고 있다. 특히 미, 소, 중 등 강
대국의 외교정책과 중진국 대열에 기고 있는 국가의 외교정책, 약
소국가의 외교정책을 연구한다. 특히 분단한 한국이 각각하는
국제관계 속에서 재정의 비용(최고의 화려한 이익을 얻고, 국가
의 생존을 유지하는 방법을 모색함에 중점을 두고 있다. 서방국
가, 선진국가, 약소국가의 외교정책 특성을 비교, 진단한다. 각국
의 외교정책을 모색하고 있는 국가가 이의 전환적 중간여건과 분
석하고, 국제사회에서의 시기에 대한 사례도 연구한다.

This course will focus on comparing and reviewing the
foreign policies of other countries We will study the foreign
policies of strong nations such as the U.S., Russia, and
China as well as those of developing countries and weak &
small countries Emphasis will be laid on exploring the way
for Korea to achieve maximum profit by minimum cost in
turbulent international relations We will compare and review
the characteristics of foreign policies in the Western coun-
tries, newly emerging nations and weak & small countries We
will analyze the national power supporting the foreign policies
along with the measures to promote them Case studies on the
events of the international society will also be carried out.

### 924.595 산업정책 3-3-0

#### Industrial Policy

이 과목의 주 내용은 국제무역이론의 기초, 산업정책, 다변주의,
국제수지 등이다.

The main topics for this course are as follows: the bal-
ance of payments; the foundation of commercial policy(in-
strument- tariffs, quantitative restrictions, licence system, ex-
change control, bilateral agreements).

### 924.600 규제정책 3-3-0

#### Regulatory Policy

최근 정부규제의 합리화를 위한 논의가 활발하게 이루어지고
있다. 이 과목은 경제정책론과 경제정책론에서 학생들에게 경제
규제의 합리론 근거, 출제와, 출제화정시대에 있어서의 정부규제의
개혁과정에 수반되는 제안의 정치, 경제, 행정학적, 행정학적 사례들을
분석하여 합리적인 대안을 개발하는 것을 목적으로 한다.

This course will deal with and analyze various regulatory policy
issues from the politico-economic perspectives to be
discussed range from the economic rationales for regu-
lation (market failure), government failure, the political and
administrative process of regulation and deregulation, major
policy issue areas in economic and social regulation (among
others, entry regulation, price regulation, business conduct
regulation, environmental regulation, industrial safety regu-
lation and consumer protection) and regulatory impact analy-
sis (cost-benefit analysis of regulation) to procedural and
organizational regulatory reform measures This course will
focus on deregulating economic regulations massively while
rationalizing social regulation by taking advantage of mar-
ket-incentive regulatory instruments It will observe the recent

**학점구조는 "lecture hours" per week; and the final number means "laboratory hours" per week. 15 weeks make one semester.**
cases of regulatory policy.

924.601토양정책 3-3-0

Trade Policy

순수무역이론의 이해보다는 전후 국제무역을 규율해야 주요한 국제무역규범 및 주요국 통상관계법의 내용과 전체상황을 역사적, 제도적, 정치·경제적 관점에서 이해하고 이를 규범 속에 합치되어 있는 국가간 이해관계의 맥락과 같은, 규범과 현실의 과리, 국가규범과 국내규정 및 국내법 사이의 과리, 허태일하다는 통상마찰 등 국제 경제관계의 현안과제를 보다 깊이 있게 파악함으로써 우리 경제가 이해도나바 한 통상정책방향을 모색하는 데 도움을 줄 수 있도록 한다.

Unlike the courses of similar titles that are taught in the economics department, this course gives primary focus on the political, economic, historical, and institutional analysis of trade policy matters and trade policy making. Accordingly, it does not require students to be acquainted with international economics. Rather, it encourages students to think and analyze trade policy matters in terms of international political economy and from the institutional perspective. Among numerous policy issue areas, it pays special attention to the historical review of the current world trading system, the political economic analysis of the major international trade rules (e.g. most favored nation (MFN), national treatment, safeguards, anti dumping and countervailing duties, trade in services, dispute settlement procedures, etc.) and the political dynamics of international and domestic trade policymaking. It adopts system centered, society centered and state centered approaches simultaneously or separately as deemed appropriate and relevant.

924.659정책과정론 3-3-0

Policy Process Theory

The main purpose of this course is to broaden the knowledge of policy analysis and to cultivate analytic methods for policy analysis. Major course topics include the following: the concepts and processes of policy analysis; problem diagnosis and definition; the methods of policy arguments; evaluation criteria of policy alternatives; the processes and uses of benefit-cost analysis; the concepts and applications of systems analysis; policy indicators; the use of policy information systems; the methods of writing papers on policy. Students will be required to analyze the cases of relevant policy issues. Students select and analyze some real government programs or projects and discuss the evaluation output.

924.663정책평가 3-3-0

Policy Evaluation

The main purpose of this course is to acquire and broaden the knowledge of evaluation methods in policy impact evaluation. Major course topics include the following: the approaches and types of policy impact evaluations; the concepts of causal relationships and validities in policy impact evaluation; the experimental and quasi-experimental methods of impact evaluation; the management and uses of policy impact evaluation. Students select and evaluate some real government programs or projects and discuss the evaluation output.

924.666문화정책 3-3-0

Cultural Policy

This course will introduce the planning process theory focusing on national development plan and help students develop planning capacity by examining the practical aspects of planning topics to be covered include the following: the concepts, ideology, typology, historical background and trends of planning; procedural theories that involve the process, organization and system of planning, and its methods of approach; the origin and development of national planning system; planning organizations; process of planning in foreign developed countries; the reality of our planning systems.
통화재정, 문화관련법 등이 이 과목에서 다루는 중요한 주제들이다.

이 과목은 정책과정에서 최고책임자인 대통령의 성격과 활동하는 리에 대해 중점한다. 국가대표 및 정치지도자로서 역할은 뿐만 아니라 정책결정, 정책행동, 행정조직의 운영, 관리 등 국가관리의 최고책임자인 대통령의 정책 및 행정과정에서 담당해야 할 역할과 이를 수행하는 데 영향을 미치는 사회, 정책 환경의 중요 및 정책 내외 여러 가지 제약조건을 심도있게, 이러한 제약조건 속에서 합리적인 정책결정, 효율적인 정책행동 및 조직관리를 위 한 방안이나 전략을 중심으로 대통령의 리더십 행사를 가능성을 추구한 결과를 검토한다. 대통령의 역할을 보조하고 때로는 대행하는 관료조직과 대통령 비서실 및 국회와의 연계를 담당하는 집권당과의 관계 등이 구조적인 측면에서 중요한 토대가 된다.

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Students study theories and practical agenda on government role of institutional change for societal informatization and government informatization-electronic government under mature information society. This course covers knowledge society trend, government change in heavily networked environment, network standard and information security, e-government value, strategic planning, organization and budgeting process, horizontal and cooperative inter-organizational relation, privatization and outsourcing, on-line citizen participation, non-stop service, open information service, project performance evaluation, future and vision for Korean society and government. This course focuses on Korea’s experience and vision but includes US and European society and government cases.

Internet Policy and Law

This seminar considers legal choices and problems our so-society faces with the rapid introduction of digital technology as our primary information technology. The first few weeks will be devoted to background readings that describe contemporary understandings of the attributes of digital technol-ogy and electronic media, provide a basis for identifying likely social and economic implications of the transition, and consider the role of law and regulation that can and should play in shaping society. The remainder of the seminar will consider the role of law and regulation that can and should be spent considering a number of problems of contemporary governance.

Developmental State and Industrial Policy

This course deals with the issues of industrial policy and economic development from a comparative political economy perspective. It examines the types and characteristics of developmental state models of the production system and explores the major concepts such as absolute, comparative, and competitive advantages from the political economy perspective, and classical theories about the role of government and industrial policy. We will also analyze the industrial and development policies of major countries such as the United States, Europe, Japan, and Korea in terms of the varieties of capitalism from the theoretical and policy perspectives. In particular, we will discuss the characteristics of development and industrial policies of these major countries, major policy instruments, relations with protectionism, sustainable development in the recent global economic crisis, and the nature of industrial policy. Finally, the new developmental state model will be revisited from the Korean perspective and its policy implications will be examined.
과학기술정책연구
Science and Technology Policy

본 과목은 혁신에 대한 이론적, 실증적 기반을 습득하고 과학기술정책에 대한 시사점을 찾는 것을 목적으로 한다. 이론적으로는 혁신을 유도하기 위한 특허, 포상, 라이센싱 등 과학기술정책의 역할을 분석한다. 또한 과학기술정책 행위자의 상호작용과 정책수립 과정을 분석한다. 또한 기술혁신과 경제성장, 제4차 산업혁명의 역할에 대해 논의한다. 이러한 이론적 논의를 바탕으로 실증적 연구를 검토하며, 수강생은 국내 NTIS 자료를 활용한 실증 연구 과제를 제출하여야 한다. 수업은 강의와 세미나 토론 형식으로 진행되며, 수강생은 토론에 적극적으로 참여하여야 한다.

This course introduces both theoretical and empirical research on innovation, and discusses implication on science and technology policies. Topics include the general theories of science and technology policy, the roles of patents, prizes, and licensing, technology and economic growth, and the 4th industrial revolution. The students must write a short research paper using the NTIS database. The students are also expected to participate actively in the class discussion.
Theories of Global Public Administration

Theories of Global Public Administration

This course will discuss administration theories that are applicable for the 21st century. Leadership that promotes change and innovation is required, because global leadership must aim to support the quality of life and well-being. Global leadership must not only promote change and innovation but also act as a transformative leadership that facilitates social innovation and intellectual development. Need for public ethics is demanded within a nation, it is important to consider public ethics for the development of society is more urgent than ever before. Global leadership must not only promote change and innovation but also act as a transformative leadership that pioneers global environmental and social innovation. In addition, because global leadership must aim to support the quality of life and well-being of the 21st century, it should simultaneously take public ethics into consideration. Just as public ethics is demanded within a nation, it is important to consider public ethics for the global society.

This course will discuss global leadership and its need within the global society, the qualities of global leadership, social innovation, intellectual development, need for public ethics, and contents of public ethics.

Theories of Policy and Institutions

Theories of Policy and Institutions

This course focuses on comprehensive understanding of research methods for social sciences and limitations of quantitative methods. The course will cover how to setup research questions and hypotheses, collecting data, analysing and testing data, and report writing. During the course, students will develop research proposals and present in the classroom for further discussion.

Social Research Methods of Public Administration

Social Research Methods of Public Administration

This course will discuss social research methods, as well as both statistical and qualitative methods, and research ethical principles. Students will be able to set up research questions and hypotheses, and develop research proposals.

Global Leadership and Public Ethics

Global Leadership and Public Ethics

21세기의 글로벌 시대적 상황은 변화와 혁신이다. 사회발전을 위하여 변화와 혁신을 추구하는 리더십이 어떠한보다 경제의 요구이다. 글로벌 리더십은 변화와 혁신을 추구하는 전환적 리더십으로서 글로벌 환경과 사회혁신을 선도하여야 한다. 아울러 글로벌 리더십은 21세기 삶의 결과 행정을 지향하여야 하기 때문에 공공윤리를 동시에 고려하여야 한다. 국가 내에서 공공윤리를 요구되므로 글로벌 사회에 적용되어야 할 공공윤리를 동시에 고려하여야 한다.

본 강좌는 글로벌 사회에 적합한 글로벌 리더십과 공공윤리의 필요성, 글로벌 리더십의 특성, 사회혁신, 지적 발전, 공공윤리의 필요성, 공공윤리의 내용 등을 논의한다.

Change and innovation define the global period of the 21st century. Leadership that promotes change and innovation for the development of society is more urgent than ever before. Global leadership must not only promote change and innovation but also act as a transformative leadership that pioneers global environmental and social innovation. In addition, because global leadership must aim to support the quality of life and well-being of the 21st century, it should simultaneously take public ethics into consideration. Just as public ethics is demanded within a nation, it is important to consider public ethics for the global society.

This course will discuss global leadership and its need within the global society, the qualities of global leadership, social innovation, intellectual development, need for public ethics, and contents of public ethics.
The aim of this seminar is to introduce major theories of public policy studies in order to deepen our understanding of public affairs. The students are expected to go on applying those concepts and theories to real-world public policy challenges. The seminar will analyze policy process such as agenda setting, policy making, implementation and evaluation. It will also examine various policy actors who influence public policy such as the President, elected politicians, bureaucrats, legal practitioners and civil society activists as well as ordinary citizens.

M2856.000600 경제와 행정 3-3-0

Economics and Public Administration

This course will be organized into three sections: lectures on key concepts and theories, pre-lecture preparation, and case discussion. The course is organized into three parts: lectures on key concepts and theories, pre-lecture preparation, and case discussion. The focus of this course is to develop students' professional capacity by analyzing HRM theories of human resource management (HRM) in the public sector. Based on this knowledge, this course intends to develop students' research skills and critical thinking abilities, as well as enhancing their ability to communicate effectively in English.

M2856.000700 인사행정론 3-3-0

Public Personnel Administration

The goal of this course is to examine major concepts and theories of human resource management (HRM) in the public sector. Based on this knowledge, this course intends to develop students' research skills and critical thinking abilities, as well as enhancing their ability to communicate effectively in English.

M2856.000900 조직과 행정 3-3-0

Organization and Public Administration

The aim of this seminar is to introduce major theories of public policy studies in order to deepen our understanding of public affairs. The students are expected to go on applying those concepts and theories to real-world public policy challenges. The seminar will analyze policy process such as agenda setting, policy making, implementation and evaluation. It will also examine various policy actors who influence public policy such as the President, elected politicians, bureaucrats, legal practitioners and civil society activists as well as ordinary citizens.

M2856.001000 도시정부론 3-3-0

Urban Government

This course introduces the study of corruption and corruption control. Corruption is considered individual, organizational, national, and international problems. What is corruption? The term “corruption” is applied in ways that are sometimes culturally specific, but which cover a broad range of practices. Does the pervasiveness of corruption really impose substantial and widespread societal costs, impeding economic development, limiting the efficiency of public services, and weakening political institutions by undermining trust in government? The causes and consequences of, and control strategies for corruption have been contested in various literatures. The purpose of this course is to understand the topic to systematic study, combining insights from several different disciplinary perspectives, including political science, economics, sociology, and public management.

M2856.001100 글로벌시대의 발전정책 3-3-0

Development Policies in the Global Context

The course introduces the study of corruption and corruption control. Corruption is considered individual, organizational, national, and international problems. What is corruption? The term “corruption” is applied in ways that are sometimes culturally specific, but which cover a broad range of practices. Does the pervasiveness of corruption really impose substantial and widespread societal costs, impeding economic development, limiting the efficiency of public services, and weakening political institutions by undermining trust in government? The causes and consequences of, and control strategies for corruption have been contested in various literatures. The purpose of this course is to understand the topic to systematic study, combining insights from several different disciplinary perspectives, including political science, economics, sociology, and public management.
중앙-지방 관계 3-3-0
Central-local Relations

지방정부의 출현에 따라 지방정부의 자율성이 전면적으로 증진되어 지방정부와 지방정부간의 의사소통과 조정이 증진된 정책문제로 대두되어 왔다. 이 같은 수요에 대응하기 위하여 본 강좌는 정부들 이 정부관계에 대해 중점적으로 이해하고 효과적 정부관계의 구조를 위한 정책전문가를 양성하는 데 목표를 두고 있다. 교과 내용은 정부간관계의 이론, 정부정책과 정부간관계, 정부관계의 조정 및 협력방식, 태평 및 사무차원의 정부간관계, 외국의 정부간관계 등의 과정을 포함한다.

Enhancement of local democracy has increased the importance of the inter-communication and coordination between the central and local governments and among the local governments. Corresponding this change, this course deal with such topics as significance of IGR, governmental structures and IGR, coordination and cooperation in IGR, IGR, comparative analysis of IGR and so on.

국제통상정책론 3-3-0
International Trade Policy

이 과목은 국제통상정책의 이론과 실제를 다룬다. 우선 통상 및 무역정책의 제안에 따른 효과를 이해하기 위해 리키제도 모델, 혼산-ולד모델, 스로프-사우스먼 모델과 같은 기초적인 국제무역 모델을 다룬다. 그 다음 정책입안자가 선택한 정책에 영향을 미치는 요인들을 이해하기 위해 선사, 로비 및 정당과 같은 국내 정치제도의 이론을 분석한다. 그 다음 단계에서 GATT/WTO를 중심으로 세계 무역, 서비스무역, 지식재산권과 관련된 주요 무역규범을 분석하고, 특정무역협정, 무역 기여 이슈와 새롭게 등장한 통상 이슈에 대한 체계적이고 포괄적인 이해를 도모한다.

This course covers the theory and practice of international trade policy in some depth. We start by developing a set of simple models of international trade, in order to understand the redistributive effects of trade policy. Then, we add political structures in order to understand the forces that influence the policies chosen by policy-makers. We investigate how domestic institutions such as elections, lobbies, and parties influence policy choices. In the next phase, we move from a domestic focus to one that introduces policy-interactions across borders, focusing on the role of the international trade-regulating institutions such as the GATT/WTO and preferential trading arrangements.

M2856.001400 중앙-지방 관계 3-3-0
Central-local Relations

M2856.001500 국제통상정책론 3-3-0
International Trade Policy
석사과정(Master’s Courses)

925.501 공기업조사통계 3-2-2

Statistics for Public Enterprise Management

공기업 경영 및 의사결정과 관련한 다양한 경영통계의 구축, 활용, 해석 및 관련 통계적 능력을 배양하고자 하여, 이를 위해 spreadsheet과 DB를 활용하는 실습이 이루어질 것이다.

This course is structured to understand, use, and interpret the statistical and quantitative data on public enterprise management and economies. Lab-practice will be combined for various practical applications to spreadsheet and database in addition to the regular weekly lecture.

925.502 공기업정책론 3-3-0

Policy of Public Enterprises

공기업의 공공경제학적 본질과 성격을 이해한 후, 공기업의 국민경제와 국가발전에 미치는 영향을 전략적 관점에서 학습하고, 공기업 부문이 국가발전 목표에 부합하는 정책 수단으로 적절히 활용될 수 있는 구상, 방안을 탐색하고자 한다. 이론과 실제의 정부와 공기업 간의 관계를 규율하는 정책, 공기업 지배구조, 요금관리, 경영평가, 불공정거래대책등 정부 규제와 공기업의 활동목표와는 밀접하게 관련한다. 근거적으로 공기업 정책의 중심인 공기업의 경영혁신, 제도, 인력을 토론해 보고자 한다.

This course aims to help students acquire the basic knowledge of public enterprises using public economics theory and to develop their problem solving ability. The course will include in-depth discussions on management innovation systems and strategies as well as privatization issues.

925.503 공기업조직·인사론 3-3-0

Management of Public Enterprises

이 과목은 미래의 공기업 최고관리자로서 갖춰야 할 조직관리능력을 사례분석을 통해 합당함을 위한 과목이다. 이 과목에서는 공기업 조직관리의 일환이기 때문에 실제 우리나라 공기업조직의 문제해결에 어떻게 적용되고 있으며, 적용의 실용성과 성공의 원인들에 무엇인지를 사례학습을 통해 탐색한다. 학습주제의 범위는 정책관리, 목표관리, 환경관리, 구조관계, 내부자원관리, 변화관리 등을 포함하며 특히 인적자원관리에 초점을 둔다.

This course aims to help students acquire the basic knowledge about organization theories and to develop their professional ability of managing public enterprises. The cases of public enterprise management are utilized for investigating various ways of managerial problem-solving and for discussing the factors of managerial success and failure in public enterprises. While the scope of themes includes the management of organizational goals, strategies, environment, structural elements, resources, and innovation, the primary focus will be on human resource management in public enterprises.

925.504A 공기업 재무회계 3-3-0

Financial Accounting

본 과목은 현재 공기업 재무회계 제도에 대한 이론적 내용과 실증적 사례분석을 통해 세금과 신한계와 형식으로 진행한다. 기초적으로 공공부문의 재무(재정)정책에 대한 배경지식과 현행 재무제에 대해 검토하고, 다양한 분석을 위한 다양한 예제와 기법과 새로운 이론들(BSC, Target Costing)을 학습한다. 이러한 과정을 통해 공기업의 재정관리에서의 기본적인 자질 함양을 목표로 한다.

This course covers theoretical and practical case study on the budget accounting of public enterprise through seminars and syndicates. Basically we review background knowledge and existing institutions about financial policy in public sector, and also study new analysis Method like BSC and Target Costing. In this process, essential requirements for middle managers of public enterprise will be developed.

925.505 공기업 경영전략 3-3-0

Public Enterprise Strategy

경영전략이란 경영자의 비전과 목적을 설정하고 이를 달성하기 위한 수단을 설정하는 과정으로, 기업의 장·단기적인 목표 달성에 위한 효율적·체계적 전략을 수립하는 과정이다. 사기업과 공기업은 조직적 측면에서의 경영목표와 재정구조 등 다양한 면에서 큰 차이를 보이며, 경영관리과정에서는 경영과 기업의 목표달성 임무를 통해 조직발전을 추구할 수 있다. 따라서 본 수업에서는 이러한 공기업과 관련된 제도이론과 사례분석을 통해 효과적인 공기업 경영전략 수립 방안을 탐색한다.

Management strategy is an established process systematic approach to enterprise’s vision and goal. Private and public sector are different in most aspects, but they both make a strategy for organizational development through agreement management and enterprise’s goal in the long run. Accordingly, this course tries to find a desirable management strategy through a variety of theories and case studies.

925.506 공기업과 성과관리 3-3-0

Performance Management in Public Sector

신공공관리론의 대두와 더불어 세계 각국의 공공분야는 급변하는 환경에 적응하고 새로운 서비스 신제품에 적극적으로 대응하기 위해 다양한 노력을 정계하고 있다. 또한 공공부문의 생산성을 조정하기 위해 성과관리를 제대로 하며, 급증하는 조직의 경제성 향상으로써 비효율성을 제거해야 고객만족을 제고하고자 한다. 본 강좌에서는 공공부문 성과관리의 이론적 논의 및 세계적 흐름을 조명하고, 분야별 생산성 측정수단과 재정방안을 검토한다. 또한 공기업의 경영권리, 경영평가 및 기관별 경영성과 평가 사례분석을 통해 정책 실효에 있어 시사점을 구축하고자 한다.

Assessing the effectiveness of public programs is the answer to many issues with which public officials are struggling. It is part of the effort to improve the productivity of public programs, a strategy to strengthen the coordination of different agencies and the programs they manage. And it is a critical element in the public’s discourse with their elected officials about the role and purpose of government programs. Assessing what performance management is, what it is best at, how to make it work, and what impacts it might have are the goals of the course. Students will learn about the context of performance management. They will develop skills in measuring public programs. And they will understand its role in the broader political framework of the government.
works in the local community. An opinion survey, deliberative public poll, and constructing network systems, citizen contact and methods of sharing ideas, public meaning of local community, local community governance topics as social responsibilities of a public enterprise, the importance of citizen contact on a local community level is an important task. In particular, with the recent localization trend, citizens who are both its customers and owners is an important issue. The characteristics, answering the question of how to approach the press and government, and media effects. The emergence of new media such as the Internet compounds its importance and proper use of diverse media is increasing, and the relationship among various stakeholders in society such as government, business, and the public enterprises. The seminar will collect and compare different cases that have come out from policy experiences.

Public Enterprise and Community

For a public enterprise that has corporate as well as public characteristics, answering the question of how to approach the press and government, and media effects. The emergence of new media such as the Internet compounds its importance and proper use of diverse media is increasing, and the relationship among various stakeholders in society such as government, business, and the public enterprises. The seminar will collect and compare different cases that have come out from policy experiences.

Public Enterprise and Communication

This course focuses on the role of communication in the relationship among various stakeholders in society such as the public, government, press, public and private enterprises, and interest groups. The importance of strategic communication and proper use of diverse media is increasing, and the emergence of new media such as the Internet compounds its significance. Special topics of the course include public opinion processes, public relations, media relations, the relationship between the press and government, and media effects.

Policy Making and Implementation of Public Enterprises in the Era of Governance

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Policy Process of Public Enterprise

Policy Making and Implementation of Public Enterprises in the Era of Governance

This course provides an overview of the stages of the policy process, policy tools and policy design, primary models of policy-making and behaviors of key policy actors. The course is to explore the following key areas: 1) why and how certain issues become subjects for policy-making and behaviors of key policy actors. The purpose of this lecture is to enhance understanding and application capabilities of advanced evaluation theories and methodologies based on the basis of evaluation. Main subjects covered are Using Program Theory and Logic Models in Evaluation, Logic Modeling Methods in Program Evaluation, Integrating Program Planning and Evaluation Using Logic Methods, Performance Measurement for Government & Nonprofit Organizations, Outcome and Impact Assessment, Applied Regression Analysis for Evaluation, Empowerment Evaluation, Building Organizational Capacity for Evaluation & Organizational Learning Through Evaluation, etc. Students are required to participate in Korean evaluation case development.

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로 도시 공공서비스가 민간영역에서 제공되고 있다. 그러나 서비스의 성격상 공공성을 확보하기 위한 제도 및 규제의 틀을 논의하는 데 강의의 초점이 있다. 본 강의는 이러한 공공갈등의 정책학의 측면에서 조사하고 심화하고 공공갈등의 적절이 관리하고 해소하여 공정성을 효과적으로 추진하는 방향을 모색한다. 이를 위해 공정정책의 개발 및 관리 기반을 갖추고, 공정관리 및 해소를 위한 다양한 전략을 비교, 검토한다. 이 세미나는 공공정책을 협력단결의 이행을 통해 미시적인 접근과 함께, 공정정책의 과정에서 보는 제도적 접근과 다양한 사회정의의 축소로 보는 이론적 전략을 간다.

이 과목은 정책학의 주요 개념들과 이론에 대해 보다 깊은 강의와 토론을 할애하여 학생들이 탄탄한 이론적 기반하에 공공간담 뿐만 아니라 공기업 정책과 관련된 정책연구에 기초를 다질 수 있도록 한다.

As democracy has been consolidated for the last two decades in Korea, social conflicts come to surface more often and serious than before. Social cost of such conflicts has risen very sharply. This seminar will examine social conflicts and its management than before. Social cost of such conflicts has risen very sharply. In the seminar, social conflict will be approached at the three different levels: micro, institutional and ideological.

The seminar will combine the formats of lectures, debates and practices.
ration under the circumstance of urbanization. In addition, this course covers issues related to privatization of urban services due to the recommendation of new public management. That is, this course discusses the regulatory framework for maintaining the public interest in the process of privatization.

M2089.000100 공기업 정책수단론 3-3-0

Public Enterprise and Policy Instruments

본 강좌는 공기업에서 어떤 정책수단이 사용되며, 이러한 정책수단을 어떻게 적절하게 설계하고 집행하는지 그리고 무슨 요인이 본 정책수단의 선택에 영향을 미치는지 소개하고자 한다. 첫째, 본 강좌는 먼저 정부의 직접점 정책수단, 실체형 및 절차형 정책수단, 시장형 및 비시장형 정책수단을 중심으로 다양한 형태의 정책수단 유형을 살펴보고자 한다. 둘째, 본 강좌는 어떤 기제가 정책수단을 효과적으로 작동시키는지 규범, 공공캠페인, 경제적 유인, 정보공개, 그리고 명령통제의 관점에서 탐색해 보고자 한다. 셋째, 본 강좌는 어떻게 정책수단의 차이에 따라 다른 정책결과들이 나오는지 국가별로 살펴보고자 한다. 마지막으로 본 강좌는 최근 정책수단의 연구결과에 따르는 정책수단혼합, 스마트기기와 결합된 이중정책수단, 그리고 각종 대안적 정책수단을 논의해보고자 한다.

This course introduces students with an understanding (1) what policy instruments are used in public enterprises, (2) how to design and implement them appropriately, and (3) what factors influences the selection of policy instruments. First, this course begins with an introduction of various types of policy instruments from direct- to indirect-government intervention tools, from substantive and procedural instruments, and market to non-market based tools. Second, this course also explores what mechanisms effectively operate policy instruments in terms of norms, public campaign, economic incentives, information disclosure, and command & control. Third, this course examines how different policy instruments generate different policy outcomes across various countries. Finally, this course discusses emerging research issues of policy instruments, including policy tool mixes, hybrid policy instruments with smart devices, and alternative policy instruments.

M2089.000200 시장과 정부 3-3-0

Market and Government

본 과목은 1960년대부터 지속된 한국의 경제성장에 대한 이해와 이러한 경제성장의 기제임으로 현재 당면한 한국경제의 과제들을 경제학적인 이론과 비교 연구를 통해 논의한다.

This course analyzes the economic development of Korea since 1960 in terms of proximate causes and fundamental causes and discusses economic policy issues facing the current Korean economy based on economic theories and comparative analyses.
학점구조는 "학점수-주당 강의시간-주당 실습시간"을 표시한다. 한 학기는 15주로 구성됨. (The first number means "credits"; the second number means "lecture hours" per week; and the final number means "laboratory hours" per week. 15 weeks make one semester.)

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**Research Methodology**

본 과목은 행정 및 정책 연구에 있어서 기초가 되는 방법론적 연구역량의 배양과 양질의 연구를 수행할 수 있는 연구설계의 논리와 유형을 이해하는데 목적이 있다. 이를 위해 과학적 실험연구의 논리에 대한 과학철학 논리를 소개하고, 대표적인 연구방법론으로서의 양적 접근법과 질적 접근법 간의 논쟁을 살펴봄으로써, 방법론적 다원주의와 분석적 다각성을 이해하고자 한다. 특히 각 주요법론이 보유하는 논리와 절차의 상이성에도 불구하고, 그 평가기준의 공통점이 존재하고 또한 바람직함을 살펴보자 한다. 또한 연구 설계의 중요성과 설계의 논리 구조와 방법을 소개함으로써 후에 질적/양적 방법론 학습의 기반을 마련하고자 한다.

The main theme of this course is to explore the theoretical foundation of research methodology for designing good policy inquiry. Especially the course attempts to bring in a lens to view various current research approaches as a continuum rather than as disjoint ones, and to emphasize the need of shared standards with diverse techniques to develop persuasive evidence. In doing so, it tries to introduce several selected themes in the philosophy of science, the debates between qualitative and quantitative research methods, and the logic of research design that are crucial in enhancing the research capability.

**Qualitative Research Methods for Social Sciences**

이 강의는 사회과학으로서 행정학 연구에서 질적 연구방법을 활용할 수 있도록 능력을 계발하는 데 목적이 있다. 우선 이론적 척도에서 질적 연구방법을 체계적으로 이해하고, 양적 연구방법과의 차이, 질적 연구 방법의 필요성을 탐구한다. 이에 대하여 질적 연구방법을 이용한 자료 수집 방법을 구체적으로 습득하는 데, 참여관찰, 심층면접, 의학적 문헌연구방법, 민속법, 언어분석 등을 습득한다. 아울러 현상학, 해석학, 포스트모더니즘, 비판이론 등의 이론적 계보도 학습한다.

This course, in several levels both theoretical and methodological in purpose. The course explores main interpretative approaches such as phenomenology, hermeneutics, postmodernism, and critical theory with an emphasis on practical issues. In this seminar, class participants will become familiar with the issues involved in collection and analysis of data using qualitative techniques. These include research designing, in-depth interviewing, participatory observation, ethnographic method, text analysis and a small-N comparative analysis. As the course objective, students are supposed to understand the differences between quantitative method and qualitative method and to be able to use, at least, one of research techniques.
Public Administration and Democracy

The course will examine the theories for the comparative organisations; contingency theory; organisation theory, with the typologies, methods and effectiveness of organisations; the criteria of comparative organisation research of various organisations. The following topics will be covered in this course: the criteria of comparative organisations; the typologies, methods and effectiveness of organisational research of various organisations. This course will cover the central issues, values, and controversies facing the contemporary public manager, and seek to enable students to appreciate, understand, and cope with the political nature and dynamics of public administration in a democratic society. The course provides students with an understanding of both the power of the administrative state and the political constraints imposed upon it. Particular emphasis will be placed on issues of accountability, equity, responsiveness, and the concept of the public interest.

921.728B 지방행정론  3-3-0
Local Administration Research

This is an intensified and developed course of the Local Administration at the master level. In addition to analyses of the local administrative process, it discusses local power structure and local governance, local democracy, local community participation, strategies for local community development and so on.

Research for Organizational Structure

The course will examine the theories for the comparative research of various organizations. The following topics will be covered in this course: the criteria of comparative organizations; the typologies, methods and effectiveness of organizations; contingency theory; organization theory, with the exception of decision making and organization psychology; theories of bureaucracy. The main objective of this course is to improve the ability to analyze organizational structure.

921.743 조직행태연구  3-3-0
Research for Organizational Behavior

This course is designed to provide students with an understanding of the institutional, political, and normative context of public management in a democratic political system. This course introduces students to the central issues, values, and controversies facing the contemporary public manager, and seeks to enable students to appreciate, understand, and cope with the political nature and dynamics of public administration in a democratic society. The course provides students with an understanding of both the power of the administrative state and the political constraints imposed upon it. Particular emphasis will be placed on issues of accountability, equity, responsiveness, and the concept of the public interest.

921.746 예산과정론  3-3-0
Theory of Budgeting Process

This is a doctoral seminar for learning and building theories in public administration research on the local government and the public administration in the state, civil, and public administration context based on the comparative analysis of budgetary processes. This course will deal with such aspects from the perspective of public policy, with special emphasis on the case of Korea. A comparative theory of budgetary processes will also be discussed.

Seminar in the State, Civil Society, and Public Administration

921.759A 국가행정론세미나  3-3-0

This course is a doctoral seminar for learning and building theories of Korean Government and Public Administration in the context of the state-civil society relations. Discussion topics include: the theories of the modern state and civil society and their relevancies in Korea; the state forms, functions, apparatus, autonomy, strength, hardness, capability, competitiveness, rise and fall; and such post-modern concepts as 'governmentality.' Each student is encouraged to design research frameworks for conducting research on his/her own specific subjects.
행정법과 행정제도에 대한 법정학적 접근을 통하여 현대행정 국가에 있어 법과 행정의 상호관계를 구명하고, 행정부문에서의 정책과 제도의 이론과 실제를 분석하고 검토한다. 행정에 관한 법과 제도의 형성과정과 실패학의 다양한 방법론을 사용하여 분석함으로써 단순히 기존의 행정법과 행정제도의 구조와 내용을 파악하는 수준을 넘어 입법수준에서 바람직한 행정법 제도를 수립·실험하기 위한 이론과 실험 양계의 차별적 조건들을 모색한다. 사회적 한계가 되었다고 되고 있는 주요한 행정법 제도를 대상으로 삼아 범죄 및 법정학적 논의를 진행한다.

이 과목은 행정학 연구를 시작하는 박사과정 학생들에게 행정 이론의 철학적 기반과 합의를 이해하도록 하기 위한 것이다. 존재론, 인식론, 인간관, 방법론 등 행정과학의 철학적 토대와 개인주의, 다단주의, 멀리적, 근원적, 계급이론 등 국가와 사회에 대한 철학적 토대 그리고 신일주의, 근대주의, 후기근대주의 등에 대해 학습한다. 이를 토대로 공공성, 국가성, 공익, 공공의존, 행정책임, 행정이념, 정책가치, 정지-행정이념권리론, (선)행정정의, 관제학, 신행정 정성, 신 공공관리론, 거버넌스, 포스트모던 행정이론 등 주요 행정학 개념과 페러디아이의 특성을 규명한다. 궁극적으로 수강생 스스로의 행정학 연구 루트를 구성하도록 유도한다.

본 과목은 조직학습 과정에서 조직학습과 진화의 문제를 다루고자 한다. 주요 강의내용은 bounded rationality, risk taking behavior, teams/partners, conflicts/politics, rule-following behavior, learning, evolution(variation/selection), ecologies of adaptation, ambiguity, decision engineering 등이다.

이 과목은 국가자원의 공공 및 민간부문 인적자원을 개발하고 인사관리하는 과정과 방법을 주로 다룬다. 우선 인적자원의 개념과 범위, 인적자원개발의 의의와 과정을 검토하고 국가인적자원개발의 기능을 정의·체계·사회·문화적 발전과 연관시켜 고찰한다. 다음으로 인적자원개발의 양상·채용·배정, 활용과 보존의 각 단계별 살펴보며 마지막으로 인사관리적 측면에서 모집, 선발, 배치, 근무성적 평정, 교육훈련, 승진·보수, 사기가리 등의 과제들을 다룬다.

이 과목은 행정법과 행정제도에 대한 법정학적 접근을 통하여 현대행정 국가에 있어 법과 행정의 상호관계를 구명하고, 행정부문에서의 정책과 제도의 이론과 실제를 분석하고 검토한다. 행정에 관한 법과 제도의 형성과정과 실패학의 다양한 방법론을 사용하여 분석함으로써 단순히 기존의 행정법과 행정제도의 구조와 내용을 파악하는 수준을 넘어 입법수준에서 바람직한 행정법 제도를 수립·실험하기 위한 이론과 실험 양계의 차별적 조건들을 모색한다. 사회적 한계가 되었다고 되고 있는 주요한 행정법 제도를 대상으로 삼아 범죄 및 법정학적 논의를 진행한다.

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lution (variation/selection), ecologies of adaptation, ambiguity, decision engineering, etc.

921.772 환경행동과 지속가능한 발전 3-3-0

Environment and Sustainable Development

This course was focused on the research methods and analytical topic of eco-innovation or green development, analyzing how scientific articles (or book chapters) of their own choice on the course they must write a paper in which they scrutinize a combination of different methods and theories. At the end of the positivistic and interpretative research traditions and ways to The course will have a strong methodological focus. Students economic development with special attention to innovation. amine policy responses to environmental problems caused by problems of environmental degradation. This course will ex-

921.777 공공관리실태연구 3-3-0

Empirical Research on Public Management

이 과목의 목표는 효과적인 공공관리에 관한 실험적 연구능력을 함양하는 것이다. 현대 정부가 정책목적을 달성하고 성과를 창출하는 데 있어 효과적인 공공관리의 역할은 필수적이다. 이 과목의 초점은 효과적 공공관리에 영향을 미치는 요인들에 관한 경험적 지식을 탐구하는 것이다. 이 과목에서는 수강생들이 조직 및 관리에 관한 일반이론과 실험연구에 필요한 방법론적 지식을 이미 습득하고 있다고 전제하고, 국내, 외 공공관리 실험연구문헌에 대한 심층적 토론과 미래 연구의지의 도색이 이루어진다.

This course intends to build professional capability to perform research for effective public management that is a critical determinant of performance in modern governments. Competent and proactive managers play key roles in buffering external influences and overcoming resource restraints, which often leads to high-performing public organizations. The focus of this course is on investigating empirical knowledge about the factors to determine the effectiveness of public management and the relationship between the quality of public management and the various dimensions of government performance. Courses on general theories of organization and on methodologies including quantitative analysis are prerequisite.

M2193.000700 정부회계 3-3-0

Government Accounting

이 과목은 중앙행정기관과 지방자치단체에서 발표하는 재무결산서를 분석한다. 이를 위해 정부에서 사용하는 회계기준과 각 재정 과목들에 대해 이해하고, 국가와 지방자치단체 재무보고서가 어떻게 다른지를 배우게 된다. 또한, 국가와 지방자치단체에 있는 재무 정보들을 활용하여 이러한 연구가 가능함지에 대해도 고찰한다.

The purpose of this course is to analyze financial statements of governments. Students will study specific accounting standards and individual accounts of government financial statements. Students will have a chance to research using financial information of governments.
Policy Evaluation Research

Policy Evaluation Research

The first part of this course will examine the general and conceptual issues in the instruments literature and the last part will review and discuss individual policy instruments. Issues to be examined include freedom of the press, democracy and role of the new electronic media. Topics regarding the traditional media, newspapers, magazines, broadcasting, the Internet and various modern communication technologies will also be discussed.

The purposes of this lecture are to enhance understanding and application capabilities of advanced evaluation theories and methodologies based on basics of evaluation. Main subjects covered are Using Program Theory and Logic Models in Evaluation, Logic Modeling Methods in Program Evaluation, Integrating Program Planning and Evaluation Using Logic Methods, Performance Measurement for Government & Nonprofit Organizations, Outcome and Impact Assessment, Logic Methods, Performance Measurement for Government & Organizational Learning Through Evaluation, etc. Students are required to participate in Korean evaluation case development.

Research on Policy Instruments

This seminar considers policy choices and legal problems in the context of economic development and globalization. The second part of this course will examine the general and conceptual issues in the instruments literature and the last will review and discuss individual policy instruments.
the quality of evidence. The seminar considers topics regarding the ownership regulation, contents regulation, convergence and policymaking, class to them.

924.733 환경문제와 글로벌 거버넌스 3-3-0

Environmental Issues and Global Governance

본 강의는 환경문제와 국제관계에 대한 세미나이다. 환경문제를 아우르는 국제관계와 기후변화에 관한 연구가 진행되고 있으며, 글로벌 거버넌스의 역할과 필요성이 강조되고 있다. 환경문제는 국제적인 문제로, 국경을 초월한 문제로 인해 국제적인 협력과 대안이 필요하다.

924.747 정책과정이론연구 3-3-0

Research for Policy Process Theory

정책의 성공과 실패를 좌우하는 가장 큰 요소 중 하나로 정책실행과정이 있다. 이 과목에서는 정책의 실행과정과 관련된 이론과 방법을 연구하고자 한다. 정책실행과정은 정책의 첫 번째 단계이며, 정책의 성공과 실패를很大程度으로 좌우한다.

924.748 정책문제연구 3-3-0

Studies in Policy Analysis

이 강의의 목표는 정책문제의 기초적인 이론과 방법에 대한 이해를 토대로 고급 정책문제와 정책과정에 대한 지식과 이해를 높일 수 있도록, 정책문제의 연구와 활용에 대한 이해를 제공하기 위해 설계되었다. 이 강의는 정책문제와 관련된 다양한 주제를 다루며, 정책과 관련된 다양한 이론과 방법을 소개하고 있다.
The proposes of this lecture are to enhance the students’ knowledge and understanding of advanced policy analysis theories and methodologies. Main categories covered in this subject are theories and techniques of causal analysis related with not fitting the policy needs, theories and techniques of priority setting of solution strategies for policy problems, theories and techniques for analyzing risk, costs and benefits of policy alternations, and other special policy analysis methodological issues. Main methodologies covered are statistical causal analysis, Fault Tree Analysis, Multi-Attribute Utility Theory, Quality Function Deployment, Concept-Mapping Techniques, Nonmarket Valuation Methods for Regulatory Impact Analysis including Stated Preference Methods, Revealed Preference Methods, Contingent Valuation Methods, etc. This lecture also will include special topics related with current policy analysis methodological issues.

924.758
Special Sector Policy Research

924.761
Research on the Regulatory Systems and Institutions

924.762
Studies in Communications Policy

The objective of this course is to cultivate the ability to do in-depth study of foreign policy at the graduate level. In accordance with the progress in globalization, this course seeks to overcome the limitations of the viewpoint that merely takes into account the managerial dimension and explore the foreign policies in practical fields. It will also do an intensive review and analysis of the relations between domestic and foreign policies, taking into consideration the globalization currently taking place.
이 과목은 전자정부의 출현 배경과 개념 그리고 이론적 논의를 시작으로 전자정부의 시각가치, 조직간 수평적·협력적 관계설정, 민영화와 아웃소싱, 온라인 시민참여, 논스톱서비스, 정보공개와 정보보호, 사이버정부, 온라인 성과평가 등의 주제를 다룬다. 그리고 온라인 네트워크로 시민사회와 기업과 연결된 정부의 미래 모습에서 세계화, 민주주의, 여와 평등 등의 행정·정치적 가치를 다룬다.

This course assumes the progress of government information toward electronic government. The progress changes government's operation, organization, and information system. The course teaches students the predicted future of the e-government and change strategies for resource, organization, and information system. It emphasizes the cooperation between government and private.

공공정책의 정치이론

공공정책은 시민들을 규제하거나 재화를 재분배하기도 한다. 이에 따라 공공정책이 추구하는 목적과 그것을 달성하려는 정책수단은 사회적, 정치적으로 합당한 것으로 받아들여져야 한다. 예를 들어 공공정책은 사회정의에 부합해야 하며, 모든 시민들에게 불평등하게 적용되어야 한다. 그러나 실제로는 최근의 보편적 복지정책 논쟁처럼 정책의 규범적·정치적·경제적 이해관계에 따라 정치적으로 공공정책의 정당성을 제시하는 현상이 발생한다. 공공정책이 합당한 규범적 근거를 갖지 못하면 사회적 갈등을 유발할 뿐만 아니라 해당 정책이 지속될 수도 없다. 이와 같은 문제의식에서 본 과목은 공공정책을 사회정의, 평등, 시민의 자유와 공공성 등의 현대 민주주의의 근간을 이루는 정치적 규범을 분석하고 이에 따라 다양한 공공정책의 규범적 정당성을 파악한다. 이와 함께 공론의 방법을 통한 신의, 공동체주의의 개인주의에 근거한 공공정책의 차이 등에 대해 분석한다.

Rationale of the Seminar

Public Policies regulate citizens and redistributes their private resources. For this reason, goals and instruments of public policies should be accepted as reasonable and justifiable in the society. For instance public policies should be impartial to everyone and not violate the principle of social justice. In reality, however, policy makers and the public alike are not seriously engaged in the discourse of public policy, and, instead, promote only their economic and political interest. However, public policies without solid normative grounds cannot achieve its aims or be sustainable. This seminar will try to address such challenges by going through political theories of public policies. In particular it will analyze issues on justice, equality and freedom. It also examines contrasting perspectives to political theories such as liberal ideas on freedom, communitarian theories of virtue and republican idea of citizens.
490,501 Environmental Planning and Design

Environmental Planning and Design

This course will provide an introduction to environmental applications studied in the Department of Environmental Planning and the Department of Landscape Architecture.

490,803 Reading and Research

This course is prerequisite for students in master’s and doctoral programs writing their theses.

M2195.000700 도시·환경 국제개발세미나 3-3-0

International Development Seminar on Urban and Regional Environment

This course makes plans and designs with the purpose of solving urban and environmental problems of specific area in developing countries. It aims at improving the professional competence and problem solving capacity based on real world experience through practical training of public agency, research institution, NGO, consulting firm, etc across the domestic and the abroad. The students should learn the knowledge and acquire the techniques in the workplace within the training period. The course credit will be given based on the internship report and open presentation.

M2097.000600 공간융복합연구방법 3-2-2

Spatially Integrated Research Methods

This course aims at improving the professional competence and problem solving capacity based on real world experience through practical training of public agency, research institution, NGO, consulting firm, etc across the domestic and the abroad. The students should learn the knowledge and acquire the techniques in the workplace within the training period. The course credit will be given based on the internship report and open presentation.
Planning Theory

This course explores the meaning and concept of public planning, as well as its historical background and development. It also discusses those issues which are related with the logical legitimacy and practical efficiency of public planning. Studying various theories in public planning in the 20th century is another objective of this course, which will be followed by the examination of the theories of governance and social capital in the future.

Geographic Information System

The purpose of this course is to provide students with the basic knowledge of GIS and cultivate students' ability to use GIS as an essential part of their projects in Korea. In the latter part of the course, students will be divided into two parts. The first part will cover topics in the fundamentals of GIS, construction of geographic DB's, spatial analysis methodologies, spatial decision support systems, and status of national and urban GIS development projects in Korea. In the latter part of the course, students will improve their ability to use GIS as an essential part of spatial decision support systems.

Statistical Methods for Planning

This course is designed to provide students with the basics of research design and quantitative analysis in spatial planning and social science. The goal of this course is to give an understanding of the use statistical methods to answer the questions of various problems in urban and regional scale. This course will cover the basics of theory and research design, including how to identify a viable research question, to formulate a theory and derive hypotheses. This course's emphasis will be on formulating problems as statistical models and the proper interpretation of analytic results. The course will consist of both lecture and lab. The lecture will focus on developing basic understanding of the purpose, rationale, and usage of the various statistical analyses. The lab's primary purpose is to provide students first-hand experience in conducting and interpreting multivariate statistical analyses using SPSS, STATA, HLM and other statistical software.
The world as a whole has entered a critical era where not only climate change mitigation but adaptation became a relevant policy alternative for its own survival and sustainability. Therefore, the purpose of this course is to understand the basic theory of climate change adaptation and to study diverse case studies on climate change adaptation strategies so that students can enhance their academic as well as practical capabilities on this important subject. It will help prospective students be able to design creative climate change adaptation and mitigation strategies for urban and regional planning. The course aims to provide a basic understanding of the whole concept of climate change adaptation and to study various case studies on climate change adaptation strategies so that students can enhance their academic as well as practical capabilities on this important subject. It will help prospective students be able to design creative climate change adaptation and mitigation strategies for urban and regional planning.

941.514B 도시·지역경제학 3-3-0

Urban and Regional Economics

도시·지역경제학의 기초 이론과 방법을 탐구한다. 경제학의 이론과 방법에 착안한 학생은 무론이고 그렇지 않은 학생이라도 도시·지역경제학의 다양한 이론을 습득할 수 있도록 과목을 운영한다. 이 과목에서 다루는 주제로는 심화적이고 핵심적인 도시·지역경제학의 기초를 담는 것도 중요한 목표이다. 도시공간 구조, 집합의 이론, 도시노동시장, 도시·지역경제학의 정책, 지방정부 등, 토지과 재산화, 도시의 삶과 환경, 도시공간관리, 도시·지역의 경제성장과 발전, 지역경제분석방법과 같은 주제를 핵심으로 연구한다.

This class is to provide basic theories and methodologies in urban and regional economics. The most important aims of the class is to enhance understanding on economics of students with background in economics or without it. Topics will be very parallel to the advanced class Studies in Urban and Regional Economics. Urban spatial structure, agglomeration economy, urban labor market, land and housing market and policy, theory of local government, land and property tax, urban quality of life and environment, urban growth management, urban and regional economic development and growth, regional science methods.

941.521B 토지이용계획론 3-3-0

Land Use Planning

이 과목은 도시계획에 필수적인 토지이용의 계획 및 실천에 필요한 이론과 방법론을 고찰함으로써 계획의 전반적 실용성을 배양하는 목적이 있다. 이를 위해 개인의 토지이용에 공공이 개입하는 논리, 각종 도시활동에 따른 다양한 토지이용수요의 예측, 계획 개발의 절차적 협동관계와 행정의 관계를 공간환경에 관한 사회적 요구 및 정책적 요건에 따라 설계므로 이시와 이론적 실용성을 검토하고 적용할 수 있도록 한다.

This course examines theories and methodologies of land use planning, which constitutes the core of urban planning. Major topics include the rationale of public intervention into land uses in the market, prediction of land use demand resulted from various urban activities, location allocation based upon planners’ value judgement on desirable spatial structure, and policy instruments to implement land use planning.

941.522 계획법 3-3-0

Planning Law

이 과목은 도시, 지역, 국토에 관한 제한 공간계획 및 집행을 담당하는 범혜법을 강화한다. 중앙정부 및 지방자치단체에 걸쳐 제정된 계획관계와 법체계 그리고 집행에는 행정체제의 실용적 및 정책적 요건을 스며들었다. 개발법의 내용 및 구조를 분석하고 그와 동시에 개발법 개선의 관계를 공간환경에 관한 사회적 요구 및 정책적 요건에 따라 그대로 실용적으로 계획활동의 범칙, 행정적 기반에 대한 체계적인 이해와 함께 사례적 변화에 따라 비합리적인 개발계획 및 제도를 발전시키지 않는 능력을 함양한다.

This course instructs legal and administrative framework for spatial planning at national, regional and local levels.
Korean laws on urban planning, land use control, urban development, metropolitan and regional planning, and national planning are analyzed in terms of their substantive and procedural structures. Individual laws as well as their relationships are examined in the political context of socio-economic and environmental needs of the times. Students are expected to gain a systematic and critical understanding of statutory, legal and administrative foundation upon which planning activities are formulated and restrained.

Planning History

이 과목은 도시개발 초기부터 현재에 이르기까지 동서양 도시 및 도시계획의 역사를 연구한다. 고대, 중세, 현재에 걸쳐 다양한 도시구조 및 형태를 만들어낸 도시계획의 변천사에 초점을 두는 한편 시대별 도시형성의 문화적, 역사적 배경을 함께 연구한다. 각 시대별 도시의 발전과정과 주요 도시계획 활동을 연구하고 이들이 각 시기의 건축, 예술, 기술, 정치, 사회성과 어떻게 연계되어 있는가에 관심을 둔다. 시기별로 주요한 도시계획 및 설계, 도시계획 및 설계사 등을 점검하고 이의 현대적 함의를 잇고 있다. 현대 도시계획의 특색, 변천사, 도시계획 및 설계사 등을 통해 도시계획에 대한 이해를 통해 계획가로서 올바른 역사지식과 시대정신을 배양한다.

This course explores the historical evolution of cities and city planning. Both Western and Eastern cities are examined from ancient to modern times. While the focus centers around the perspective of planning ideas, the understanding of the cultural and historical forces that shaped the structure of the great cities is emphasized. Also important is critical analyses of representative examples of city planning and its resultant urban manifestation in each time. While the focus centers on the questions of what economic activities are located where, why, and why. The course will provide theoretical understandings from ancient to modern times. While the focus centers on the perspectives and analytical tools in explaining the spatial structural changes observed in large metropolitan area over time. The aim of this course enhances planner's capabilities to plan and construct the better spatial structure for the improvement of human life in cities and regions.

Spatial Structures and Location

공간구조분석은 인간활동의 공간이용에 관한 연구이며, 따라서 가장 중요한 관심사는 인간활동의 핵심이라고 볼 수 있는 경제활동이 이에, 의 의도에 있어 있는 것이다. 이 과목에서는 도시계획학의 지식을 주도하는 다양한 산업활동의 접근과 도시계획에 따른 도시계획 구조를 이해하고 설명하는데 필요한 이론과 사례를 중심으로 가르침한다. 특히 최근에 관심되는 부동산의 공간구조의 특성과 변화를 설명할 수 있는 이론들과 분석방법도 검토하게 된다. 본 과목의 근본 목표는 도시의 삶을 위한 보다 바람직한 도시공간구조를 계획할 수 있는 계획가의 능력을 함양시키는데 있다.

The analysis of spatial structures is a study of the spatial use of human activities and the most important concern is the questions of what economic activities are located where and why. The course will provide theoretical understandings and special cases for the location of economic activities and spatial structures of cities according to urban growth. The course will explore the alternative perspectives and analytical tools in explaining the spatial structural changes observed in large metropolitan area over time. The aim of this course enhances planner’s capabilities to plan and construct the better spatial structure for the improvement of human life in cities and regions.
Regional Planning

This course is overview of the planning theories and practices at urban, regional and national levels. National physical planning is critically reviewed with the goal setting and strategies for sustainable national development and regional planning is focused on regional development theories and strategies which improve the quality of life of the residents. This course will introduce the integrated approach among economic, social, environment, land use, and transportation planning in attaining sustainable regional development. Thus this course provides the substantial theories and practices of regional economic and social development as well as examination of contemporary national and regional planning institutions and practical cases.

Land and Housing Policy

This course aims at enhancing planners’ capabilities to understand various land and housing policies and make a value judgement on their planning implications. It critically examines a variety of legislations and regulations related to land and housing markets, price system, transaction and ownership, urban development and redevelopment for housing supply, taxation and fees, housing unit size and tenure, and affordable housing and social welfare.

Urban Sociology

Urban studies must be, therefore, interdisciplinary in its approach. This course explores the various features of city and urban life, with a focus on its human and social aspects. The historical rise and development of cities, major sociological theories of cities, main characteristics and tendencies of contemporary cities, and urban problems of Korea will be mainly discussed in this course.

International Planning and Development

This course is overview of the theories and practices of planning and development at the urban, regional, national and international levels as both the profession and professional practitioners face new challenges posed by the forces of globalization crossing geographic, national and institutional borders in an increasingly urban world. It seeks to understand these challenges as it explores issues of spatial planning, economic development, environmental policy, housing, transport, and social inclusion. The impacts and development of planning globally will therefore be looked at through a different prism, especially in the developing world, where most of the growth is and continues to be. Evolution of development paradigms will be reviewed. It will examine the role, structure of institutions, the public sector and non-governmental organizations, as well as the roles of international development aid agencies and external institutions, and the various types of organizations that support them internally both at the local and national levels within these countries.

Seminar in Urban and Regional Issues

This course aims at enhancing planners’ capabilities to understand and cope with various urban and regional issues which derive from mega trends or current public concerns. It understands the challenges as it explores issues of spatial planning, economic development, environmental policy, housing, transport, and social inclusion. The impacts and development of planning globally will therefore be looked at through a different prism, especially in the developing world, where most of the growth is and continues to be. Evolution of development paradigms will be reviewed. It will examine the role, structure of institutions, the public sector and non-governmental organizations, as well as the roles of international development aid agencies and external institutions, and the various types of organizations that support them internally both at the local and national levels within these countries.

Social and Community Planning

This course aims at enhancing planners’ capabilities to understand and cope with various urban and regional issues which derive from mega trends or current public concerns. It is designed to make urban and regional planning flexible enough to deal with not only long-range comprehensive plan-making but also short-term strategic problem-solving in order to meet diverse social demands.
This course is an overview of the history and theory of community planning from the twentieth century to the present, focusing on planning programs, policies, and projects that affect neighborhoods and the well-being of inhabitants. It examines the initiatives of residents, community development corporations, city agencies and the state, as it explores interdisciplinary approaches (economic development, urban design, social service delivery, housing rehabilitation, community organization and empowerment) to the creation of sustainable communities.

Urban Planning and Design Workshop

Over 40 years of change has created new planning and design challenges that we must face head-on. This course will examine energy performance of different urban forms with a range of theoretical arguments, cutting-edge modeling tools and academic research. The course will introduce energy-oriented planning and design methods, global cultural and regulatory contexts. The course will further introduce energy-oriented planning and design methods, and the energy resilient and efficient urban development. This course aims to discuss in this course: transportation energy, building operations energy, embodied energy of buildings and infrastructures, and decentralized renewable energy. Cutting-edge urban scale energy modeling tools will be introduced to students and some of the tools will be tested in exercises to examine energy performance of different urban forms with global cultural and regulatory contexts. The course will further introduce energy-oriented planning and design methods, and the energy resilient and efficient urban development.

Urban Form and Energy

Today Korea is forced to change the urban planning paradigm based on ‘clean sweep of existing structure’. In the past 40 years many new towns in huge scales had been planned and constructed very fast. The main goal of such development was to solve housing shortage and to supply necessary urban infrastructures cheaply and effectively. Building cities was a planning issue rather than a design issue. Meanwhile Korea is well known as a country equipped with good public transportation facilities and other urban infrastructures. Many things are going to change: reduced migration into cities and birth rate, relocation of heavy industries to abroad etc. It is time to think about qualitative urban development assuming sensitive urban planning and design. Existing cities can be managed or developed step by step, improving the quality of everyday life. It is essential for sustainable urban development, saving the natural resources, preventing gentrification and giving more feeling of community. Preservation of some existing structures makes the urban history visible, new structures bring fresh look and sense of community organization and empowerment to the creation of sustainable communities.

Planning and Management of Smart City

ICT (Information and Communication Technology)의 광범위 활용에 의한 높은 효율성에 의한 신흥 도시는 스마트도시가 도시문제를 해결하는 대안으로서 학계의 주목을 받고 있으며, 본 교과목은 스마트도시를 거타한 핵심의 플랫폼이 동시에 그 결과물로 인식하고 바라봄.
This course will explore the economic principles necessary for understanding transportation. It will cover microeconomic theories that are a part of macroeconomics. To examine the use of basic economic concepts, economic studies on main traffic vehicles will be examined as well as the ensuing political issues and empirical discoveries.
Sustainable Transportation

People and processes, with a focus on efficient and sustainable movement of goods and people, are emphasized in this course. The role of rail transportation in sustainable development is also discussed. The methodologies and techniques for rail transportation planning, design, and operation are explored. The role of rail transport in sustainable development is also discussed.

Comprehensive topics such as railway planning, travel demand analysis, facilities and systems, and operation and maintenance are explored. The role of rail transport for the sustainable development is also discussed.
Climate change is the most important environmental problem in 21st century. This course aims to understand the present and the future of climate change as well as the cause of climate change and to explore appropriate ways to respond the problem. Furthermore, this course helps students understand the inter-relationships of climate change with energy consumption, economic growth and social equity, and stimulate students to think about how to solve climate change from the perspective of sustainable development. The issue of climate change requires international cooperation for mitigation and international as well as local efforts need to be paid for adoption. Therefore, this course examines international negotiation processes and international climate policies taken until now and compares individual country’s climate policies. Through these activities of exploration and comparison, implications for desirable policy directions and policy instruments will be delivered.
이 강의를 통하여 화학물질의 다매체 오염을 초래하는 이동, 분배, 축적, 분해 과정의 동역학(dynamics)을 이해할 수 있다. 이 강의를 통하여 화학물질의 다매체 오염을 초래하는 이동, 분배, 축적, 분해 과정의 동역학(dynamics)을 이해할 수 있다는 내용이 포함되어 있다.

Many hazardous chemicals contaminate all the media in the environment (e.g., air, water, soil, sediment, and ecosystems) regardless of the first medium that they are released into. The contamination often spreads from a local scale through to a regional or even wider scales depending on their environmental fate properties. Process dynamics of important environmental processes that govern the multi-media contamination are taught in the lecture including transport, partitioning, degradation, and accumulation.

The course surveys important issues in the environmental economics and policy of today. Real world issues as well as theoretical backgrounds will be equally emphasized. Throughout the course, I will focus on developing analytical capability in formulating environmental problems.

In addition to domestic environmental issues, international problems including transboundary pollution in the Northeast Asian region, global warming, trade and environment will also be discussed. Special topics in environmental economics, such as Green GDP, public disclosure of environmental information, and corporate social responsibility, will also be covered.

This course provides the rigorous introduction to the fundamental science of the environmental change needed to understand the climate change and environmental pollution from local to the globe. The focus will be on viewing the global change as a system, interactions between various components (e.g., atmosphere, biosphere, solid Earth, and ocean) and the forcing (e.g., human activity). The course provides students a basic understanding of global change so that they have a foundation for future study in the environmental science/policy/management. This course will invite many experts in the field of climate change and environmental pollutions.
Environmental Conservation and Management

This course will understand the properties and fundamentals of environmental destruction and problems resulted from economic development and urbanization and study the methodologies of environmental conservation and management. Topics will cover the conservation of man-made environments including urban ecosystems, urban landscape, historical landscape, and urban historic buildings; and natural environments such as river watersheds, coastal zones, nature and rural landscape, and management of lakes. Focus will be on planning and design techniques and environment management methodologies.

Urban Open Space Planning and Design

This studio course will improve urban environment by harmonizing artificial and natural environments. Students will be required to comprehend three areas of urban landscape architecture (nature within city, open space, and urban space) and will learn theories and skills to plan and design urban open spaces.

Environmental Design in History

This course is divided into two parts. Part I will explore the history of environmental design in the West. Examples of three fields of environmental design include landscape architecture, urban planning, urban design. Leading periods of each field will be introduced. Topics will cover gardens, parks, plazas, streets, and new towns. Part II will examine the history of environmental design in Asia, especially in Korea, China, and Japan. Focus will be on these countries' traditional gardens, their authors, and gardening theories.
This course offers a theoretical knowledge and practical solution concerning urban parks. It deals with diverse themes such as planning methods, management strategies, park planning and design cases, etc. In order to understand the broad context of urban parks, the evolution of urban parks will be reviewed. Multi-sector planning strategies will be examined based on legal and institutional frameworks and diverse stakeholders. Recent cases in public private partnership will be investigated.

The purpose of this class is to acquire various planning and design techniques to help students understand the core contents of landscape architecture and urban design. Students will learn the basic theories of spatial survey, investigation and analysis of natural, social and environmental elements around the campus sites and learn a series of methods and techniques for spatial planning and design.

Workshop for Ecological Process and Design

 본 과목은 조경계획을 위한 전체 요건으로서 대상지에 대한 이해 및 설계와의 상관성을 다룬다. 높이 지니는 가능성을 한계를 잃고 이해하기 위한 접근 태도와 안목에 대한 훈련, 그것을 위한 이론적 경계로서 생태 원리와 기법, 그리고 그에 입각한 과학적 방 법기로서 실천적 분석 과정과 방법의 교육 등이 주요 핵심 내용이다. 과학적 분석을 넘어선 생태-문화적 해석, 빗가 공간적 구성 요소 및 그들의 작동방식 등의 물리적 차원만이 아닌 정신적이고 심상적 인 의미구조의 묘사는 조경설계안을 풍요롭게 하기 위한 중요한 요건이다. 학생들은 기초 생태 문헌을 비롯한 대상지의 생태(Site ecology)에 대한 이론 및 분석기법을 학습하고 그것을 설계안으로 통합시키며 나가는 과정과 방법에 대한 학습을 하게 된다.

This course focuses on the relevancy of ecology to landscape design. Training the attitudes and the sense of discrimination to read the possibilities and constraints of the site, understanding the ecological principles and techniques as its theoretical base, and practicing the method and process for the scientific analysis of the site are the essential part of the course. Students will be asked to study both basic theories of ecology and the methods for analysis of site ecology, and finally to incorporate them into landscape design.

Environmental Landscape Major

본 과목은 도시환경 공학과, 인문학과, 도시환경공학과 전공자에게는 조경계획 및 설계, 도시환경공학 분야에 걸친 융복합적 기초지식이 요구된다. 본 수업은 학과목에서 조경 및 건축 관련 전공을 하지 않은 학생들을 대상으로 한다.

본 수업의 목적은 환경학과인 환경조경학과에서 다루고 있는 계획 및 설계와 관련된 기초지식과 기법을 습득함으로써, 관련 전공문들의 학문적 내용들에 대한 이해를 돕고 자신의 연구 관심 분야를 구체화시킬 수 있는 기반이 되는 것이다. 수강생들은 교 내 캠퍼스 등 실제 대상지로 자립-인문-사회적 요소 등을 직접 조사, 분석하고 이에 대한 기초 이론을 학습하며, 공학과 계획 설계시 열린 방법과 기술을 습득한다.

Landscape and urban design students are required to gain basic transdisciplinary knowledge that covers the fields of landscape architecture, planning and urban design. The class will be open to students who did not previously major in landscape architecture or architecture.

The purpose of this class is to acquire various planning and design techniques to help students understand the core contents of landscape architecture and urban design. Students will learn the basic theories of spatial survey, investigation and analysis of natural, social and environmental elements around the campus sites and learn a series of methods and techniques for spatial planning and design.
Korean landscape.

M0000.017900 조정세미나 2-2-0
Seminar in Landscape Architecture

조정의 학문적・예술적 기여에 관해 중요한 문제를 발재하고, 이를 단원별로 검토하는 세미나 과목이다. 토론이어야 하는 과제는 원칙적으로 학생들의 회망 연구과제를 기초로 확정한다.

This course will include presentations on important issues in academic and artistic crafts in landscape architecture and review of these issues by units. Discussion topics will be determined according to student demands.

M0000.018000 광역조경계획 4-4-0
Regional Landscape Planning

조정설계에서 주로 다루고 있는 단지규모보다는 헌선 지역의 대상지역 중 특히 개발적 인가 환경 문제가 있을 가능성이 높은 자연환경지역, 그리고 환경보전의 영역을 두어야 할 환경을 대상으로 하여 광역조경계획(Regional Landscape Planning)의 계획방법을 활용하여계획을 작성을 스튜디오 과목이다.

이 과목에서는 특히 환경정리 및 자연환경이 심각해지는 우려지역도 사용하여 환경정리가 이뤄질 가능성이 높은 단지계획들이 환경적으로 건전하고 지속가능한 개발(ESSD)이 될 수 있도록 환경정리 계획개발 대안을 발견하고 적용해보는 데 중점을 맞추고 있다. 본 스튜디오에서

는 국토환경종합계획, 환경보전도시(Ecopolis), 지속가능한 계획 및 설계(Sustainable planning and design), 생태환경계획, 그린네트워크계획, 국립공원, 도림공원, 그린벨트, 강유역개발, 썬라이프, 농촌지역계획, 슈퍼모바일 및 주변지역계획, 농촌_attempts의 문제들을 가지고 조경계획을 수립하고 그 관리방안을 모색할 것이다. 이 과목에서는 계획의 수립과정에서 지리정보체계GIS를 활용하여 대상지 분석을 하게 됨으로 GIS활용법을 자연스럽게 습득하게 된다.

By utilizing landscape planning methods, this studio course will formulate alternative plans for study areas on a regional scale rather than on a site scale in landscape design such as natural landscape areas vulnerable to environmental problems due to development and environments that need to be conserved. Focus will be on alternative plans for environmentally friendly development such as development projects that are sustainable for the achievement of ESSD in view of scientifically and technologically advanced planning. In recent years, along with the development of various environmental monitoring technologies, it has become possible to acquire high-quality environmental data in more efficient way and in a higher spatial-temporal scale. It is also expected that data collected in different environmental fields with different purposes and intensities will be used for environmental assessment by integrating and analyzing through big data technology. This course will introduce monitoring methodologies and techniques for various biological and abiotic factors in ecological environment, and discuss the usefulness and limitations of them through workshops.

Though this course, we will get a better understanding of environmental condition in the site is a prerequisite for better environmental planning. In recent years, along with the development of various environmental monitoring technologies, it has become possible to acquire high-quality environmental data in more efficient way and in a higher spatial-temporal scale. It is also expected that data collected in different environmental fields with different purposes and intensities will be used for environmental assessment by integrating and analyzing through big data technology. This course will introduce monitoring methodologies and techniques for various biological and abiotic factors in ecological environment, and discuss the usefulness and limitations of them through workshops. Though this course, we will get a better understanding of environmental data, and based on this, we will demonstrate better environmental assessment ways.

M0000.018100 생물다양성과 환경계획 2-2-0
Biodiversity and Environmental Planning

전지구적 생물다양성 위기에 따라 생물다양성 보전의 중요성이 지속적으로 늘고 있는 상황이다. 따라서 신규 개발사업은 물론 기존의 환경관리과정에서도 이에 따라 그 지역의 생물다양성과 인생가능성을 평가할 수 있으며 이에 기반한 복원방안을 제안할 수 있는 기반을 마련하기에 이 과정에서는 보전 대상인 복잡한 생태계를 생물서식지(habitat)의 개념으로 명확하게 치환하여 접근할 필요가 있으며, 이를 위해서는 서식지의 질과 공간특성, 관리계획에 대한 분석적 사고가 요구된다. 본 수업에서는 서식지 생태계형성과 방법론(HEP; Habitat Evaluation Procedure)을 활용하여 대상지의 생물과 환경조건 계획, 과학적 논거에 기초하여 스스로 생각해보고, 이를 어떻게 합리적으로 설득시킬 수 있을지를 토론하게 한다.

As the global biodiversity loss is accelerating, the conservation at the local level becomes important as well. Therefore, it is crucial how to assess and promote the local biodiversity of the area, not only in the new development projects but also the existing environmental management process. In this process, our understanding about the complex ecosystem needs to be simplified with the concept of habitat. For this, analytical thinking about the quality, spatial characteristics, and management plan of the habitat is required. In this course, using Habitat Evaluation Procedure (HEP), we will discuss the biodiversity conservation plan of the site based on the quantitative and scientific evidences, and discuss how to achieve the plan in a reasonable way.

M0000.018200 환경오너티와 평가 3-3-0
Environmental Monitoring and Assessment

Environmental Monitoring and Assessment

'대상지의 환경 상태를 과학적으로 진단하고 정확하게 평가하는 것은 더 나은 환경계획 수립을 위한 신진조건이다. 최근에는 다양한 환경오너티와 기술의 발전과 함께, 보다 높은 시각적 전개성에서 얻은 환경오너티를 보다 효율적으로 취득할 수 있게 되었다. 또한 다양한 환경문제에서 서로 다른 목적과 강도로 수집된 자료들을 통해 데이터를 통해 흐름. 분석적으로 환경 평가에 활용하는 것이 기대되고 있다. 본 수업에서는 이러한 환경오너티와 기술을 활용하여 대상지의 환경을 품목화하는 시간을 가진다. 이들 통해 수습자들은 환경오너티에 대한 이해를 높이고, 이를 바탕으로 보다 합리적인 환경평가방법을 고민하게 된다.

Scientific and accurate assessment of the environmental condition in the site is a prerequisite for better environmental planning. In recent years, along with the development of various environmental monitoring technologies, it has become possible to acquire high-quality environmental data in more efficient way and in a higher spatial-temporal scale. It is also expected that data collected in different environmental fields with different purposes and intensities will be used for environmental assessment by integrating and analyzing through big data technology. This course will introduce monitoring methodologies and techniques for various biological and abiotic factors in ecological environment, and discuss the usefulness and limitations of them through workshops. Though this course, we will get a better understanding of environmental data, and based on this, we will demonstrate better environmental assessment ways.
and conservation by exploring diverse topics in environmental and ecological planning. The course introduces a range of techniques and strategies for urban ecosystem resilience, environmental management and restoration, healthy environments, and natural hazard protection. The purpose of this course is to provide students with insight into the sustainability and rationality of spatial planning that responds to climate change and rapid urbanization.

**M0000.018400**

**조경식물소재 3-3-0**

**Plant Materials**

The course will provide students with knowledge on the use and management of landscape plant materials. This includes understanding the characteristics, ecological requirements, and management techniques such as pruning, fertilization, irrigation, pest control, and protection in winter.

**M0000.018600**

**여가공간설계 4-4-0**

**Leisure and Recreational Space Design**

This course will introduce the concept of cultural landscape in Korea. It will explore various meanings of landscape and the role of landscape design in shaping culture. The course will focus on understanding the cultural aspect of landscape design in Korea and its significance in contemporary society.
문화와 공간행태

Culutre and Spatial Behavior

본 과목에서는 인간이 공간을 이용하는 행태가 공간의 성숙에 따라 어떻게 다르게 나타나며 문화적 배경과 어떤 연관을 가지고 있는지를 알기 위해 공간유형별 이용행태와 문화와 환경행태와의 연관성에 대해서도 연구될 것이다. 아울러 지리적, 인지적, 환경행태별, 역사행태별에 대해 제계적 분석을 하며, 환경설계와 설계 지구 공간행태에 관련된 기초知이론을 습득토록 한다. 또한 앞으로는 사회화화와 기술변화에 따라 인간의 환경이용행태와 지역행태가 어떻게 변화해 감지에 대해서도 예측하게 보고, 사회화화에 따라 중요성이 높아지는 실비계획과 청소년계층의 심리적 특성에 대해서도 고찰해 본다.

이 과목은 문화와 문화환경의 개념을 이해하고, 최근 들어 이슈가 되고 있는 문화산업과 문화엔지니어링을 살펴본 후, 문화환경 설계 관련 위크숍을 실시한다. 학기 후반부에는 도시·문화정책과 관련된 도시·문화환경 및 이벤트를 알아보고, 전통 도심 및 새로이 조성되고 있는 도시·문화환경을 사회화화 연구한다.

This course will study basic skills such as understanding and drawing plans and acquire the ability to apply them to practical landscape design and planning. Students will study theories on construction. Field surveys will be followed to offer some experience in detail design and superintendence over actual construction.

도시환경설계전공(Urban Environmental Design Major)

Community Planning and Design

도시에 있어서 풍질 환경은 비교적 단시간 안에 구매 볼 수 있지만, 그 풍질 환경은 바람으로 영위되는 시민들의 행동과 생활은 반드시 비등한 단기간에 일정이 되지 않는다. 바로 이 점이 도시를 관리하고 설계함에 있어 재정적 문제는 최우선이며, 도시계획에 관한 나남이기도 한다. 본 과목은 이런 의미에서 ‘커뮤니티’의 계획과 설계를 연구하는 과목이며, 도시의 계획과 설계를 새롭게 접근하고자 하는 과목이다.

The physical environment of a city can be created in a short period but the diverse activities and lives of people in...
Urban Regeneration Studio

The course will deal with strategies and practical methods in order to revitalize the city by utilizing potentials in the existing urban areas. It aims to enhance the improved physical condition and social and economical opportunities for citizens. This course require a strategic multi-sectional approach making best use of public and private resources in a collaborative process.

Environmental Design Studio

This course analyzes the diverse systems that determine the built environment of the city to find alternative modes of urbanism. The studio will explore urban spatial typologies such as hakwon, convenience stores, mega-marts (Single Room Occupancies), rooftop rooms and their social, economic, cultural, political, environmental ecologies through the analysis of relevant built environments as a means to reveal the inherent spatial mechanisms of social inequalities, economic divides and political conflicts, mono cultural issues and advance alternative spatial scenarios based on the research. The course will cover methodologies of mapping and analysis of urban spatial systems and typologies, as well as spatial scenario design, planning techniques.
Urban Space Research Studio

Doors the urban environment are scattered throughout the world, it is not accidental; it is a pattern that sits on the substrate of a landscape. Landscape, then, is a system defined by climate, geology, soil, water, topography, vegetation, and patterns of human occupation. In particular older cities have a history of occupation that is still readable for its original connection with the natural landscape system. Some parts of the landscape were a good place to live, to put up markets or sacred sites and these still form the core of the city. Other elements of the landscape favored modern traffic systems or large scale housing projects for citizens with lower income.

This studio takes an existing urban situation as subject. After a thorough research into the urban landscape system of the subject site, the second half of the studio is devoted to design. How can we take advantage of the existing urban landscape system to increase meaning, identity, and resilience of future developments?

Residential Planning and Design

For past 20 years, academic and political interest in residential environment focused on special residential areas: inferior residence, traditional Korean-style housing areas, and apartments. This studio course will cover the most neglected problems in planning and design. Management for changes in general single houses will be examined from planning and design approaches. Students will connect practical planning and design through topics such as the creation of urban communities and neighborhoods.
 박사과정(Doctoral Courses)

941.696A 정치생태학 3-3-0

Political Ecology


This course aims to allow students to expand theoretical horizons to solve environmental problems based on their understanding of political ecology and diverse ecological discourses within the field. This course raises the following questions: What is the root cause of environmental problems? Who holds the ultimate power over the environment? How do existing policies and stakeholder interactions affect the use of environment by society? How do conflicts between conservation and development arise and become resolved? What role does social justice play in sustainability? How should society be reconfigured to increase ecological sustainability? The field of political ecology tries to understand the relationship society and the environment have had up until now, and is an interdisciplinary attempt to combine environmental science and social science in order to analyze the interaction occurring between a wide-variety of social organizations mediated by the environmental results of resource use and the dynamic relationship of society. As such, there are a wide-range of discourses that exist in the political ecology field. This course helps students to understand the mechanisms that trigger environmental destruction from local to global dimensions and provides instruction to figure out ways to solve them. This will be done by exploring diverse and complicated interlocking political, economic and social power relationships, which shape the relationship between human beings and nature, and diverse ecological discourses which provide a wide-variety of diagnoses and prescriptions for solving environmental problems. The first half of this course is dedicated to the introduction and understanding of the concept of political ecology and diverse ecological discourses, while the second half focuses on analysis and discussion on diverse environmental problems.

학점구조는 "학점수-주당 강의시간-주당 실습시간"을 표시한다. 한 학기는 15주로 구성됨. (The first number means "credits"; the second number means ‘lecture hours’ per week; and the final number means "laboratory hours" per week. 15 weeks make one semester.)
941.710C 부동산시장분석 3-3-0

Real Estate Market Analysis

본 과목은 주택시장과 상업용 부동산 시장 분석에 필요한 이론과 실제에 대한 강의이다. 도시 거리, 이론에 대한 강의를 시작으로 하여 주택시장(Macro Housing Market, Housing Market and Structure, Separation of Housing Market 등)을 강의한다. 과목의 주무리는 상업용 부동산(오피스 시장과 리테일 소상공인 시장)에 대한 분석을 강의하며, 구체적으로는 기업의 입주선호와 교외화 현상, 상업용 시장 분석(오피스 시장과 리테일 소상공인), 부동산 시장과 시간과 경제된 분석, 상업용 부동산 시장 예측 모형 등을 강의한다. 그 외에 REITs 시장 분석과 같은 부동산 금융에 대한 내용이 일부 참가한다. 수강생들은 부동산 시장에 영향을 주는 대내외적 요인들이 무엇이고, 이들이 부동산시장의 움직임에 어떤 영향을 주는지를 구체적인 자료를 바탕으로 이론적 측면에서 이해하게 된다.

This course applies economic theory and thinking to analyze the land and housing markets. Office market analysis will be included as well. Lectures will cover land price curve, housing market segregation, housing and office suburbanization, micro and macro analysis of housing market, macro analysis of non-residential property, real estate cycle and time-series analysis. Students will learn how real estate markets function and will be required to explore their own micro and macro analysis of housing market, real estate cycle, housing market segregation, housing and office sub-markets, etc. Lectures will cover land price curve, housing market segregation, housing and office suburbanization, micro and macro analysis of housing market, macro analysis of non-residential property, real estate cycle and time-series analysis. Students will learn how real estate markets function and will be required to explore their own macro and micro analysis of housing market, real estate cycle, housing market segregation, housing and office sub-markets, etc.

941.711B 도시·지역계획연구 3-3-0

Studies in Urban and Regional Planning

이 과목은 고려와 관행적으로 담습되어온 도시·지역계획의 한계와 문제점을 극복하고 시대적 변화에 맞추기 위한 새로운 도시·지역계획의 방향을 모색할 수 있는 계획가의 소양을 갖출 수 있도록 목적이 있다. 이를 위해 도시·지역계획의 논리적 중점을 제조하고, 전통적인 도시·지역계획의 실태를 비판하면서 고찰하며, 사회경제적 구조와 도시환경의 변화에 따른 계획의 새로운 패러다임 및 실천방안을 이론적·제도적 관점에서 다루게 된다.

This course aims at enhancing planners’ capabilities to find out the limitations of customary planning practices and seek new directions of urban and regional planning for the future. It attempts to re-establish the planning rationales, examines critically current planning practices, and suggests various alternative plan-making and implementation strategies from both theoretical and practical points of view.

941.715A 공간구조연구 3-3-0

Studies in Spatial Structure

이 과목에서는 도시의 성장과 발달에 따라 도시공간이 어떻게 구조화되는가에 대한 논리와 개발적성을 이해하는데 필요한 이론과 사례를 다루게 된다. 특히 도시·지역계획의 논리적 중점을 제조하고, 전통적인 도시·지역계획의 실태를 비판하면서 고찰하며, 사회경제적 구조와 도시환경의 변화에 따른 계획의 새로운 패러다임 및 실천방안을 이론적·제도적 관점에서 다루게 한다.

This course examines the theoretical structures and problems of urban transportation planning processes and the merits and demerits of practical models, study advanced theories in travel demand modeling, and investigate new trends in transportation studies.

941.721 환경생태연구 3-3-0

Studies in Environmental Ecology

과학생태학과 한국의 전통생태학의 개념과 연구방법론을 소개하고 환경을 관리하는 데 응용할 수 있는 방법을 익힌다.

In this course, students will understand the concepts and research methods of landscape ecology and Korean traditional ecology and practice ecological engineering approaches to environmental management.
facility requirement, impact fee, development exactions, special plan, TDR (Transfer of development right), PDR (purchase of development right) will be examined.

Urban growth management is representing recent trends to overcome traditional urban planning. This class reviews and discusses growth management's historical backgrounds, purposes, various tools, economic effects, institutional frame. Tools for growth management include urban growth boundary, public facility requirement, impact fee, development exactions, special plan, TDR (Transfer of development right), PDR (purchase of development right). Theories, practices, and implications for Korea will also be examined.

941.727 Transportation Policy

This course will examine the principal analytical techniques for dealing with problems caused by traffic congestion and alternative policies to alleviate them.

941.731 Mathematical Models Building in Planning

This course will examine the rationality and effectiveness of selected transportation policies on subjects such as public transportation, urban mass transit, car ownership, congestion charging, traffic safety, taxation in transportation, transportation administration, and investment decision that have been implemented at home and abroad; and draw lessons and logical foundation for successful policy-making from various past experiences.

941.735 Air Quality Modeling

This course will cover models as means of evaluating alternative policies in urban and regional planning.

941.741 Studies in Transportation Economics

This doctoral seminar will examine the contemporary theories and researches on urban development and regeneration. The seminar encourages the students to identify the researchable topics and to develop relevant research methodology through extensive readings and bibliographical studies. The seminar emphasizes the understanding of the socio-economic and political forces that generate the current urban change and development at global, regional and local levels.

941.744 Transportation Policy

Studies in Urban Development and Renewal

Fate and Transport Modeling for Assessing Exposure to Chemicals in the Environment

Urban Computing
of place and space 2) computer technologies 3) implementations of the final outcomes There will also be a sub-section (during the section in computer technologies) about advanced GIS, which will contain learning about spatial analysis and statistics. Database design. SQL, programming languages (HTML, JavaScript, XML) and spatial language tool (Google Maps programming) will also be covered during the computer technologies section.

941.748 도시·지역경제연구 3-3-0

Studies in Urban and Regional Economics

도시·지역경제학의 이론과 방법을 심화시켜 탐구하는 과목이 다. 단점도심보험, 트랜스다임보험이 비롯한 도시공간구조, 도시노동 시장, 토지·주택시장, 지방정부(지방정부의 의사결정, 재정, 지방세제), 토지 이용규제와 상생관계, 도시의 삶의 질과 환경, 지역경제의 구성, 지역과학방법론(산업인건부분, 사회계정행렬, 연산기능 일반리형목록, 지역경제의 생산성과 성장에 관한 논의를 다룬다.

This course focuses on advanced topics in urban and regional economics. Topics include: urban spatial structure, urban labor market, land and housing market, local government (decision process, public finance and taxation), land use regulation and urban growth management, urban quality of life and environment, structure of regional economy, regional science methodology (Input-Output analysis, Social Accounting Matrix, Computable General Equilibrium Model), regional economy's productivity and growth. Econometric modelling and applications for urban and regional economics will also be discussed.

941.749A 공간의 문화사회학 3-3-0

Cultural Sociology of Space

도시 특유의 다양한 문화적 장소 및 문화적 공간에 대한 사회학적 고찰을 통해 궁극적으로는 사회·문화적 차원의 공공재가 지향해야 할 가치와 목표, 방법 등을 깊이 생각하는 데 기여하고자 하는 과목이다. 문화의 대상이 된 공간형태는 주거, 상업, 레저, 수박, 휴식, 공원, 교통, 학술 등 도시의 일상적 삶의 영역 전반에 걸쳐 있으며 이들 곳에서의 수박, 레저, 휴식, 공원, 교통, 학술, 공원, 휴식 등이 중심적으로 분석될 것이다.

By encouraging both the socio-cultural imaginations of space and spatial imaginations of socio-cultural sites, this class aims at increasing the background knowledge regarding urban socio-cultural planning. This course will be cover various and diverse sites in everyday life of ordinary people, including apartment, factory, department store, hotel, convenience store, gallery, concert hall, library, museum, stadium, and transportation facilities.

941.750 생지화학 3-3-0

Biogeochemistry

환경의 화학적 변화를 추적 하는 것은 생태계가 어떻게 작동하는지를 이해하는데 도움을 준다. 이 과목에서는 생물학적, 지구 화학적, 물리적, 그리고 화학적 반응과 과정이 환경에 어떤 화학적 변화를 가져오는지를 다룬다. "생지화학"이라는 이름에서 명확하 게 보이지듯이 이 과목은 전통적인 학제를 연결하여 배우는 다학 제적인 과목이다. 이 과목의 목적은 자연적인 또는 인간에 의해 어떻게 지역 또는 지구생태계가 변화하는지 과학적으로 이해하고, 그 과학적 이해를 토대로 인류가 새롭게 직면하는 환경문제에 답 을 얻을 수 있도록 함에 있다.

Tracking chemical changes of our environment helps us understand how ecosystems function. This course covers the chemical changes of our environment, which are affected by biological, geological, physical, and chemical reactions and processes. As it is clear by the title, biogeochemistry, this is an interdisciplinary course of traditional subjects. The objective of this class is to understand how ecosystems change by both naturally and anthropogenically, from small water-sheds to the global scale, and to apply that knowledge to provide solutions to environmental problems and challenges.

941.751 지속가능한 에너지 정책과 계획 3-3-0

Sustainable Energy Policy and Planning

이 강좌는 현재 중요하게 제기되고 있는 에너지 관련 쟁점들을 검토하고 에너지문제를 해결하기 위해 수립·이행되어야 에너지 정책을 살펴보며 지속가능한 사회를 실현하기 위해 요구되는 에너지 정책과 계획을 모색할 목록을 도출한다. 강의는 크게 네 부분으로 구성된다. 첫째, 에너지 정책과 계획에 대한 이해는 수원 에너지의 역할과 의미에 대한 이해를 기초로 하고 에너지 정책에 대한 기초적 지식을 확보할 수 있도록 한 과정으로 한다. 둘째, 공정과 정의, 사회, 경제, 과학기술, 자원, 환경의 관련성에 대해 탐색한다. 세째, 인류의 역사를 통해 에너지가 사회 안에서 어떻게 이용이 있 는지를 살펴보고 현대 사회와 에너지라는 이의 영역이 있었는지 에너지와 정책, 사회, 경제, 과학기술, 자원, 환경의 관리성과 중심으로 탐색한다. 넷째, 이러한 과정을 통해 에너지(energy)가 환경(environment), 경제(economy), 형평성(equity)과의 관계를 고찰 할 때 지속가능한 발전의 가능성을 이해한다. 셋째, 석유정점 (peak oil) 문제를 비롯한 석유자원의 고갈문제나 화석연료의 인 소로부터 유발되는 기후변화의 문제, 국제 석유시장의 문제 등 국제적인 에너지문제들을 검토한다. 넷째, 시기별 국가별 다양 한 에너지정책을 검토하면서 에너지정책의 내용을 이해하고 에너 지정책이 어떤 과정과 누군가의 참여를 통해 수립되는지, 에너지가 결정된 것은 어떤 내용으로 어떻게 결정되어왔는지, 에너지정책 결정 주요주자는 누구인지 등을 통해 에너지정책의 결정과 정책에 대해 이해하도록 한다. 아울러 한국의 에너지정책의 시기별로 어떻게 변화되어 왔는지 역사적으론 고찰하고 현 에너지정책을 검토하면서 해결해야 할 과제들을 도출하고 누군가가 어떤 Affordable, access, reach, 액세스 석유정점 문제율을 이해하고 에너지정책에 주요한 정책들을 이를 위해 요구되는 에너지정책은 무엇인가에 대해 설명한다. 수요성장은 이 과목을 통해 에너지와 관련된 기본개념과 에너지정책에 대한 기초지식을 풍부화하고 에너지정책의 주요한 정책들을 이해함으로써 에너지정책의 역량을 시도할 수 있는 능력을 가질 수 있게 될 것이다.

This course aims to review critical energy-related issues and energy policies, and consequently seeks to desirable energy policy and planning to realize sustainable society. This course is composed of four parts. First, since understanding of energy policy and planning requires fundamental concept and knowledge about energy, this course explores the meaning and role of energy, energy-related biophysical laws, definition about energy system and energy paradigm. Second, it reviews history of energy use in human society and the current status of energy mix and energy use in modern society, focused on the relationship between energy and other social dimensions such as politics, society, economy, environment, resources, science and technology. This work identifies pivotal interrelationship of E4, that is to say, energy, economy, environment and equity. Third, this course explores important global energy issues including peak oil, oil depletion, climate
change driven by fossil fuel combustion, global oil market, and so on. Fourth, this course studies energy policy-making processes, while exploring who participates in the processes, who are the main actors, how energy prices are determined, and what are main issues in energy decision-making and planning. In particular, this course inquires energy policies and policy-making processes in Korea. Consequently, this course will help students acquire energy-related basic concept and knowledge, understand energy-related issues and policies, and build capacity to analyze and suggest energy policies.

941.752 Seminar in Comparative Urban Planning and Design

This course aims to explore the potential and limits of science and technology in solving environmental and energy problems, which are two of the most crucial problems in 21st century, and examine the desirable development direction of science and technology toward sustainable development, while paying attention to the interrelationship between science, technology, energy, and the environment. This course will examine specifically how science and technology have contributed to solutions of energy and environmental problems throughout human history; what kind of problems the application of science and technology have brought to the environmental energy field; and what kind of policies are required to solve energy and environmental problems. The first half of the course introduces a number of theories that deal with the definition of science and technology and the inter-relationship of science, technology, energy, and the environment, and evaluates changes in human life and the environment. This process will allow students to understand the transformation of society and the environment, and also changes of public awareness driven by the development of science and technology. Furthermore, this exercise will help students develop a critical perspective toward the restoration and reversibility of social and environmental soundness through science and technology. The second half of the course will explore controversial issues of science and technology concerning the environment and energy and then strive to find alternative ways of making science and development more “green” and democratic that can contribute to sustainable development with minimal impact on the environment.
Theory of Urban Landscape Planning deals with urban landscape analysis and urban landscape research methods and case studies. Diverse aspects of landscape is to be explored in the course, The methods of urban image analysis, characteristics of landmark, planning and management of skyline, streetscape, waterfront landscape, cultural assets landscape is to be investigated in the subject. The development of scientific and reasonable methods and indices for the urban landscape planning will be focused on.

951.706 관광구성론 3-3-0

**Topics in Theory of Landscape Composition**

Landscape composition can be considered the complex result of progress or interaction of man and nature. Hence, the quality of a landscape changes according to time, place, the people who live on it, and their culture. Analysis and comprehension of formation, spatial structures in a natural or cultural landscape, through the exploration of these sequential changes, precede the creation and modification of real space as an ideal landscape. In this course, students will discuss the following issues and their solutions: characteristics and types of idealized landscape; interpretation of landscape aesthetics and visual balance through historical development; and visual perception and spatial molding in landscape composition like interpretation of space and structure.

951.706A 도시경관계획론 3-3-0

**Theory of Urban Landscape Planning**

This course will investigate a variety of methods to understand the landscape and landscape characteristics, which are the objects for the theory and design in landscape architecture. Objective evaluation and assessment methods of landscape quality and aesthetic values of landscape will be studied. The course will also cover technical problems related with landscape assessment, the meaning of landscape, and its interpretations.
and managing a recreational industry; and the recreational demand forecast method. Prerequisite: Recreation Planning and Design (942.550) (master’s program).

951.715A Contemporary Issues in Urban Design

本课程探讨的是城市中的一些重要问题，包括：(1) 检讨城市规划过程中的各种方法和策略；(2) 研究城市中的文化和社会现象。本课程旨在培养学生的批判性思维和解决问题的能力。

951.717A Advanced Study in Residential Environment

本课程是为准备进行住宅环境研究或设计而设计的。课程内容包括：(1) 住宅环境规划的理论和实践；(2) 建筑和景观设计的理论和实践。

951.723 Advanced Study in Landscape Materials and Construction

本课程是以景观材料和施工为主题，旨在培养学生的景观设计和施工技能。课程内容包括：(1) 景观材料的选择和使用；(2) 施工技术的理论和实践。

951.724 Research Methods in Landscape Architecture

本课程是为准备进行景观设计研究而设计的。课程内容包括：(1) 景观设计研究的理论和实践；(2) 研究方法的理论和实践。

951.725A Advanced Study in Architecture and Urbanism

本课程是为准备进行城市和建筑研究而设计的。课程内容包括：(1) 城市和建筑的理论和实践；(2) 城市和建筑的规划和设计。

951.729 Advanced Landscape Ecology

本课程是为准备进行景观生态学研究而设计的。课程内容包括：(1) 景观生态学的理论和实践；(2) 景观生态学的调查和分析。

- 944 -
This course are to investigate methodologies for the collection and analysis of natural environmental data by using field survey and remote sensing. Such methodologies provide the basis for the rational decision making processes. The first half of this course investigates methods of data collection with remote sensing, and the latter half covers spatial data analysis with GIS. The official language of this course is English, and students are required to use English for their PPT text. Those who have difficulty in English verbal presentation may use Korea for their presentation.

951.733 경관사상론 3-3-0
Readings in Landscape Thoughts

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951.732 환경보수집합기법연구 3-3-0
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951.735 조경계획 및 설계인론 3-3-0
Landscape Planning & Design Theory

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951.736 정성적 경관연구방법론 3-3-0
Qualitative Landscape Research Method

이 과목에서는 환경계획 및 설계의 기반을 이루는 문화경관의 현장연구를 위한 정성적 연구방법을 학습한다. 정성적 연구방법의 철학적 토대와 방향을 학습하고, 연구설계, 자료수집과 수집된 자료의 분석과 해석을 위한 기법을 연구한다. 주로 참여관찰, 참여 접근, 현장노트 기반방법을 현장실태를 통해 인식하고, 조사된 자료를 문화기술적 글로 변화시키는 방법을 학습한다. 더 나아가서 연구결과에 대해 환경계획 및 설계에 응용성을 학습한다.

The course will examine qualitative research methods appropriate for field work of cultural landscape which is a base of environmental planning and design. It analyzes the philosophical underpinnings and development of qualitative research methods. Critically the course examines qualitative research designs, data collection and methods for analysis and interpretation of landscapes. It focuses primarily on participant-observation, on asking questions, on writing field notes, and on the transformation of these primary field data into written ethnographic documents. The course further will explore applications of the research findings in environmental planning and design.

951.737 환경생태학특강 3-3-0
Advanced Topics in Environmental Ecology

본 과목은 환경생태학의 이론, 관측, 모형에 대한 심도 있는 주제들을 다룬다. 특히 대기계층, 식물, 토양에서 이어지는 탄소, 물, 영양물질의 순환에 대한 최근 연구들을 공부하며, 이러한 연구들을 조경계획, 설계, 관리에 적용하기 위한 방안들을 토의한다.

This course offers advanced topics in theory, observation and modeling of environmental ecology. In particular, this course covers water, carbon and nutrient cycles across planetary boundary layer, vegetation, and soils. Integration of the advanced knowledge in the biogeochemical cycles to the landscape planning, design and management is the final goal.

951.738 기후변화적응계획론 3-3-0
Advanced Study of Adaptation Planning for Climate Change

본 과목은 기후변화와 관련된 적응계획의 이론과 실제사례를 다룬다. 이론적 차원에서는 기후변화 시나리오(SRES, RCP)에 대한 정보, 위협성 평가 방법론, 기후변화 적응계획 수립에 대한 내용을 포함한다. 특히 최근 이슈화되고 있는 중장기사항을 정리함으로써 기후변화 적응계획에 대한 이해를 돕는다. 실제사례 연구에서는 국내외의 취약성 평가 및 기후변화 적응계획 수립의 사례를 분석하고, 사례에 대한 실질적인 평가 및 토의를 실시한다.

This course covers theoretical and practical examples of adaptation planning for climate change. This class contains a bunch of information such as climate change scenarios(SRES, RCP), methodologies of vulnerability assessment and adaptive management of climate change. Especially, this course will be focused on reviews on recent issues that could help you understand. We look forward to being able to analyze vulnerability assessment and adaptation planning for climate change for practical examples with profound discussions.

M2102.000300 재해분석과 환경복원계획 3-3-0
Disaster and Ecological Restoration Field Lab

본 과목은 융합과목으로 아시아지역을 대상으로 재해에 대한 과학적인 분석과 생태공학적인 복원계획과 학습한다. 최근 기후변화로 인한 극한기상현상의 빈도와 강도가 기존에 따라 재해의 발생과 피해도 커져 있다. 특히 아시아지역은 비출혈 점진호화 및 태풍으로 인한 홍수, 사방재 현상의 자연재해로 인해 인명과 재산에 막대한 피해를 입고 있다. 이에 대처하기 위해서 엽 건설, 배수로 공사, 사방공사 등을 실시하였다. 그러나 이들은 많은 비용이 소요된다는 점, 자연을 파괴하는 개발행위라는 점, 일회용의 재해방지(사방공사) 효과만 갖는다는 점 등 문제점도 가지고 있다. 본 과목에서는 토목공학, 생태공학적인 대응방안이 아닌 환경복원을 통한 사방재제 대응방안을 계획하고 실행하는 과정을 고찰하고자 한다. 특히 환경복원을 통해 자연과의 조화, 생태계를 파괴하지 않는 방법에 초점을 맞추고, 환경복원의 효과를 이해하는데 초점을 둔다.

This class, convergence science, focusing on Asia regions, studies restoration planning processes and scientific analysis methods on natural disaster. In recent years, frequency and magnitude of extreme weather regarded to be growing. In line with that, occurrence and its damage are also reported to growing. Especially, due to the increased natural disasters in summer such as typhoon, landslide, and torrential rains, Asia regions are now having economic loss and lots of casualties. To adapt those situations, Asia regions put their efforts to build infrastructures including dam, drainage and erosion-control walls. However, those practices have been criticized because of their requirement of much money, destruction of nature and limited effectiveness for just once of time. Therefore, this study aims to discuss planning and practicing methods to build adaptation plan based on environmental restoration mechanism, but not focusing on adaptation plan with regard to civil engineering or soil conservation engineering. Particularly, the class puts a strong emphasis on environmental restoration, which supports coordination with nature and method not harming ecosystem, to understand environmental restoration’s actual effectiveness.

M2195.000200 자원순환형 도시설계 연구 3-3-0
Studies in Urban Design and Resource Management

도시는 매 순간 쉬지 않고 에너지와 자원을 소비한다. 현재는 에너지와 자원의 생산, 소비, 그리고 소비결과 폐기라는 일방향적 에너지 흐름을 기반으로 도시가 유지되고 있다. 그러나 점차 증가하는
가고 있는 화석연료에서부터 현대의 도심 개발지에 이르기까지 여러 사항에 향후 도시에서의 삶을 재정하는 요소가 될 수 있다. 특히 단일 인구가 자연 조성소를 빠르게 증가하고 있는 많은 아시아 도시들은 향후 보다 지속가능한 인간의 활동을 위해 자연 순환형 도시로 전환할 필요가 있다. 본 수업은 도시설계, 개발, 자원이용, 지속가능한 기반시설, 도시 복원 등의 주제로 연구를 진행하고 있는 반사과정 학생들을 대상으로 하는 세미나 수업이다.

Cities constantly consume energy and resources. The flow of resource production, consumption, and disposal maintains the basic functioning of cities. However, a number of valuable resources ranging from diminished availability of fossil fuels to limited developable land in the urban regions may serve as a limiting factor for contemporary urban living. Especially in many Asian cities, per capita resource consumption is likely to increase rapidly, raising questions about the current mode of urbanization and urban development. This course is designed to help PhD students develop in-depth research on the issues of urban design, development, resource consumption, sustainable infrastructure management, and the restoration of deteriorated urban fabrics.

Studies in Green Infrastructure using Biogeochemistry Modeling

그린인프라스트럭처의 대표적인 구성요소는 식생과 토양이다. 식생은 습지를 통한 도시기후로부터 이산화탄소를 수용하고, 토양과 식생은 환경변화를 통해 이산화탄소를 대기기후로 돌려보낸다. 이와 같은 순환과정은 물, 에너지, 영양원 순환과도 연결되는 복잡한 메커니즘을 갖는다. 이 메커니즘을 명확하게 이해하기 위한 중요한 단계 중 하나가 생지화학 모델이다. 생지화학 모델은 탄소, 물, 질소, 인 등을 대기-식생-토양-수체계에서 순환하는 것을 이해하기 위해 널리 사용되는데 주로 자연생태계에서 생리 작용과 평가되었다. 세미나 형식으로 진행되는 본 수업에서 총 1) 복잡한 메커니즘을 갖는 생지화학 모델의 기본 개념을 이해하고, 2) 모델을 활용하여 그린인프라스트럭처에서 발생하는 생지화학 순환을 이해하며, 3) 그린인프라스트럭처 관리 및 조성에 생지화학모델이 활용될 수 있는 방안을 모색한다.

Soil and vegetation mainly form Green Infrastructure. Vegetation fixes atmospheric CO2 through photosynthesis whereas soil and vegetation return CO2 to the atmosphere through respiration. The carbon cycle is tightly coupled with water, energy, and nutrient cycles as well. Biogeochemistry modeling, which has been widely used in natural ecosystems, enables us to understand the complex mechanisms of carbon, water, energy and nutrient cycles in Green Infrastructure. This seminar course will equip students with the following focuses: 1) understanding principles in biogeochemistry modeling, 2) using biogeochemistry modeling to analyze water, carbon, nutrient and energy cycles in Green Infrastructure, and 3) investigating how biogeochemical modeling could contribute to management and planning in Green Infrastructure.

Theory of Contemporary Landscape Architecture

본 교과목에서는 현대조경과 관련된 이론과 비평을 다룬다. 강의와 토론은 20세기에까지 현대까지의 현대조경설계의 이론적 저작을 중심으로 진행된다. 수업내용은 조경가의 사상, 조경설계의 사회적 이해와 표현의 두 가지로 구분된다. 첫째, 조경가들의 작품에 주목하기보다 그들의 생각을 형성하고 구체화했던가에 주목한다. 조경가가 자신의 사고를 어떻게 구체화하였고, 작품에 반영된 사고를 탐색하고자 한다. 둘째, 현대조경설계의 관리된 사회적, 문화적 컨텍스트와 이론을 논의한다. 이를 통해 수작성이 조경설계를 위한 핵심적 비판적 사고를 습득하기를 희망한다.

This course explores contemporary theories and modes of critique concerning modern landscape and garden design. Lectures and discussions examine significant 20th and early 21st century theoretical writings and design ideas. It consists of two thematic parts regarding design treatments and key themes. First, it focuses on the thought process of landscape planners and designers rather than their landscape architecture works. How did they build their own intellectual constructs and how did they affect real world practices? Second, thematic issues in contemporary landscape are dealt with by exploring cultural and social contexts of design practices. The course encourages students to reflect and think critically about landscape architecture practices.

Writing landscape papers

As researchers, we are evaluated on the quality of papers. Writing good papers that get cited is essential to promote to the next career in academia. In this hands-on, flipped class, we will focus on writing as story telling, studying the key components of good landscape papers, and reviewing your peers’ writings. In particular, how to incorporate storytelling into Introduction, Methods, Results, Discussion and Conclusion will be discussed. Lectures and hand-on workshops are concurrently provided. Final product through this class is to make an international journal manuscript.

Economic Assessment of Green Infrastructure

도시 공원 및 오른 스페이스는 인간에게 심적·정신적 위안을 주고 도시의 환경과 생태계를 건강하게 유지시킴으로써 역할을 하고, 그 당위성은 경제적 논리에 밀려 도시 구성의 부차적 요소로 치부하기도 한다. 또한 재원 조달이 어렵고, 도시의 경제적 가치를 구현하는 과정이 과도한 부지 이용과 고용 창출 비용의 두 가지 문제를 겪고 있다. 그러나, 그들은 공원 및 오른 스페이스가 도시의 환경을 개선하여 사회, 경제적 가치를 부여하며 도시의 경제적 가치와 품위를 높일 수 있는 역할을 한다.

While aesthetic and environmental functions have long been recognized as a central as well as a unique role of
parks and open spaces, the lack of economic justification has always made them viewed as a secondary component of urban environment. Especially, tax money has become unreliable public resources increasingly, and land scarcity has been a critical issue in highly developed cities in realizing urban green spaces. In this course, students will learn basic finances in parks and open space procurement, as well as evaluate socioeconomic effects of those after the construction. In addition, alternative business model will be sought, which would enable urban parks and open spaces to become entrepreneurial economic entities that further generate jobs and incomes.

M2102.000600 응용조경통계 3-3-0

Statistics for Applied Research in Landscape Architecture

본 강좌는 협동과정조경학 전공자로서 요구되는 기본적 통계계식을 익히고 실제로 통계분석을 실시할 때 마주할 수 있는 문제점을 파악하여 이를 극복하는 데에 목적이 있다. 학생들은 주요 국제학술지에 게재된 논문에서 사용한 분석방법들을 배우고 실제로 자료를 취득하여 연습한다. 이를 통해 자료의 특성, 통계적 가정의 위반에 따른 자료변환 및 대안 분석방법들을 학습하고 이들의 한계를 이해하게 된다. 본 과목은 학술논문에서 연구결과 및 자료에 따라 바람직한 통계방법이 무엇이며 통계분석의 과정과 결과를 어떻게 전달해야 하는지에 관심이 있는 타학문 전공자에게 개방되어 있다.

This course aims to train students to understand basic statistical knowledge required in the Interdisciplinary Program in Landscape Architecture, to identify practical issues in their applications, and to use appropriate alternatives for addressing the issues. Throughout the semester, students learn major statistical analyses employed in research papers that have been published in top international journals and practice the analyses using data that are collected on their own. Accordingly, students should be able to understand data transformation and analytical tools according to the nature of the data and the violation of statistical assumptions, followed by the limitations of the transformed data and analytical methods. The course is open to other majors who are interested in which statistics to use according to their research questions and data and how to deliver the process and results of a statistical analysis.
국제 대학원
Graduate School of International Studies
공통과목(Core Courses)

875.512 국제경제관계의 이해 3-3-0

International Economic Relations

국가 간의 무역관계, 국가간의 거시경제적 관계, 국제통화제도 및 국제금융시장의 메커니즘을 설명하는 기초이론을 소개한다. 이 올리 국제경제관계의 흐름을 조망하여 이러한 변화의 동인을 분석 해보고 미래의 국제경제환경을 예측해 본다.

This course introduces students basic theories that explain (1) international trade relations among countries, (2) international macroeconomic relations, and (3) the operation of international monetary systems and financial markets. It provides a systematic exposition of principles and techniques of economic theory that are useful in analyzing economic aspects of trade negotiations. Furthermore, attention is given to various concepts of future international economic orders.

875.520 국제협력의 이해 3-3-0

International Cooperation

이 과목은 국제협력의 주요문제들을 분석하고 검토한다. 국제협력과 갈등의 역동성에 초점을 맞추면서 학생들은 먼저 국제협력연구에 주요 개념과 접근법을 숙지하며, 그 바탕 위에 국제협력과 갈등의 성과와 한계들을 평가한다. 세계정치체계의 변모, 국제안보, 외교정책의 경정, 국제경제의 정치, 국내정치와 국제협력의 관계 등의 주제들을 다룬다.

This course is designed as an advanced introduction to contemporary theories, debates, and major scholarly traditions in international relations. The primary concern of the course is to examine and assess contending theories of international relations and to logically answer some major international questions of contemporary relevance. The ultimate goal is to enhance students’s capacity to think critically about the basic forces that drive foreign policy and international politics, thereby improving their ability to evaluate important real-world issues.

875.532 동아시아지역의 이해 3-3-0

Understanding East Asia

이 과목은 동아시아에 대한 학계적인 이해를 목적으로 한다. 이 을 위해 현대 동아시아 형성의 역사적 역사를 우선 간단히 살펴보고, 이에 정치, 경제, 사회문화 그리고 주변의 중요한 이슈들 중으로 동아시아 3국, 즉 한국, 중국, 일본의 정치변화, 경제발전, 그리고 사회문화적 통합의 기본요소들을 비교한다. 구체적으로는 동아시아의 자본주의 및 사회주의의 발전과정, 동아시아에서 발전된 국가와 민주화의 문제, 이론적 가치의 중점으로 동아시아의 경제, 한국, 중국 일본에 있어서 자본주의 및 민주주의, 사회적 관계망 등에 대한 비교연구들이 다루어지게 될 것이며 동아시아의 변화를 보다 넓은 국제관계의 틀 속에서 조망해 보려는 노력도 시도될 것이다.

The purpose of this course is to familiarize students with key patterns in political change, economic development, and socio-cultural imagination in East Asia. The course briefly reviews the contemporary history of East Asia before moving on to different perspectives of economy and business, society, and politics. Topics include the development of East Asian capitalism, developmental states and democracy in East Asia, cultural understanding of Asian Values, and the concept of self and others in China, Japan, and Korea. The course will end with a consideration of recent social and political changes in East Asia that are aligned to international resources.

875.810 조사방법론 3-2-2

Research Methodology and Skills

본 강좌는 국제학과 국제지역학의 현안들을 분석하기에 필요한 도구들을 가르치는데 그 목적이 있다. 정치학의 첫 부분에서 학생들은 중요한 국제학 개념들을 배우고 예 살펴 볼 수 있도록 배분 한다. 정의의 위 부분에서 학생들은 여러 가지 지수와 통계치를 계산하는 방법과 국제지역학의 여러 변수간 관계를 분석하는 방법을 배울 것이다.

The objective of the course is to provide the students with the tools with which to analyze the issues in international and area studies. In the first part of the course, students will learn important concepts of statistics and acquire techniques to use Excel and other statistics program. In the second part, students will learn how to calculate useful indices and statistics as well as to analyze the relationship among various variables in international and area studies.

875.823 비교방법론 3-2-2

Comparative Methodology

이 과목은 여러 형태의 비교분석을 행할 수 있도록 마련되었다. 양적방법론 및 질적방법론과 함께 중요한 연구방법론의 하나인 이 "비교방법론" 을 통해서 학생들은 정리 상이한 조건에서도 동일한 결과가 나타나지, 또는 거의 비슷한 조건 가운데에서도 상이한 결과가 나타나는 경우들을 비교 분석할 수 있는 능력을 갖출 수 있다. 비교방법론은 전통시대 및 현대시대에도 모두 적용가능하며 분석의 단위가 개인, 사회, 사건, 제도 등 모든 영역을 단위로 이루어 진다.

This course introduces a comparative method as one of core methodologies at graduate level. Being a major methodology with quantitative and qualitative methodologies, this "Comparative Methodology" provides students a powerful tool to analyze the mechanism in which different outcomes result under similar conditions or similar outcomes are led under different situations. This methodology can be applied not only to traditional times but also to contemporary period. In addition, this comparative methodology can be applied to various research whose unit of the analysis is an individual, a society, an event or an institution.
International Financial World: Markets, Institutions and Policies

8751.511

International Financial World: Markets, Institutions and Policies

This course develops a systematic approach to analyzing trade negotiations and how to resolve disputes and make deals. This course will be one of the prerequisites for becoming an international specialist in the 21st century. It will cover not only macroeconomic and microeconomic aspects but also institutional aspects of the international financial market. Through combining theories and real practices in the international market, students will understand how the international financial market works, learn various kinds of financial products which are transacted internationally, and study international financial companies and related institutions. This course will be one of the prerequisites for becoming an international specialist in the 21st century.

8751.514

Multilateral Trade Negotiations: History and Major Rounds

8751.515

International Commerce 1

<International Commerce 1>

Through combining theories and real practices in the international market, students will understand how the international financial market works, learn various kinds of financial products which are transacted internationally, and study international financial companies and related institutions. This course will be one of the prerequisites for becoming an international specialist in the 21st century. It will cover not only macroeconomic and microeconomic aspects but also institutional aspects of the international financial market. Through combining theories and real practices in the international market, students will understand how the international financial market works, learn various kinds of financial products which are transacted internationally, and study international financial companies and related institutions. This course will be one of the prerequisites for becoming an international specialist in the 21st century.

8751.619A

Global Business Strategy

8751.620

International Commerce 2

<International Commerce 2>

Workshop in International Commerce 2
carefully structured negotiation exercises are conducted. Students analyze techniques of these exercises and discuss how they work.

8751.621A

International Business Relations

This course introduces students to the most fundamental and relevant elements of international business relationships. The emphasis of the course is on the complex web of relationships among countries and socio-cultural characteristics that influence business behavior and performance. This course deals with many real-world cases and examples, as well as conceptual models. Throughout the course, students will develop analytical skills which are absolutely crucial in understanding different types of international business.

8751.716

Special Studies in Trade Negotiations

This course addresses a wide variety of aspects of international trade negotiation. In particular, many new areas embraced within the WTO system such as agriculture, services, intellectual property protection are discussed with actual trade dispute cases.

8751.718

World Trade Organization & Multilateral Trade Agreements

This course covers the World Trade Organization (WTO) and multilateral trade agreements established through the Uruguay Round negotiations. Students will first overview the WTO and then focus on the final results of the Uruguay Round of multilateral trade negotiations in some detail. The multilateral trade agreements will be divided into four parts: trade in goods, trade in services, trade-related aspects of intellectual property rights, and institutional issues. Agreements on trade in goods are further divided into three subcategories: market access, customs-related issues, and trade rules. Lastly, this course will look at the future challenges faced by the current multilateral trading system. Although this course deals with trade agreements, it will put more emphasis on economic interpretation rather than the legal aspects. For this course, outside scholars and experts from policy, academic, and private sectors may be invited as special guest lecturers.

8751.803

Dissertation Research

The course is designed to provide a basic understanding of the linkage between the domestic and foreign economies through capital flows and to explain international macroeconomic policies to handle problems arising from the linkage. The course focuses on the second part and is interested in looking at economic phenomena such as capital movements, exchange rate, interest rates, and at their relations with macroeconomic policies.

8751.812

International Negotiation Simulation Game

This course offers instruction in key analytical, communicative,
tion, managerial and negotiation techniques and skills required for effective trade policy officials. It addresses strategic issues in bargaining and negotiation from a game theory perspective. Students participate in a variety of games focusing on strategic aspects of bargaining and negotiation. It examines the principle of negotiation in organizational settings and provides firsthand experience in simulated negotiations.

8751.814  
International Commerce 1  
Seminar in International Commerce 1  

This course is designed to address various analytical skills through case studies of major international financial events. Since this course is designed to address various analytical skills through case studies of major international financial events. Since this course is designed to address various analytical skills through case studies of major international financial events.

8751.821  
International Commerce 2  
Seminar in International Commerce 2  

The purpose of this course is to understand the nexus between theories and practices and to acquire the proper tools to analyze the possible practical situations in working places. The lecture content will be based on the experience of experts working in the field of international commerce. Students will have two hours’ practice of international commerce per week as the preparation for actual field experience.

8751.828  
Major Issues and Case Studies in International Finance  

The goal of this course is to pursue the advanced studies in theoretical models and empirical tools in understanding the process of economic growth and international development. The central question of this course is how to make poor countries rich. To answer this question, we try to understand the sources of the international differences in levels and rates of change of real income and the associated income distribution dynamics within as well as across countries. We learn about these issues by using both theoretical models and empirical data interactively in order to infer the policy implications for effective development of nations.

M2050.000200  
Advanced Topics in International Development  

The objective of this course is to pursue the advanced studies in theories and analysis of current issues in international development. We aim to learn various theories of economic development and apply them to understand the current policy issues and debates from those perspectives and also seek to find the relevant lessons for the development policies of current developing countries from the success and failure stories of development experience by comparing diverse paths of development. This way this course attempts to promote both academic and policy research ability in thinking about development issues. This course requires basic theoretical understanding as well as solid understanding of empirical research methods in international development as prerequisites.

M2050.000300  
International Development Cooperation Policy and System  

The objective of this course is to pursue the advanced studies in theories and analysis of current issues in international development. We aim to learn various theories of economic development and apply them to understand the current policy issues and debates from those perspectives and also seek to find the relevant lessons for the development policies of current developing countries from the success and failure stories of development experience by comparing diverse paths of development. This way this course attempts to promote both academic and policy research ability in thinking about development issues. This course requires basic theoretical understanding as well as solid understanding of empirical research methods in international development as prerequisites.
opment cooperation. We review how the international society of development cooperation has been formed and figure out the current situation of international development cooperation, and study various instruments of development cooperation such as knowledge sharing, triangular cooperation, development finance, PPP, and CSV. We study critical topics regarding the design of the system of international development cooperation and also set up the discussion sessions with development cooperation experts in order to deliver opportunities for the students to practice their real understanding from the course.

M2050.000400
International Development Classic Readings

This course aims to expand the academic horizon and the scope of real-life application for the international development issues by studying the classic books and original articles or the contemporary books which have great potential to become classic readings in international development area. From the careful and deep reading of those literature, we seek wisdom to find solutions and policy implications to the current development problems.
civil society for the previous paradigms of international politics. This course also reviews transnational security issues to understand newly emerging threats in the 21st century. Students are advised to think critically whether or not the global civil society will in fact be formed, and make the traditional ways of looking at international politics obsolete.

Understanding International Political Economy

This course explores the chaotic complexity of international politics in the aftermath of the Cold War. It examines both abiding and changing sources of international conflict, as well as the increasingly intricate patterns of interactions among the different sources. The course then addresses what should be done to prevent, manage, defuse, contain, settle and resolve violent conflicts, whether they occur at the interstate or intrastate level. It underscores various ways to manage conflicts such as preventive diplomacy, peacemaking, peacekeeping, post-conflict peacebuilding and use of force. The course combines a theoretical approach with detailed historical analysis of various cases. Based on theories, methods and techniques learned from the course, students are required to submit a research paper in which they analyze actual cases they have chosen and propose their own conflict management strategies.

Workshop in International Cooperation 2

As an extension of "International Cooperation Seminar 1", this course intends to enhance students understanding of various perspectives and advanced theories on the research of international cooperation and negotiation. Students are expected also to learn advanced knowledge on international cooperation and negotiation through analyzing actual cases based on the advanced theoretic analysis.

Global Social Governance

This seminar is designed to provide in-depth case studies of multilateral negotiating and decision-making processes at various international conferences, including the United Nations, on some of the important global issues and international crises. About a dozen such cases will be selected and assigned to students individually or in group, with the tasks of researching the proceedings of the relevant international conferences and examining all the documents, papers and articles related to the respective assignments in order to prepare themselves for class presentation, final examination and term paper.
The course discusses national and international security affairs in contemporary world politics with special focus on security issues surrounding the Korean peninsula. The lecture content will be based on the experience of experts working in the field of international cooperation and international relations. Students will have two hours' practice of international relations training per week as the preparation for actual field experience.

8752.814 Understanding International Human Rights and Refugee Issues

This course surveys international human rights norms and procedures, including detailed examination of global, regional, and national institutions to protect human rights. The course examines key contemporary concepts of human rights and the mechanisms of creating and enforcing human rights norms. Particular attention is paid to refugee issues, which has emerged one of the most serious human rights problems in the Post-Cold War world.

8752.815 Seminar in International Cooperation 1

This Seminar in International Cooperation 1 will examine multilateral negotiating and decision-making processes in the context of the forthcoming 57th session of the U.N. General Assembly which begins on Tuesday, 17 September 2002. About dozen agenda items selected from among the issues before the General Assembly this year will be assigned to students individually or in groups, depending on the size of the class. Students are required to follow and current proceedings of the relevant U.N. meetings and conferences, with a view to examining all relevant theories, and research methods.

8752.820 Seminar in International Cooperation 2

Seminar in International Cooperation 2 will focus on the experiences of international cooperation experts working in the field of international cooperation and international relations. Students will have two hours' practice of international relations training per week as the preparation for actual field experience.

8752.827 Research Project in International Cooperation

This course is designed to offer students in-depth knowledge and guidance regarding a subject given by a professor of International Cooperation Program. The subject may change depending upon the specialization of professors (i.e. globalization, international law) every semester, and students write in depth practice-oriented research papers. The professor teaches students how to use relevant theories, and research methods.

8752.829 East Asian National Security Strategy

First part of the course will study the history of war in East Asia since the late 19th century. Second part will discuss national security strategy of major East Asian countries including China, Japan, two Koreas, India, Taiwan and ASEAN countries.

M2051.00100 Understanding International Development Cooperation

This course is designed to deliver the various aspects of foundational theories, historical development, and practical policies in relations to international development cooperation. They includes the following four criteria: (i) international development theories (development economics, social development, political development, and anthropological perspectives); (ii) international development history since the Second World War; (iii) development policy transfers on the basis of actors including states, international aid agencies,
Increasing transnational migration generates very diverse sociocultural issues on a global scale. Transnational migration also often provides care workers and becomes a source of international marriage in many developed countries. This course approaches transnational migration in relation to various sociocultural issues such as identity, assimilation and social integration.

M2051.000600
Case Studies in International Dispute Settlement

M2051.000700
International Cooperation and Social and Economic Development

M2051.000800
State, Capital, and Labor in the Era of Globalization
This course aims to introduce students to recent research agendas in the field of comparative and international political economy, with a specific focus on labor, capital, inequality, and social policy. It analyzes a set of political and market institutions, the interactions among the state, capital, and labor, and the linkage between global challenges and national political economy. The first section of the class will cover the institutional foundations of capitalism and democracy. The second part of the course will analyze the varying role of state, capital and labor in advanced industrialized countries (e.g., Western Europe, North America, and part of East Asia) in explaining economic performance, inequality, redistribution, and political dynamics. The third part of the course will assess new challenges for global and national political economy, such as de-industrialization, immigration, and global investment.

M2190.000300

Social and Political Theories on International Development

This course is designed to introduce students to recent research agendas in the field of comparative and international political economy, with a specific focus on labor, capital, inequality, and social policy. It analyzes a set of political and market institutions, the interactions among the state, capital, and labor, and the linkage between global challenges and national political economy. The first section of the class will cover the institutional foundations of capitalism and democracy. The second part of the course will analyze the varying role of state, capital and labor in advanced industrialized countries (e.g., Western Europe, North America, and part of East Asia) in explaining economic performance, inequality, redistribution, and political dynamics. The third part of the course will assess new challenges for global and national political economy, such as de-industrialization, immigration, and global investment.

M2190.000400

Political Development and Economic Cooperation in East Asia

This course is designed to introduce students to recent research agendas in the field of comparative and international political economy, with a specific focus on labor, capital, inequality, and social policy. It analyzes a set of political and market institutions, the interactions among the state, capital, and labor, and the linkage between global challenges and national political economy. The first section of the class will cover the institutional foundations of capitalism and democracy. The second part of the course will analyze the varying role of state, capital and labor in advanced industrialized countries (e.g., Western Europe, North America, and part of East Asia) in explaining economic performance, inequality, redistribution, and political dynamics. The third part of the course will assess new challenges for global and national political economy, such as de-industrialization, immigration, and global investment.
transforming socialist countries. The final third part will explore some issues of international politics.

8753.594 地区研究指导 Seminar on Area Studies

This course is intended to make students familiar with the methodologies and theories in area studies, and to train them to synthesize large amount of informations and experiences about the field site.

8753.595A 东亚地区经济学的发展 Understanding East Asian Economic Development

This course is intended to provide knowledge of economic growth and development. In the first part, it will introduce a broad picture of the world economic growth and its long term evolution with human capital, distribution, and international cooperation. In the second half, it will touch on specific economies including the China, Japan, Korea, and other countries.

8753.596A 国际金融发展 Financial Development of World

This course is intended to explore the development of money, banking and finance in Europe, US and East Asia in comparative financial history perspective. Through this course, students are expected to understand different financial systems and financial crises of the world.

8753.614A 地区研究项目研究 Research Project in International Area Studies 2

The purpose of this course is to provide students with a unique research opportunity by assisting them in synthesizing their course work on various aspects and levels of development, as it relates to their chosen functional and regional focus. By requiring students to write a major seminar paper and to present it in class for discussion and critique, this course introduces students to a wide range of practical tools for project designing, monitoring, and evaluation for the practical studies of the different areas in the world.

8753.615 地区金融与货币一体化 Studies in Regional Monetary and Financial Integration

This course is intended to explore some issues of international politics. The final third part will synthesize large amount of informations and experiences about the field site.
8753.811 Comparative Studies in Regional Integration: The Case of Europe and Asia

This course is designed to familiarize students with the basic concepts, methodologies, and major issues of area studies, and their intellectual connections with other disciplines. In particular, this seminar is intended to emphasize the historical contexts of the development of “Area Studies.” Here the word, “context,” is being used in a double sense to mean both the socio-political circumstances of area studies and the intellectual exchanges with other disciplines. Topics include Orientalism and Occidentalism, the invention of “area”, interaction and confrontation between area studies and conventional disciplines, methods of area studies, area studies in the age of globalization, and ethical issues in area studies.

8753.816 Research Project in International Area Studies 3

The objective of this course is to provide students with a unique research opportunity by assisting them in synthesizing their course work on various aspects and levels of development, as it relates to their chosen functional and regional focus. By requiring students to write a major seminar paper and to present it in class for discussion and critique, this course tries to analyse the integration history, process, achievements, potentials and hurdles in both regions from multi-disciplinary viewpoints.

8753.880 Workshop in Global and Regional Issues

This course will be composed of invited lectures. Workshops in Global and Regional Issues is an annual series of invited lectures on contemporary issues in the East Asian region. The main focus of this course is on understanding and dealing with the major points of contemporary issues. The professor will arrange speakers and lead discussions.

8753.889 Understanding the Global Market and Marketing

The purpose of this course is to study the markets and marketing field. In this course, we will do a comparative study of the markets and global marketing strategies of Asian companies. We will be doing much case studies in this course. Weekly course requirements include analyzing cases and participating in class discussions.

8753.894A Topics in Area Studies

This seminar course is designed to familiarize students with the basic concepts, methodologies, and major issues of area studies, and their intellectual connections with other disciplines. In particular, this seminar is intended to emphasize the historical contexts of the development of “Area Studies.” Here the word, “context,” is being used in a double sense to mean both the socio-political circumstances of area studies and the intellectual exchanges with other disciplines. Topics include Orientalism and Occidentalism, the invention of “area”, interaction and confrontation between area studies and conventional disciplines, methods of area studies, area studies in the age of globalization, and ethical issues in area studies.

8753.896A Research Project in International Area Studies 1

This course is designed to familiarize students with the basic concepts, methodologies, and major issues of area studies, and their intellectual connections with other disciplines. In particular, this seminar is intended to emphasize the historical contexts of the development of “Area Studies.” Here the word, “context,” is being used in a double sense to mean both the socio-political circumstances of area studies and the intellectual exchanges with other disciplines. Topics include Orientalism and Occidentalism, the invention of “area”, interaction and confrontation between area studies and conventional disciplines, methods of area studies, area studies in the age of globalization, and ethical issues in area studies.
course introduces students to a wide range of practical tools for project designing, monitoring, and evaluation for the practical studies of contemporary Latin American economy.

8753.988 International Trade Issues in Comparative Perspective

International Trade Issues in Comparative Perspective

This course introduces students to a wide range of practical tools for project designing, monitoring, and evaluation for the practical studies of contemporary Latin American economy.

8753.542A Issues in the Contemporary Japanese Society

Issues in the Contemporary Japanese Society

This course introduces students to a wide range of practical tools for project designing, monitoring, and evaluation for the practical studies of contemporary Latin American economy.

8753.543 Banking and Finance in East Asia

Banking and Finance in East Asia

This course introduces students to a wide range of practical tools for project designing, monitoring, and evaluation for the practical studies of contemporary Latin American economy.

8753.541 Studies in Korea-Japan Relations

Studies in Korea-Japan Relations

This course introduces students to a wide range of practical tools for project designing, monitoring, and evaluation for the practical studies of contemporary Latin American economy.

8753.623 Study of China's Business Culture

Study of China's Business Culture

This course introduces students to a wide range of practical tools for project designing, monitoring, and evaluation for the practical studies of contemporary Latin American economy.
Chinese culture as practiced in the contemporary social context. The historical process of a socialist revolution since the establishment of the New China in 1949 is interpreted to have brought a radical change in the traditional social institutions and cultural system. Fieldwork in China since late 1980s, however, shows us that the basic social structure and cultural tradition are not easily changed simply by political ideology or legal institutions. As China had been closed to the outside world until recently, studies of China and the Chinese have been based primarily upon ideological propaganda and official data produced by the government, which describe the contemporary Chinese in political and economic contexts without serious consideration of them as cultural beings. Thus, this course tries to understand, from a social anthropological perspective, the experiences of social and cultural changes through the past fifty years of revolution on the one hand, and to develop a new perspective on and methods for Chinese studies on the other. To do this, traditional social institutions and cultural systems need to be understood in their relation to politics and economics before we examine their transformation processes and their meaning and function in the contemporary Chinese context.

The topics will include the following: perspectives of history, international relations, political economy, policy. Japanese politics will be analyzed through perspectives of history, international relations, political economy, policy. Japanese politics will be analyzed through perspectives of history, international relations, political economy, policy.

This seminar examines central aspects and significant results of China’s political reforms in the reform era. Special attention will be paid to such topics as the changing structure and operation of China’s political system, state’s roles in the economic development, changes of elite politics and leadership, shifting central-local relations, emerging entrepreneur class and its political implications, and prospect for China’s democratization.

This course overviews major issues in contemporary Japanese society and deals with modern problems such as population and family, social injustices and mobility, urbanization, deviant behavior and social control, religion, education, and collective behavior and social movements. Students also deal with many subjects that are essential in understanding contemporary Japanese culture, including the process of forming the Japanese culture, Japanese social structure, the cultural background of technological development, organizational or corporate culture, cultural identity, sex, gender, childbearing practices, culture change, ritual life, attitudes toward work and occupation, and Nihonjin-ron or thesis on the Japanese people. Much of the coursework will include case studies dealing with major aspects of Japanese culture.

This course deals with Japanese politics and foreign policy. Japanese politics will be analyzed through perspectives of history, international relations, political economy, and political process. The topics will include the following: Japan’s emergence as the first modern industrial state in East Asia in the 19th century; the effects of the Cold War and international relations on Japanese domestic politics and economy in the post-war period; the role of the state in the miraculous development of the contemporary Japanese economy; and the characteristics of the political parties, elections, interest groups, classes, and political culture in Japan. Students will also examine not only current Japanese foreign policy and its prospects for the future, but also Japan’s international behavior and policies in relation to its domestic political-economic system, as well as both the regional and global components of the international system as independent variables. In addition, an effort will be made to introduce students to contemporary theories of political economy, to assess their utility in understanding Japan’s foreign policy.

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Contrary to the prediction of globalization, firms of each country are very different. Through this course, students understand the reason by investigating structure, strategy, behavior and performance of many companies of Japan. Much of the coursework will include case studies. Students are required each week to analyze some cases as well as participate in class.

**8753.664A**  
아시아의 경제발전과 리더십 3-2-2  
Economic Development and Leadership in Asia

This course is mandatory for students who want to understand the development process of East Asian countries. The course will involve case studies of successful economic development in different East Asian countries. The first part will emphasize theoretical background, while the second half will focus on specific politicians and entrepreneurs focusing mostly on Asia.

**8753.666**  
동아시아국제관계의 이해 3-3-0  
Understanding International Relations in East Asia

This course aims at enhancing the level of understanding on the dynamics of international relations among East Asian countries. Mutual relations among countries like South and North Korea, Japan, China, and Taiwan will be analyzed both historically and structurally. Such analyses will be holistic ones, dealing not only with the political but also with economic, cultural, and social aspects. At the same time, significant attention will be given to the importance and influence of the U.S.A. and Russia. The course will deal with the contemporary international relations of East Asian countries since World War II, with special emphasis on the analysis of current issues. It will not be a one-way lecture course, but will invite active participation from the students. Student will be required not only to read the basic texts, but also to have done in-depth reading on his/her own interest areas. They will also be required to gather information and analyze recent issues through various forms of the media. The course will adopt the format of team-teaching and will invite specialists from various fields to lead it.

**8753.667A**  
동아시아민사회의 이해 3-3-0  
An Understanding Civil Societies in East Asia

This explores the origin and nature of civil society in East Asia. East Asian societies have experienced tremendous changes in the relationship between the state and the civil society. Due to the development of the civil society, diverse social organizations began to exert political influence on the state. Restructuring the politics as well as civil society itself. This course also focuses on comparing the different paths of the development of civil society across societies in East Asia.

**8753.677**  
동남아의 정치경제 3-3-0  
Political Economies of Southeast Asian

This seminar is an exploration of the inter-relationships between political and economic agents, actors, institutions, systems, and social processes in Southeast Asia, through a multi-disciplinary approach. We will read and engage with new political economy perspectives, in addition to historical, sociological, and anthropological studies on the social processes that influence the decisions of peasant farmers, household economic managers, local traders, governing elites, powerful interest groups and change agents in civil society, the private sector, and the government and state bureaucracy. Some of the thematic issues we will examine include: 1/ economic histories of Southeast Asian countries 2/rural development 3/the international migration process and labor mobility in the region, and how the social policy framework of the labor exporting states such as Indonesia and Philippines mediated the increase in labor mobility in a selective manner. (Last year the Indonesian Govt. expected $8 billion in remittance from Indonesian migrant workers). Such a perspective will also relate to similar issues in the Americas and Africa-Europe 4/gender and natural resource management 5/Focus on the energy industrial complex in the region, particularly the problem of predominantly supply-sided treatment of the energy issue, which hampers efforts to reframe the is-
sue in the context of social ecological recovery 6/the dynamics of the financial markets in the region.

8753.722 Workshop in China and World Economy

Current Issues in Chinese Society

This course examines central aspects of Chinese society and culture through reading recent studies on transformations in rural and urban Chinese society. While highlighting important social changes in PRC from its establishment in 1949 to the present, special attention will be given to the profound transformations that have taken place during the economic reform period. Particular attention will be paid to the issue of the reach of the state in social life, the rural-urban dichotomy, the rise of new gift economy, the emerging ethnic concerns based on the native-place identity, the role of middle class in the redefinition of a socialist system, and the rise of China's soft power. The readings area drawn from several disciplines including anthropology, history, political science, and sociology. The intention is to illustrate the necessity of a multi-disciplinary approach to the study of Chinese society and culture. Designed for post-graduate students across the disciplines, the seminar requires students to join with their own research projects.

8753.810 Theories and Issues in Contemporary Japanese Politics

This course is designed to survey the theories and issues in Japanese politics from a comparative perspective. Analyzing democracy, political party, elections and social and political movements from a critical standpoint is an integral part of this course. Students are expected to develop his or her thesis, after taking this course, taking a critical case study method.

8753.813 Minority in Contemporary Japan: History and Issues

This course studies on how China has changed its status in the World after taking open door and economic reform. Specifically, each student is required to research on specific problems in rural and urban Chinese society. While highlighting important social changes in PRC from its establishment in 1949 to the present, special attention will be given to the profound transformations that have taken place during the economic reform period. Particular attention will be paid to the issue of the reach of the state in social life, the rural-urban dichotomy, the rise of new gift economy, the emerging ethnic concerns based on the native-place identity, the role of middle class in the redefinition of a socialist system, and the rise of China's soft power. The readings area drawn from several disciplines including anthropology, history, political science, and sociology. The intention is to illustrate the necessity of a multi-disciplinary approach to the study of Chinese society and culture. Designed for post-graduate students across the disciplines, the seminar requires students to join with their own research projects.

8753.814 Comparative Studies in Korean and Japanese Firms

This course studies on how China has changed its status in the World after taking open door and economic reform. Specifically, each student is required to research on specific problems in rural and urban Chinese society. While highlighting important social changes in PRC from its establishment in 1949 to the present, special attention will be given to the profound transformations that have taken place during the economic reform period. Particular attention will be paid to the issue of the reach of the state in social life, the rural-urban dichotomy, the rise of new gift economy, the emerging ethnic concerns based on the native-place identity, the role of middle class in the redefinition of a socialist system, and the rise of China's soft power. The readings area drawn from several disciplines including anthropology, history, political science, and sociology. The intention is to illustrate the necessity of a multi-disciplinary approach to the study of Chinese society and culture. Designed for post-graduate students across the disciplines, the seminar requires students to join with their own research projects.
This course is intended to examine and compare the high-profile companies of Korea and Japan. Due to the similar industrial structure and corporate governance of the two countries, students can develop innovative views on corporate research by comparing specific firms in the same industry or by contrasting specific industries of the two countries. Based on the comparative study, students are expected to submit advanced academic papers.

**8753.890**  
Japanese Commerce and Distribution  
*Case Studies in Japanese Commerce and Distribution*

Due to the influence of information technology and globalization, increasing more attention is focused on Japanese commerce. The purpose of this course is to understand the basics of commerce and to analyze Japanese commerce and its distribution system. This course will help students acquire more practical and concrete knowledge about Japanese commerce and distribution by selecting and analyzing several cases of Japanese commercial companies.

**8753.892**  
East Asia: Its History and Policies  
*Current Issues in China's Foreign Relations*

This seminar is the first part of two seminars which explore the economic development and democratization in East Asia. This first seminar focuses on the economic development in East Asia in terms of comparative state perspective. In the first part of the course, main theories of developmental state, such as Chalmers Johnson, Peter Evans and Stephan Haggard, and the critiques on the theories will be examined. The second part will analyze case studies of East Asian countries, including Japan, South Korea, and Taiwan. The second seminar will examine democratization in East Asia in terms of comparative democratization.

**8753.772**  
Latin America: Its History and Policies  
*Economic Development of Latin America*

This course is designed to examine the formulation, implementation, and major issues of American foreign policy. A historical analysis of various aspects of foreign policy is provided, with a particular emphasis on important issues and events in the post-Cold War era. Development of Korean-American relations is also discussed in the course.
this course will include the following: economic development in history; theoretical and ideological dimensions of development strategy from inward-looking policy to trade liberalization; debt crisis; inflation and stabilization; economic populism; poverty; land reform; and recent regional integration schemes. The economic relationship between Korea and Latin America will be surveyed in the end.

8753.891A 현대 중남미 경제의 제조업 연습 3-2-2
Workshop in Contemporary Economic Issues in Latin America

This course is aimed at providing students with the comprehensive understanding of contemporary economic situations and issues in Latin America. In particular, it will deal with the big issues in Latin America such as structural reforms, currency crisis, dollarization, financial liberalization, regional integration. In addition, this course will examine the backgrounds or causes of the economic crisis in several Latin American countries such as Mexico, Brazil, their countermeasures to cope with the crisis, and the results.

8753.897 중남미 사회와 문화 3-3-0
Latin American Society and Culture

This course covers key social and cultural issues in Latin America which emerged from the modernization period of the 1930s, including population growth, urbanization, informal sector, religion and church, environmental crisis, drug issues and social movements.

8753.638 유럽통합의 과정과 이론 3-3-0
Theory and Process of European Integration

European Integration is bringing about great changes in the economic, social, and political development of Europe, and raises many important questions not only for Europe herself but also all around the world. This course examines the theories and practices of economic and monetary integration in Europe, giving an overview of the history of its process. Major themes to be covered are the history of European Construction, the macroeconomic perspectives on EMS and EMU, the political economy of the Single European Market, the industrial and competitive policies of EU, and many more related microeconomic issues.

8753.639A 유럽통합: 유럽연합의 법과 제도 3-3-0
European Integration: Law and Institutions of European Union

European Integration is bringing about great changes in the economic, social, and political development of Europe, and raises many important questions not only for Europe herself but also all around the world. This course examines the theories and practices of economic and monetary integration in Europe, giving an overview of the history of its process. Major themes to be covered are the history of European Construction, the macroeconomic perspectives on EMS and EMU, the political economy of the Single European Market, the industrial and competitive policies of EU, and many more related microeconomic issues.

<유럽지역>

8753.636 유럽연합의 정치적 발전 3-3-0
Political Development of the European Union

This course is intended to provide students a multi-faceted understanding of the political developments of the European Union. The major themes to be covered are the functioning of the EU institutions and decision-making processes, political forces governing the European Union and policies of the EU, and the significance of the EU for international and Korean politics. Through intensive multidisciplinary approaches to the subject and the active discussion on the various themes, students are expected to understand the current situation of the European Union today.
M2190.000900 유럽연합과 아시아의 거시경제학연습 3-2-2

Workshop in Macroeconomics of European Union and Asia

본 과목은 유럽과 세계경제에 대한 거시경제학적 지식을 제공하는 한편 이러한 이론적 바탕 위에 유럽경제의 역사적 전개과정을 살펴보는 것을 목적으로 한다. 본 과목은 특히 현 유럽경제의 출현을 가능케 한 제도적 특성을 밝히는 데 강조점을 둔다. 본 과목에서 다루는 주제들은 유럽경제성장의 패턴, 노동시장의 경직성과 실업문제, 인플레이션과 초인플레이션, 재정 및 금융정책, 경쟁 및 산업정책, 기업 지배구조 등을 포괄한다.

This course is intended to provide students basic macro-economic knowledge about European and world economy and to examine the historic development and transformation of the European economies. A particular emphasis is put on clarifying the institutional features that supported the emergence of current European economies. Major topics to be covered are diverse, ranging from patterns of European economic growth, labor market rigidity and unemployment issues, inflation and hyper-inflation problems, fiscal and monetary policies, competition and industrial policies, and corporate governance structure in Europe.
한국은 비유럽국가 가운데 가장 모범적으로 경제발전과 근대화를 이룩한 사회로 알려져 있다. 근대화와 경제발전을 이루는데 기여한 요소 가운데 하나는 휴먼 캐피탈이 어떻게 축적, 성취되었는지. 이 과정은 한국의 근대화와 경제발전을 이해하면서 1960년대 이래 한국사회에서 휴먼 캐피탈의 축적과 발전을 이해하고자 한다.

Korea is very well known for its achievement of modernization and economic growth among non-European societies within a very short time period. Many countries are concerned with the secrets of its success. One of them which contributed to rapid economic growth since 1960 is the accumulation and achievement of higher level of human capital in contemporary Korean society. This course provides an opportunity for students to understand modernization process in terms of successful accumulation and achievement of human capital in contemporary Korean society.

인권은 경제개발, 정치발전 등을 포함하는 사회개발의 핵심 요인이다. 수많은 국가에서 경제개발을 추진하면서 인권을 고려하지 않은 결과 오늘날 여러 형태의 발전을 이룩한 후에도 삶의 질의 향상을 위해서는 사회문제를 포함하고 있다. 정치, 경제, 사회개발을 추진하고, 완전한 의미의 개발을 성취할 수 있도록 국제개발협력이 있어서 인권을 우선적으로 고려해야 하는 필요성, 개념에 있어서 인간의 역할 등을 탐구하는 과목이다.

Human rights highlight the completion of development in any society. To achieve a balanced development in a society, it is necessary to guarantee human rights regardless of gender, age, class and ethnicity for all social members in a country. However, the issue of human rights is often neglected in dealing with social development up to now. This seminar provides an opportunity to understand the role and contribution of human rights to social development in a society.

한국은 높은 경제성장을 기록하고 민주화도 성취했지만 여전히 저소득층의 문제, 성평등, 인권, 빈곤, 환경, 교육, 노동여건, 건강 등을 포함한다. 이 과목은 특별히 아시아, 아프리카, 라틴아메리카의 국가들의 사례를 중심으로 경제적, 정치적 문제를 다룬다.

This course covers a wide spectrum of development policies that developing countries can introduce for their economic growth. These include trade policy, investment policy, financial policy, tax policy, industrial policy, technological policy, and monetary policy.

The course is designed to examine the situation of economic development in developing countries and cover the general problems of economic development, especially low-income ones. It focuses on the methodology of economic analysis of diverse issues related to economic development, economic growth and structural change such as population growth, migration, urbanization, poverty, health, education, workplace conditions and environment. The course emphasizes country cases throughout Asia, Africa, and Latin America in dealing with methodology of economic analysis of diverse development issues.
Global Development and Development Cooperation

This course introduces students to the principles and practices of international development cooperation and foreign aid. It explores the trends and characteristics of foreign aid and the influence of foreign aid on donor countries and recipient countries.

Transnational Migration and Development

Transnational migration is expanding in the era of globalization. Increasing transnational migration has affected development in both developing and developed countries.

History of African External Relations

Africology is the study of Africa and its external relations. This course examines the political, economic, and cultural aspects of Africa's interactions with external actors such as Europe, Middle East Asia, China, and numerous city states in East Africa.

Social Development and International Development Cooperation

This course is designed to introduce a new approach of social development to the existing economic growth-oriented paradigms in the field of international development cooperation. By presenting and comparing a variety of international organization dealing with social development programmes, this course aims to enhance both theoretical and practical learning effects on social development. The first part of the course will introduce norms and theories of social development which have been shared among international organizations, and the second part will lead to practical issues specializing in diverse agendas such as labor, human rights, local communities, immigration, environment issues, gender, and civil society.
However, the development of western colonialization distorted in many ways, especially ideological one, the true significance of the role of African history and it even further deteriorated Africa as a Terra Incognita or a Land of No History. A balanced and critical views on African history with its partners will be the prerequisite understanding for students who wish to study further Africa or to pursue a future professional engagement in African affairs. This course offers a thematic series of Africa’s external relations history ranging from development, trade, politics and diplomacy to provide students a solid basis for future African specialists.
<table>
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<th>Lab</th>
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<td>3-3-0</td>
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<td>8754.518</td>
<td>History of Korean Life Style</td>
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<td>8754.520</td>
<td>Introduction to Korean Studies</td>
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<td>8754.712</td>
<td>Korean Religion</td>
<td>3-2-2</td>
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**Korean History**

This course presents a general overview of Korean history and introduces students to Korean cultural history. It covers the characteristics of age-old Korean traditions they lived in, providing the students with a closer look at the living styles and patterns of the Korean people.

- This class will show students the typical clothes the Korean people usually wore, the foods they ate, and the residences they lived in, providing the students with a closer look at the living styles and patterns of the Korean people. Students will feel the characteristics of age-old Korean traditions not only through lecture, but through slide films.

**History of Korean Life Style**

This course intends to provide practical knowledge and deep insight of an economic policy-making process in Korea. The Korean government has made various kinds of policy formulation with consideration of each policy section. This course is designed to enhance students' understanding of North Korea's politics and economy as well as North Korean life style and reality. Emphasis is also placed on exploring similarities and differences between the North and South, and providing students with an opportunity to explore topics and strategies concerning unification.

- Economic Policies and Economic Development in Korea
  - This course intends to provide practical knowledge and deep insight of an economic policy-making process in Korea. The Korean government has made various kinds of policy formulation with consideration of each policy section. This course will show the process of coordinating economic policies among departments during the Korean economic development.

**Introduction to Korean Studies**

This course introduces important research results in Korean Studies, especially in the field of Humanities and Social Sciences. In this course, existing works on Korea by foreign scholars will also be examined. This course is taught by a team of professors from departments in the College of Humanities and Social Sciences.

- Korean Religion
  - This course offers students a comprehensive approach to diverse Korean religions. It is specially designed to cultivate, from a religious perspective, a deep understanding of human culture in South Korea.
이 과목은 한국 사회의 구조적 특성과 한국사회에 적용되어 온 이념의 문제를 포괄적으로 학습함을 목표로 한다. 특히, 근대화 이후 한국사회의 성격과 변화에 대한 이해가 포괄적으로 이루어질 수 있게 배려한다. 예를 들어, 학생들의 관심에 따라 주제가 바뀔 수 있다.

이 과목은 지도교수가 지정하는 참고문헌을 학생들이 읽고 연구함으로써 석사학위논문을 준비하는 토대를 마련할 수 있게 할 뿐 아니라, 학생들은 다음 정기 강의 시간에 이와 연계된 자료를 한층 더 충실히 할 수 있는 시간을 가질 수 있게 학습을 목표로 한다.

이 과목은 한국학을 가르쳐 보았거나 한국을 외국인에게 소개하는 경험을 가진 국내외 학자들이 자신들의 경험을 직접 강의함으로써 학생들에게 실무에서 나타날 수 있는 여러 가지 상황에 적절하게 대처할 수 있도록 한다. 아울러 이 강의는 담당하는 초빙교수는 학생들이 직접 외국인들에게 가르치는 경험을 할 수 있도록 주유지에 2시간의 실습시간을 합한다. 강의는 한국학관련 모든 부분을 포함한다.

The purpose of this course is to understand various factors that could exist in working place through lectures based on experiences of experts who work as a Korean studies lecturer or has experiences of introducing Korea to foreigners. The professor of this course provides students practical training for two hours a week. Topics in this course covers all of field on Korean Affairs.

한국학 프로그램 교수의 전공에 맞추어 교수가 그 전공분야의 특정 주제에 관한 심도 있는 저서임을 학생들에게 전달하고, 학생들이 연구논문 작성을 지도하는 과목이다. 담당교수의 전공에 따라 주제가 바뀔 수 있으며, 학생들은 연구논문을 작성하며 세부하려 한다. 담당교수는 학생들이 주제에 맞는 적절한 이론과 연구방법을 사용하여 현실에 도움이 되는 연구논문을 작성할 수 있도록 지도한다.

This course is a customized research course designed to offer students in-depth knowledge and guidance regarding a subject given by a professor of Korean Studies Program. The subject may change depending upon the specialization of professors every semester, and students write in depth practice-oriented research papers. The professor teaches students how to use relevant theories, and research methods.

이 과목은 한국 사회가 이러한 변화과정에 따른 여러 문제에 대한 이해와 관련된 자료들을 통해 학생들의 정신과 사회에 대한 이해를 돕는다. 이 과목은 지도교수가 지정하는 참고문헌을 학생들이 읽고 연구함으로써 석사학위논문을 준비하는 토대를 마련할 수 있게 할 뿐 아니라, 학생들은 다음 정기 강의 시간에 이와 연계된 자료를 한층 더 충실히 할 수 있는 시간을 가질 수 있게 학습을 목표로 한다.
Recent development of Korean society has largely depended on the process of globalization of the world, starting from the purpose of increasing economic integration and communications. In particular, as the scientific technology opens the new era of wide and quick communication with other countries, Korean society has to face two types of challenges. One of them is to meet the new international standards required for the political and economic development. The other is to accumulate the behavioral norms and customs for domestic development of politics and economy. This course tries to introduce the political processes of Korean society confronting with those challenges. In so doing, it covers interesting topics including institutional development in the context of globalization, elites behaviors, and mass consciousness for social reform in Korean society. In particular, it aims to help foreign students at GSIS who major in Korean Studies develop more comprehensive understanding of political & social dynamics in Global Korea.
치의학대학원
School of Dentistry
Dental Freshman Seminars

The purpose of this seminar is to make students delve into their major topics, thus being able to get familiar with academic perspectives towards analyzing the selected topics. A team of faculty members to assist students in formulating arguments and counterarguments will be formed to promote critical thinking. Furthermore, all of the students in this course should be able to broaden their humanistic foundation through participation in reflective reading and social work.

The course consists of lectures and discussions led by a team of faculty members to assist students in formulating academic perspectives towards analyzing the selected topics in college education. All the students are required to read and write on each major topic, thus being able to get familiar with unique approaches of different disciplines. The main purpose of this seminar is to make students delve into their interests with the capacity to think in a logical and critical manner.

Cellular and Molecular Biology

This course consists of lectures and discussions led by a team of faculty members to assist students in formulating academic perspectives towards analyzing the selected topics in college education. All the students are required to read and write on each major topic, thus being able to get familiar with unique approaches of different disciplines. The main purpose of this seminar is to make students delve into their interests with the capacity to think in a logical and critical manner.

Science and Ethics

This course is designed for students who major in biological sciences or similar fields, and teaches basic knowledge in genetics from a classical and modern view. In addition to establishing basic knowledge in genetics, applications such as genetic engineering and biotechnology are studied so as to understand the importance of genetics to the existence of human life.
This course aims at cultivating a respect for human and other life as well as greater environmental awareness. Students will recognize the diversity of biological creatures on the globe other than humans, and the interrelated relationships between human and other creatures that create ecosystems. Students will have chance to reflect and discuss ways to respond our changing global environment so as to live in harmony with other biological creatures. In approaching natural phenomena from a social science perspective, this course will include topics such as the balance of ecosystems, aging society, health and life span, sustainable technologies, infectious diseases, toxic substances, environment farming, and healthy diet. 

For the purpose of outlining comprehensive overview and strengthening basic foundation in dentistry, the course will not only cover symptoms of oral diseases along with possible diagnostic and treatment considerations for oral health conditions, but it will also introduce different majors in dentistry such as Rehabilitation Dentistry and Preventive Dentistry, finally offering the outlook towards the future of dentistry. For those students who take part in this course, the course will serve as an effective springboard to better understanding of dentistry.

Project 1: Critical Thinking in Dentistry

This course provides an overview of the impact of these changes in the dental health care system. The course will deal with recent new technologies actively being researched in the dental engineering field; 3D dental imaging, image-guide dental procedures, dental virtual reality and augmented reality, robot-guided surgery, dental CAD/CAM, 3D dental printers, digital dental system, dental cloud system, and new dental device technologies. Because new dental device products and technologies should reflect the needs, knowledge and experience of dental clinicians, students will learn how their needs and expertise of the dental field can be represented in dental devices, and will have chance to participate in the development projects.

Project 2: Critical Thinking in Dentistry

This course will also cover areas in statistics related to medical sciences, focusing on regression analysis, categorical data analysis, and analysis of variance.
Project study 2 requires that students should participate in a project at the first semester of their second year and create outcomes on a team basis. For this, each team consists of less than ten members and holds a regular project meeting under the assistance of advisor professors every week. The focus of evaluation is on problem-solving, project performance, teamwork, and communication.

Project study 3 requires that students should participate in a project at the second semester of their second year and create outcomes on a team basis. For this, each team consists of less than ten members and holds a regular project meeting under the assistance of advisor professors every week. The focus of evaluation is on problem-solving, project performance, teamwork, and communication.

Designing Self: Outcomes Review

This course is designed to give yet another chance to select research themes and methods, and conduct research of their own with the support of the professor(s) to those students who have successfully completed Independent Study 1. Either by further developing the projects from their Independent Study 1, or by initiating a new research project, students are expected to enhance their abilities in self-directed learning and critical thinking.
will be encouraged and guided to write a research paper based on their data during this course. Through this, students will learn basic skill for writing research paper that are required for independent researcher.

**M2043.000400**  
*Web-based Practices in Critical Thinking*

This course is designed to promote the ability to create contents and communicate online through the lenses of individual Internet users who are encouraged to view different cultures, educational systems, and medical service in the world. Students are supposed to research and read online, participate in digital writing and online discussion, thus constructing their own blog posts or homepage. In addition, English-written contents are much preferable for the purpose of enhancing global communication skills in the Internet-based world.

**M2043.000500**  
*Humanity & Dental Leadership*

This course is designed for dental undergraduate students who have learned the concepts of self-leadership and communal leadership from the perspective of literature, philosophy, sociology, psychology, and religion while confronting such fundamental issues as happiness, suffering, and death. According to the reading schedule, each student is supposed to take part in discussion along with lectures, working on reflective papers and final outcomes based upon humanistic approaches to understanding humans.

**M2839.000100**  
*Understanding Worldview*

Understanding Worldview

Worldview is a scope through which every man look at the world. This class is designed for freshmen who do not have a fully established worldview because of college entrance examination-centered education in high school to prepare a solid basement on which they can establish their own worldview by reading, studying, and discussing.

**M2839.000300**  
*Peaceful Problem Solving of Pre-dental Personnel*

Peaceful Problem Solving of Pre-dental Personnel

Pre-dental personnel will be faced with various conflicts and problems. The ability of peaceful problem solving and win-win communication is a core competency of a dentist. The purpose of this class is to understand the structures of predictable conflicts and problems of dental settings and to find out the way to peaceful problem solving. For this purpose, the concept of ‘nonviolence’ will be studied and practiced in various settings including ‘patient-doctor relationship’.
861.502* Functional Anatomy of Stomatognathic System 1

A course that covers the use of articulator and functional wax-ups during clinical cases and preclinical practices. Students also learn about the physiology, anatomy, and function of the oral and maxillo-facial system as well as the human body’s coordination and TMJ. This course focuses on occlusion and TMJ, supported by knowledge of the function of the oral and maxillo-facial system. Students will learn how to use articulators and functional wax-ups.

861.503* Structure and Function of Human Body 1

This course provides students with comprehensive knowledge of the structure and function of the human body. Students will learn about the general structure and function of the human body, including the histological anatomy and function of specific organs, such as the circulatory system, gastrointestinal system, respiratory system, renal system, and endocrine system. Students will understand the homeostasis of organisms through this course.

861.504* Structure and Function of Human Body 2

Students will learn about the general structure and function of the human body, including the histological anatomy and function of specific organs, such as the circulatory system, gastrointestinal system, respiratory system, renal system, and endocrine system. Students will understand the homeostasis of organisms through this course.

861.505* Human Bioscience

Students will learn about the general structure and function of the human body, including the histological anatomy and function of specific organs, such as the circulatory system, gastrointestinal system, respiratory system, renal system, and endocrine system. Students will understand the homeostasis of organisms through this course.

861.563* Dental Caries

Dental Caries

861.564* Salivary Gland, Saliva and Oral Environment

Salivary Gland, Saliva and Oral Environment

861.565* Principles of Radiology

Principles of Radiology

861.566* Functional Anatomy of Stomatognathic System 2

Students will learn about the general structure and function of the human body, including the histological anatomy and function of specific organs, such as the circulatory system, gastrointestinal system, respiratory system, renal system, and endocrine system. Students will understand the homeostasis of organisms through this course.
students learn fundamental knowledge on physical and chemical properties of dental biomaterials.

This course provides students with comprehensive knowledge of the basic clinical dentistry. Students learn cooperative clinical practice, communication skill, manual dexterity and visual perception skill. Through this course students also learn infection control, ergonomics, legal issues, and information technology.

Basic Clinical Dentistry 2

This course provides students with comprehensive knowledge of the basic clinical dentistry. Students learn cooperative clinical practice, communication skill, manual dexterity and visual perception skill. Through this course students also have times to discuss and think for clinical dental ethics.
치의학대학원( School of Dentistry)

861.575* 치과와 사회 1-16-0

Dentistry and Society

치의학이라는 전문분야가 사회에서 담당하는 역할을 공중구강보건 및 생명과 의학의 각 분야에 관한 학습을 포함한다. 또한, 다양한 사회적 의료와 생활 환경에 대한 이해를 통해 학습한다. 치과와 사회는 단순히 사회학적 관점의 치의학이 아닌 치과의사라는 의료진료직업인의 사회적 역할에 대해 생각할 수 있는 방법을 제시하게 된다.

This course provides students with comprehensive knowledge of the role of dental profession in the society, through the context of public health, life and bioethics Student learn variety of social programs for public health.

861.576* 미생물과 감염면역 2-30-9

Microorganism, Infection and Immunity

본 과목에서는 감염성 질환을 일으키는 세균, 바이러스, 진균 등의 미생물이 어떻게 질병을 일으키고 숙주에 미생물의 감염에 어떻게 대처하는지 학습한다. 먼저 감염의 일반 증상인 염증을 소개하고, 미생물의 구조 및 범주와 관련된 특정 및 면역기전을 학습한다.

This course provides students with comprehensive knowledge of the micro-organism, infection and immunity. The course include biology of bacteria, fungi, and virus, infection and immunity. This course also includes inflammation and immune disease.

861.577* 악골과 경조직 1-8-24

Jawbone and Hard Tissue

치의학영역의 가장 중요한 조직인 악골의 구조 성분을 언급, 글 및 그 구성성분과 세포기의 역할에 대해 학습하고 석회화 및 골의 대사를 이해한다. 이를 통해 학생들은 글과 그 대사에 관한 통합적인 지식을 얻게 되며 동시에 이 같은 지식이 임상에 적용될 수 있는 확장을 보다 향후한다.

This course provides students with comprehensive knowledge of the jaw and hard tissue. Students learn cartilage, bone, cellular and extracellular components of hard tissue, mineralization and bone physiology.

861.578* 치주조직과 치주질환 2-24-24

Periodontium and Periodontal Disease

치주조직의 질환의 발생, 진행, 종류를 이해하고 치주병원균 및 이에 대한 치주조직의 반응을 교육한다. 치주조직의 해부학적 구조와 기능, 치주질환성양과 병증적인자, 치주질환에서의 면역반응, 치주질환의 국소적 전신적 인자들, 치온의 염증반응, 치주조직의 생물학적 이론 등이 사용된다. 치주질환에 대한 치료 및 치료계획을 이해하기 위한 치주상의학, 생리학적 자극의 시각 및 치료의 합병증에 대한 교육을 포함한다.

This course provides students with comprehensive knowledge of the periodontium and periodontal disease. Anatomical structure and function of periodontium, microorganism associated with periodontal disease, immune system, systemic and local factors related to periodontal disease inflammatory reaction of periodontium, and disease process and characters of periodontal disease.

861.579* 금관가공의치학 1 1-16-0

Crown and Bridge Prosthesis 1

치관부 결손과 부분적 치아상실을 고정성 보철물에 의하여 회복하는 방법을 연구하는 학문으로 본 과정에서는 금관 및 가공의 치의 개요, 전반 및 치료계획의 수립, 금관 가공의치의 자동 제작 현상 및 제작에 관한 임상 및 가공과정을 강의하며 교합기 사용법, Implant 보철의 개요도 포함한다.

This course provides students with comprehensive knowledge of the crown and bridge prosthesis. Students learn how to replace a partially damaged tooth, or missing teeth by fixed partial denture. The course includes outline of crown and bridge prosthesis, diagnosis and treatment plan establishment, clinical and laboratory procedures including several abutment preparations and fabrication of crown and bridge prosthesis. It also includes use of articulator, outline of implant prosthetics.

861.580* 국소의치학 1 1-16-0

Removable Partial Denture 1

본 과목은 치과보철학의 중요한 분야이며, 치과보철학 분야에 대한 간결하고 국소의치의 자격 및 교환에 관한 기본구조와 형태를 강의하며 부분 무치약의 분류 및 정의, 국소의치의 목표, 그리고 국소의치의 작무자요소들을 강의함으로써 학생들에게 국소의치의 기본 개념을 이해시킨다고 한다. 이들 국소의치의 장치, 설계 및 성형은 그 사용법, 삼입법에 따른 국소의치의 설계, 각종 구강성분의 기능과 설계, 환자의 구강형성에 관한 지식을 습득한다.

This course provides students with comprehensive knowledge of the removable prosthodontic of partial denture. This course deals with terminology, introduction, classification of partial edentulism, component of partial denture, retention and support of the denture, partial denture design, impression, master cast and metal framework wax-up.

861.581* 총의치학 1 1-16-0

Complete Denture 1

치아를 전부 상실한 무치약에 인공치가 대치물인 총의치를 제작하여 상실된 해부학적 구조를 수복함으로써 환자의 저작, 발음, 심리적 기능 회복시켜주는 데 관련된 생물학적, 생리학적 이론을 학습한다. 무치약상태, 음어, 무치약상태 개선, 총의치의 분류, 무치약상태의 인상 및 관련된 해부학적, 생리학적 고려사항 등 초기 단계의 임상과정에 이해한다.

This course provides students with comprehensive knowledge of the complete denture prosthodontics. This course covers the design and preparation of complete dentures including biology, biomechanics, and fundamentals of re-habilitating edentulous patients.

861.601* 감염방지 1 1-16-0

Infection Control

이 과정에서는 의료 환경안전과 관련된 개념적적 지식을 교양시키고자 한다. 구강진료 실내에서 구강진료 및 보조진료와 환자들의 병원체 감염에 대해 이해하며 진료실에서의 감염방지를 위한 원리와 방법 및 법적제도에 대한 이해를 습득한다. 아울러 교육의자로서 구강진료 시 준수되어야 할 생명윤리 및 구강진료윤리를 학습한다.

Infection control course provides advanced alertness for health care environmental safety. This course includes understanding the infections of dental health care professional and assistant in dental clinic. Principles and practice for infection control in dental clinic and bioethics will be discussed.
Oral Oncology

Oral Oncology course provides comprehensive knowledge of neoplasia. This course enables students to learn about cysts, benign and malignant neoplasms. It helps them to better understand oral and maxillofacial surgery and to apply it to understanding oral and maxillofacial surgery and to apply it to studying the reports on current trends.

Prevention of Oral Disease

Prevention of Oral Disease course provides basic and comprehensive knowledge of Restorative and pulpal treatment for children. This course deals with understanding of primary dentition in order to maintain its normal function, developing a knowledge of the morphology of the crown, root, and pulp of the primary dentition. The laboratory practice includes anatomical form of deciduous teeth and cavity forms and the requirements necessary before doing cavity preparation. Cavity preparation and amalgam filling, stainless steel crown adaptation, fabrication of space maintainers and removable orthodontic appliances also covered.

Removable Partial Prosthetics

Removable Partial Prosthetics course deals with the casting and finishing of partial denture metal framework recording jaw relationships, artificial teeth arrangements, and carving the abutment crowns for RPD. The aim of this lab practice is to develop in students an understanding of the functional impression technique, the jaw relation record, and abutment crowns for removable partial dentures. This course provides presentations with emphasis on mouth preparation, abutment crowns, impression philosophy and procedures, and occlusal relationship for removable partial dentures.

Crown and Bridge Prosthodontics

Crown and Bridge Prosthodontics course provides students with abutment preparations, impression taking, temporary crown fabrication, use of articulator, clinical and laboratory procedures for crown and bridge prosthesis fabrication. In practice hours, the course carries out posterior and anterior tooth abutment preparations, impression taking for bridge fabrication, model fabrication and mounting, wax-up, casting and soldering of bridge, a class of cements and cementation procedures.

Restorative and Pulp Treatment for Children

This course provides basic and comprehensive knowledge of Restorative and pulpal treatment for children. This course deals with understanding of primary dentition in order to maintain its normal function, developing a knowledge of the morphology of the crown, root, and pulp of the primary dentition. The laboratory practice includes anatomical form of deciduous teeth and cavity forms and the requirements necessary before doing cavity preparation. Cavity preparation and amalgam filling, stainless steel crown adaptation, fabrication of space maintainers and removable orthodontic appliances also covered.
tabolism, drug efficacy and safety, pharmacogenetics, epigenetic and environmental factors that affect the effects of drugs, drug development procedures, etc. In the second part, students can learn about the effects of nutrition on systemic and oral disease, clinical problems associated with an excess and deficiency of nutrients, the way to prevent or control dental caries and enhance periodontal health, how to speed up the period of convalescence following oral surgery, and how to assist elderly patients.

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**Introduction to Clinical Dentistry 3**

861.609* 임상치의학실습 3 1-0-48

This course provides students with comprehensive knowledge of the basic clinical dentistry. Students learn cooperative clinical practice, communication skill, manual dexterity and visual perception skill. Through this course students also learn infection control, ergonomics, legal issues, and information technology.

861.610* 총의치학 2 2-16-48

**Full Denture Prosthetics 2**

This course is successive to the previous part I and lectures. Major clinical procedures, including jaw relation, communication skill, manual dexterity and visual perception skill. Through this course students also learn infection control, ergonomics, legal issues, and information technology.

861.611* 치아보존수복 3 2-16-48

**Restoration of Tooth 3**

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**Understanding Dental Anesthesia 1**

861.612* 치과제재逢 3 1-8-24

**Dental Biomaterials 3**

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**Understanding of Dental Anesthesia 1** deals with basic principles of dental anesthesiological and practices. The physiology of nerve conduction, the mechanism of local anesthesia, the pharmacological effect of local anesthetics, the methods of nerve block in oral and maxillofacial areas, the adverse effects and complications of local anesthesia, the common sedation methods, the intravenous sedation and the monitored anesthesia care for patients with high risk factors will be discussed. This course also provides a wide range of knowledge in sedation in dental practice, and the ability to cope with and organize emergency situations.

861.613A* 치료보존수복 3 2-16-48

**Treatment of Periodontal Disease**

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Treatment of periodontal disease deepens the previous knowledge of periodontal tissue and its diseases. In this course, the basic elements, such as gingiva, periodontal ligament, cementum, and alveolar bone, are studied, along with the basic principles of periodontology, such as developmental
mechanisms and the microbiological association of plaque. Students can explain the anatomical, histological, and pathological aspects of periodontal disease, along with diagnosis, treatment planning, and prevention of periodontal diseases in order to successfully manage them.

861.615* 국소의치학 3 2-16-48

Removable Partial Pulp 3

This course provides students with comprehensive knowledge of the removable partial denture prosthesis. This course deals with impression materials, functional impression, occlusion, delivery of removable partial denture, repair and precision attachment. This course also provides students with practices of all procedures of removable partial denture fabrication and precision attachment.

861.616* 근관치료학 3-32-48

Endodontics

This course provides basic principles and practices of wound healing and craniofacial plastic surgery. Detailed course includes introduction of craniomaxillofacial plastic surgery, general treatment of cranial facial malformations, surgical treatment of craniofacial malformations, diagnosis and treatment of cleft lip and palate, and maxillofacial reconstructions.

861.620* 소아의 교합유도 1-8-24

Occlusal Guidance in Children

This course provides students with the comprehensive knowledge of the diagnosis and treatment planning of trauma to the teeth in children. This course also makes students understand the importance of the maxillofacial growth and development and orthodox treatment for children. Through this course students learn to guide the teeth with normal occlusion and function of the primary dentition and also that of following permanent dentition subsequently.
본 과정은 신입생들에게 임상환경을 소개하고 진료실에 대한 기본적 자세를 학습하고 임상치의학 입문 1-3을 통해 학생들은 다양한 임상적 수기와 지식을 직접 익히고 다양한 진단과 치료과정에 참여하고 보조를 통해 실제 임상진료에 대한 통합성과 임상실습에 필요한 기본적 자세를 학습한다. 윤리교육에서는 생명의료윤리의 기본원칙(Principles of Biomedical Ethics)을 바탕으로 제작된 현실감있는 딜레마사례를 사용한 소그룹토론방식으로 진행한다. 규범을 일반적으로 전달하지 않고 학생과 교수의 주관적인 의견에 따라 토론하면서 문제의 의무와 책임을 이해하고, 환자의 입장에 공감하여 전신적인 윤리적 민감성(Ethical Sensitivity)을 고양하는 데 목적이 있다.

This course provides students with comprehensive knowledge of the basic clinical dentistry, which needed for practicing comprehensive dental care for the patient. Students learn cooperative clinical practice, communication skill, manual dexterity and visual perception skill. Through this course students also learn infection control, ergonomics, legal issues, and information technology.

861.625* 치아보존수복 4 1-8-24
Restoration of Tooth 4

본 과목은 간접 수복을 이용하여 영구치 경조직 손상을 주조 금속제와 은레이로 수복하여 치아를 보존시키고 기능을 회복시키는 과정을 강의를 통해 이해시켜 실습을 통해 숙달시키는 과목으로, 간접 수복에 사용되는 치과용 주조금의 재료학적 및 임상적 특성, 주조 금속을 위한 골조의 형성법, 인상제작법, 수복물 제작 및 접합, 수복체의 연마법을 강의한다. 실습은 임상 시술의 단계에서 실습하는 수복 및 약물 포획에 있어서의 전반적인 보존성과 치아보존수복에 관한 과정을 통해 학습할 수 있도록 하기 위한 준비과정으로 실습을 시행한다.

This course focuses on indirect restoration of hard tissue defect of permanent teeth using gold inlay and onlay. It also includes the clinical properties of dental cast gold alloy, cavity preparation, impression, laboratory procedures, cementation and polishing. The preclinical laboratory courses include...
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practicing gold inlay or onlay restoration on the artificial teeth in dentiform.

861.701* 고정석 고정치치 실습 1-0-48
Clinical Practice Using Fixed Orthodontic Appliance

영구치 빼고 후 고정치치의 근간이 되고 있는 고정석 고정치치를 이용한 고품질 고정치치의 기본적인 개념과 지식을 습득하게 된다. 고정석 고정치치를 통한 치아동 심습은 크게 배열과 재배열, 공간 재형 및 복구비 관계 개선, 마무리의 3단계로 나누어서 이루어지는 아악골과 상악의 함께 고정치치의 시기, 치아동의 방법, 치아동 대응에 대한 생역학적 원리, 고정술에 대한 강의와 실습이 병행된다. 본 강좌를 통해 고정석 고정치치의 생역학적 원리와 기본적인 원리를 이해하여 영구치치에서 간단한 부정교합 환자를 진단하고 치료할 수 있는 고정석 고정치치의 기초를 구축할 수 있다.

The basic concept and knowledge of comprehensive treatment will be learned using clinical practice of a fixed orthodontic appliance therapy. This practice consists of three parts: leveling and alignment, space closure and correction of molar relationship, and finishing. This practice will be accompanied with lectures and practices about treatment timing of orthodontic treatment, various method of teeth movement, biomechanical principle of tooth movement, and anchorage system. According to this practice, the student will understand basic and biomechanical principles of a fixed appliance therapy and treat patients with simple malocclusion in the permanent dentition using a fixed appliance.

861.702* 구강악안면영역의 질환 5-78-12
Disease of Oral and Maxillofacial Region

구강악안면영역에 대한 해부생리학적 지식을 바탕으로 구강악안면영역의 질환의 진단과 치료에 대한 상세하고 구체적인 영역의 학습을 진행한다. 여기에는 기초적인 질병과 관련된 구강 구조의 해부학적 이해를 포함하며, 동시에 질병의 중요한 원인인 미생물, 불응, 세균과 동물에 대한 포괄적이고 동합적 지식을 다룬다. 이러한 이해를 바탕으로 질병의 발생과정과 질병의 경과에 대한 병태생리학적 이해와 함께 임상적으로 진단하기 위해 사용되는 병리진단방법학적 지식과 임상적 접근방법을 학습한다. 그러고 구강악안면영역의 질병의 치료를 위한 내과적, 외과적 접근방법을 검토한다. 동시에 소아에서 발생하는 구강질환을 중심으로 진단과 치료에 대한 구체적인 내용을 살펴본다.

Students will learn on the detailed area of diagnosis and treatment of the disease of the oral and maxillofacial region, based on knowledge of anatomical physiology of the areas. This course provide comprehensive and integrated knowledge of anatomy associated with disease and microbiology of oral pathogens. On the basis of this knowledge, etiology and pathogenesis will be linked to the pathophysiology of the disease. Clinical diagnosis will be viewed from the point of oral diagnosis radiology, and pathology. Detailed medicial and surgical treatment measures also will be covered. Specific oral disease of the children also will be reviewed in detail.

861.703* 두개악안면의상학 1-30-0
Cranio-Maxillo-Facial Traumatology

본 강좌는 수술환자의 기본관리, 입원환자의 관리, 수액요법, 두개악안면의상학의 평가 및 치료 등의 내용을 중심으로 진행된다. 응급외과의 발생원인과 치료 구강악안면의상학에서 필요한 관절전단 및 치아치조골의 손상, 연조직 경조직 손상 수술 및 전혜질 교정에 관한 수술과 응급환자의 치료를 위한 sampling, monitoring, case presentation 등의 실습을 직접 해보는 과정을 거친다.

This course deals with all the basic concepts and ideas of hospital dentistry and oral and maxillofacial trauma patient. This includes basic care support and fluid therapy for the surgical patient. Care for dental emergencies and oral and maxillofacial trauma such as bone fractures of the head and neck, alveolar bone, soft tissue injuries, and fluid and electrolyte balance will be covered. Students will also practice sampling and monitoring methods, and case presentation.

861.704* 임상구강내과학 1-1-16-0
Clinical Oral Medicine

구강이 영역에서 발생하는 질환을 평가하는 데 필요한 다양한 전신질환에 대한 지식과 치과 치료계획 수립 시 고려하여야 할 중요한 사항을 익히며, 국소적 및 전신적인 환인에 의한 다양한 구강 경조직 및 인조직 질환에 관한 기본적인 지식을 교육한다.

This course provides students to learn knowledge of various systemic diseases which are needed for evaluating and treating diseases in otorhinolaryngological area. This course also gives students important modification factors which should be considered for treatment planning for dental patients with systemic diseases, and basic knowledge about various oral hard and soft tissue diseases caused by local and systemic etiologies.

861.705* 임상치과약리학 1-1-16-0
Dental Pharmacology

치과영역에서 자주 사용되는 항균제에 대한 항균제의 사용, 항암약물, 바이러스감염 치료약물, 항진균제 및 면역억제성에 영향을 미치는 약물 등의 작용기전, 화합 및 배설, 치료적 용용, 부작용, 약물상호작용 등에 판여하여 강의하며, 특히 환자간의 약물의 임상적 응용에 관한 기본적인 이론을 중심적으로 강의한다.

This course deals with the chemotherapeutic drugs such as antibacterial, antifungal, antiviral, and anticancer drugs and immunomodulating drugs. The mechanism of action, pharmacokinetic features, therapeutic indications, adverse effects and drug interactions of these drugs will be lectured.

861.706* 전신질환의 진단 및 치료 2 1-1-16-0
Diagnosis and Treatment of Systemic Disease 2

약국투약에서 발생하는 질환을 평가하고 치료하는 데 필요한 다양한 전신질환에 대한 지식과 약학적, 병리학적 지식을 공부하고, 치과 치료계획 수립 시 고려하여야 할 중요한 사항을 익히며, 국소 및 전신적인 원인에 의한 다양한 구강악안면 경조직 및 인조직 질환에 관한 기본적인 지식을 교육한다.

This course provides students basic knowledge about various oral hard and soft tissue diseases caused by local and systemic etiologies and treatment strategies. Students also learn knowledge of various systemic diseases which are needed for evaluating and treating otorhinolaryngological diseases. Especially, this course gives students pharmacologic and pathologic knowledge in detail. In addition, important modification factors which should be considered for treatment planning for dental patients with systemic diseases are discussed.
861.707* 치과의료와 정보기술 1-16-0

Dental Service Management and Informatics

급변하는 현대사회의 요구에 부응하여 의료정보학, 컴퓨터개론 및 각종 정보시스템에 관한 학습이다. 각종 의료용 및 운동기지 모델, 전자의무기록, 의료정보의 표준화 및 자료의 보안, 바이오 인포마틱스 등의 학습을 통해 치과의료에 있어서 필수적인 정보기술을 이해한다.

This course teaches medical informatics, fundamentals of computer technologies and various information systems that become necessary conditions for our rapidly changing modern society. Students build a basic understanding of various information technologies that are useful for practices of dental medicine. The important issues covered in this course include medical vocabulary standards, ontology modeling issues, electronic medical record systems, telemedicine, private and security issues in medicine, and bio-informatics.

861.708* 치과의학 1-16-0

History of Dentistry

치약의 역사에는 치약의 역사, 치약의 전통 및 역사, 그리고 현대사회에서의 의료 및 의료서비스 등에 관한 학습한다. 이를 통해 학문적으로 치약학이 갖추어야 할 영역이 있는지, 구조적 관점에서 현대의 치약학 및 의료를 이해한다.

This course provides students with comprehensive knowledge of the role of dental profession in the society, through the context of public health, life and bioethics. Student learn paradigm of dentistry, tradition of dental profession, health care and health service system with variety of social programs for public health.

861.709* 노인치과학 1-16-0

Geriatric Dentistry

노인에게 발생하려는 발생하는 구강질환들에 의한, 발생기전, 현미경적 소견 및 예후 등에 대하여 다룬다. 또한 연령증가로 인해 환자 치수의 calcific metamorphosis가 진행되어 발생하는 근관내의 변화와 이에 따른 근관치료 방법과 구동형 현미경의 사용방법에 관한 학습한다. 아울러 약압 맞고 구강내 질환을 가진 환자의 영상학적에 대한 이론적 근거와 임상에서 실제로 응용할 수 있는 내용을 임상각과별로 검토하고자 한다.

This course deals with the cause, pathogenesis, histopathologic features and prognosis of oral diseases frequently occurring in senile persons. The course also discusses changes in root canal morphology and calcific metamorphosis due to aging process and root canal treatment strategy incorporating dental microscope in endodontic field. Additionally, students can learn about the effects of nutrition on systemic and oral diseases, clinical problems associated with an excess and deficiency of nutrients, the way how to prevent or control dental caries and enhance periodontal health, how to speed up the period of convalescence following oral surgery, and how to assist elderly patients.

861.710* 식의의학과 1-16-0

Esthetic Dentistry

본 과목은 치아와 치아주위조직의 형태학, 기능학 심미적 증진을 통하여 환자의 요구를 충족할 수 있는 각종 치료법을 포함하는 심미과학의 원리에 기초한 임상에 서술할 수 있는 기초 숙기가 강의된다. 또한 다양한 부위에서의 여러 치료기술을 사용한 임상 증례를 소개하여 향후 심미치료에 대한 단독 전문을 가능하게 한다.

This course deals with cause, pathogenesis, histopathologic features and prognosis of oral diseases frequently occurring in senile persons. The course also discusses changes in root canal morphology and calcific metamorphosis due to aging process and root canal treatment strategy incorporating dental microscope in endodontic field. Additionally, students can learn about the effects of nutrition on systemic and oral diseases, clinical problems associated with an excess and deficiency of nutrients, the way how to prevent or control dental caries and enhance periodontal health, how to speed up the period of convalescence following oral surgery, and how to assist elderly patients.

861.711* 의료진단체계와 건강보험 1-16-0

Dental Health Care Delivery System and Health Insurance

구강생명과 약단면 이상을 효율적으로 관리하고, 조직적인 지역 사회의 노력으로 구강건강을 증진시키는 공통구강보건학적 원리와 방법을 교수하며, 일반 치과의사로서 반드시 알고 충분해야 할 구강보건교육제도의 의료관계법규와 연관시키고 교육한다. 또한 사 회보장제도와 국민건강보험제도의 개념 역사 현황 및 문제점 등을 고찰하고 발전방향을 모색한다.

Theories and principles for improving dental health are covered. This course enables students to detect and eliminate the environmental and social factors detrimental to dental health. Basic concepts of community dental health, dental health care systems, and legal considerations are included. Also, students review concept, historical background, present status and problems of national health insurance and advancement of national health insurance.

M2043.001000* 임상영상치의학 1-16-0

Clinical Oral and Maxillofacial Radiology

임상적으로 치과의사가 치과병원에서 구강영상치의학을 분야에 관계하여 자주 접하게 되는 문제를 제시하고 그에 관한 해결을 논의한다. 세부적으로 임상적으로 경험하게 되는 환자의 주요에 따른 영상검사법의 선택과 그 이용에 대하여 학습하며, 검사의 목적에 따른 영상검사법의 선택과 시기, 결과의 이용에 대하여 학습한다. 또한 진단영상학적의 오류와 대처법에 관하여 학습한다.

Students will discuss the oral and maxillofacial radiological solutions of questions which dentists frequently confront by in clinic. They will study the selection of imaging modalities and protocols for the patients’ chief complaints and the purpose of examination. They will try to find the methods to reduce the imaging artifacts and errors.

861.712* 임상구강안면병원사전학 1-16-0

Clinical Oral and Maxillofacial Radiology

임상적으로 치과의사가 치과병원에서 구강안면병원사전학 분야에 관계하여 자주 접하게 되는 문제를 제시하고 그에 관한 해결을 논의한다. 세부적으로 임상적으로 경험하게 되는 환자의 주요에 따른 영상검사법의 선택과 그 이용에 대하여 학습하며, 검사의 목적으로 따른 영상검사법의 선택과 시기, 결과의 이용에 대하여 학습한다. 또한 진단영상학적의 오류와 대처법에 관하여 학습한다.

Students will discuss the oral and maxillofacial radiological solutions of questions which dentists frequently confront by in clinic. They will study the selection of imaging
This course introduces cutting-edge restorative materials and their clinical procedures in the restorative dentistry, and surgical treatment, emergency treatment and newly developed treatment techniques in endodontics. Through case study, student can manipulate clinical situations as well as pathologic status of restorative and endodontic cases.

861.713* 임상구강안면병리학 1-16-0

Clinical Oral Pathology

본 강좌에서는 조기에 내원하는 환자에게 발생하는 질환을 중합적으로 검토하여 정확하게 감별진단하는 능력을 기부하며, 진단 절차 및 주요질환에 대한 임상병리학적 검사방법 및 검사결과에 대한 해석을 통해 정확한 진단에 이르는 과정을 익히며, 본 과정을 이해하고 나면 구강안면병리학을 정확하게 학습할 수 있는 능력과 임상병리학적 검사를 통한 임상진단의 기본적인 지식을 갖출 수 있도록 한다.

This course is designed to make the students be acquainted with how to differentiate the diseases of various categories occurring in the oral and maxillofacial region including the oral mucous membrane, the maxilla, and the mandible, and be able to interpret the clinical chemical laboratory data from the patients with major systemic diseases.

861.714* 임상구강안면외과학 1 1-16-0

Clinical Oral and Maxillofacial Surgery 1

본 학과과정은 이수한 학생은 구강 및 악안면에 발생한 결손 및 기형증에 대한 증상, 외과적 처치 및 예방에 대해 이해하고 기능적 보철수복을 위한 진단과 보철외과수술 및 임상적 임플란트를 이용한 악안면재건 및 보철수복술에 대하여 학습하고 실제 진단과 처리를 할 수 있는 능력을 습득하게 된다.

A student who completes this course is supposed to understand the symptom of deformity & defect in Oral & maxillofacial area and its surgical treatment and prevention, and get the ability to reconstruct the maxillofacial area through implant and operate the preprosthetic surgery for functional prosthetic management.

861.716* 임상두경부배부학 2-16-48

Clinically Oriented Head and Neck Anatomy

이 강좌를 통하여 실제 임상에서 환자를 치료할 때 필요한 해부학적 지식을 얻는다. 특히 두경부 영역의 상해성질환을 전문적으로 이해하고, 두경부적상해 및 두경부동통 등에 대한 신속한 관찰 및 치료 능력을 갖추는 데 도움을 받는다.

This course provides anatomical knowledge of head and neck area for treating dental patient. Especially, the cadaver dissection will remind students of already learned anatomical contents. It will also help them to learn related clinical subjects.

861.717* 임상치과보존학 1-16-0

Clinical Conservative Dentistry

본 과목은 중립 후 보존수복학 및 근관치료학 분야의 환자진료에 독자적인 판단력 및 응용력을 갖추게 되는 과목이기 때문에 학습과 실습을 통해 학습할 수 있는 능력을 기후한다.

Clinical Practice in Oral Medicine 1

This course introduces cutting-edge restorative materials and their clinical procedures in the restorative dentistry, and surgical treatment, emergency treatment and newly developed treatment techniques in endodontics. Through case study, student can manipulate clinical situations as well as pathologic status of restorative and endodontic cases.

861.718* 임상치과약물치료학 1 1-16-0

Dental Pharmacotherapeutics

본 과목은 임상진단을 가진 환자의 치과치료시 치료 및 고려사항과 진단진단 치료약물의 부작용 및 치과치료시 처방되는 약물의 투여 및 효과에 대해 학습하게 된다.

This course is designed to make the students be acquainted with how to differentiate the diseases of various categories occurring in the oral and maxillofacial region including the oral mucous membrane, the maxilla, and the mandible, and be able to interpret the clinical chemical laboratory data from the patients with major systemic diseases.
Clinical Practice in Oral and Maxillofacial Radiology 1

Students take the periapical radiograph with paralleling and bisecting technique, bitewing radiograph and occlusal view each other. They practice the achieving, processing, and bisecting technique, bitewing radiograph and occlusal view each other. They practice the localization of the pathosis. Conventional and special diagnostic imaging are introduced.

Clinical Practice in Pediatric Dentistry 1

The purpose of this course is to provide information on the basic system of orthodontic treatment before clinical orthodontic practice. This course consists of preclinical practice including basic orthodontic charting, impression for orthodontic appliances,教学 and management of the disorders concerning the orthognathic region.

Clinical Practice in Pediatric Dentistry 2

The purpose of this course is to provide orthodontic procedures, treatment planning and removable orthodontic appliances are taught. Students are required to make presentations on different subjects and participate in discussions. By assisting and directly participating in the treatment of actual patients, knowledge and capabilities necessary for Clinical Practice in Pediatric Dentistry 2 are gained.
3. To learn how to explain brushing methods and its importance.

2. To learn how to treat early stage of periodontitis.

The objective of this course is to relate the preclinical course to the clinical. It includes the orientation of prosthetic clinic, impressions, and articulation of casts for fixed prosthetic treatment, surveying and RPD design, along with a synopsis of complete dentures.

861.726* 치과보철학임상실습 1 1-0-48
Clinical Practice in Prosthodontics 1

861.727* 치과과학임상실습 1 1-0-48
Clinical Practice in Periodontology 1

Students achieve the image, diagnose the pathosis and discuss the clinical cases which are less difficult.

861.728* 구강내과학임상실습 2 1-0-48
Clinical Practice in Oral Medicine 2

861.729* 구강악면방사선학임상실습 2 1-0-48
Clinical Practice in Oral and Maxillofacial Radiology 2

861.730* 구강악면외과학임상실습 2 1-0-48
Clinical Practice in Oral and Maxillofacial Surgery 2

861.731* 소아치과학임상실습 2 1-0-48
Clinical Practice in Pediatric Dentistry 2

861.732* 치과교정학임상실습 2 1-0-48
Clinical Practice in Orthodontics 2

The purpose of this course is to teach the progress of orthodontic treatment and to develop clinical competency through experiencing clinical orthodontic charting, orthodontic diagnosis and treatment planning, orthodontic treatment of re-

M2043.001100* 영상치료학임상실습 2 1-0-48
Clinical Practice in Oral and Maxillofacial Radiology 2

Students achieve the image, diagnose the pathosis and discuss the clinical cases which are less difficult.
치의학대학원(School of Dentistry) :: 치의과(Dept. of Dentistry)

movable orthodontic appliances and fixed appliances. The students can practice more than the minimum amount of orthodontic treatments in a clinical situation, such as fabrication and analysis of orthodontic model, lateral cephalometric analysis of patients, and observation and clinical practice of fixed orthodontic appliances. These practices provide a basic competency for orthodontic treatment.

861.733* 치과보철학임상실습 2 1-0-48
Clinical Practice in Conservative Dentistry 2
본 과목은 치아보철수복 및 근관치료와 관련된 임상기술 중 기본적이며 나이도가 높지 않은 증례들에 대해 치과보철과 교수, 초보교원 및 전공의의 지도하에 단계적으로 학생들이 직접 시술하게 하여 졸업 후 독자적으로 환자를 진료할 수 있는 능력을 배양하기 위한 과목이다. 학생진료는 치과병원의 안내부진료센터에서 시행되며 진료, 치료계획, 시술의 전 과정에서 치과보철과 교수, 초보교원 및 전공의의 지도감독을 받으며, 본 과목의 시행기간 내에 요구된 각종 증례의 치료를 수행하여야 한다. 나이도가 높은 증례들에 대해서는 치과보철과 전공실에서 관찰 및 진료조직을 통해 증례를 이해시키고 치료방법 등에 대해 지식과 능력을 배양하도록 한다.

This course deals with the ability to handle the basic endodontic and restorative cases. Predoctoral students are able to provide basic treatment to the patient under the supervision of clinical faculties. Students should be able to fulfill their minimum requirements. As a result, they can develop their own clinical ability to take care of the patients in restoration and endodontic treatments Most of clinical practice will be executed in the Student Clinic Center in the Dental Hospital. When it comes to difficult restorative and root canal cases, the students should treat patient after they gain enough knowledge and skill by observing the cases and assisting doctors in the Department of Conservative Dentistry in the Dental Hospital.

861.734* 치과보철학임상실습 2 1-0-48
Clinical Practice in Prosthodontics 2
본 과목의 목적이 치과보철 전반에 관하여 3학년 학생들이 보철시술에 관한 기초개념을 정립하고 치료 술식을 이해하게 하여, 실제 환자의 진료 및 치료계획 수립을 가능하게 하는 데 있다. 이 과정에서는 보철과 전공의 및 교수의 치료과정을 관찰하고 보조하는 것, 신임 CHARTING과 치료계획 참여, 환자를 대상으로 한 간단한 치아보철 시술과 기술이 포함된다.

The purpose of this course is to establish the basic concepts of prosthetic procedures for the junior dental students. And to have them understand the treatment procedures, and so that they can set up the plan for the diagnosis and treatment for the patients in real field. In this course, to observe and assist the faculties and residents in the dept. of prosthodontics, to be involved in charting and setting up the treatment plan, and to have them experience simple clinical prothetic skills for the patients and fabrication of the prosthesis.

861.735* 치추과학임상실습 2 1-0-48
Clinical Practice in Periodontology 2
환자와의 직접적인 접촉을 통하여 치주질환의 진단, 치료계획 설정 및 치주치료 방법 등을 학습한다.
1. 환자의 문진, 시진, probing 등을 통하여 환자의 치주상태 평가 및 치주 질환의 진단 방법을 배운다.
2. 임상 실습 또는 관찰을 통해 초기 및 중증 치주염 환자의 치료 방법을 배운다.
3. 환자에게 구강관리교육에 대해 교육한다.
4. 입플란트 수술을 보조하면서 시술법을 배운다.

The purpose of this subject is to learn how to diagnose and set treatment planning of periodontics and how to treat periodontitis through observation and practice.
1. To diagnose periodontal disease through direct contact with patients.
2. To learn how to treat early and moderate stage of periodontitis.
3. To learn how to explain brushing methods and its importance.
4. To learn how to perform implant surgery.

861.736* 논문연구 2-2-0
Dissertation Research

관심 있는 분야에 대한 연구주제를 선정하고 연구를 수행하여 인정 수준의 논문을 작성하도록 한다.

To let the students decide the research subject in fields that interest them and let them make qualified thesis after required study.

861.5701 구강보건교육의 최신동향 1-16-0
Current Topics in Oral Health Education

구강건강에 관련된 개인적인 행위들을 숙취하기 위해서는 동기가 중요하다. 이런 동기획득을 통해서 행동변화가 가능하며, 행동변화는 구강건강증진을 도모하게 해준다. 특히 동기와 행동변화는 적절한 교육을 통해 이루어질 수 있다. 따라서 이 강좌에서는 앞에 언급된 적절한 교육 중 세포소개된 구강보건교육 내용을 가르치고, 손쉽게 사전될 수 있는 진료실 및 지역사회의 구강보건교육자료를 개발한다.

Motivation is very important to acquire individual behaviors related to oral health. Through this acquisition of motivation behavioral change might be possible and this behavioral change could lead to oral health promotion. Especially motivation and behavioral change are absolutely dependent on proper education. So, in this course newly introduced oral health education will be provided and in addition oral health educational materials used easily in the clinic and community centers also will be developed.

861.5702 구강세균의 수족-기생체 상호작용 1-8-24
Host-Parasite Interaction in Periodontal Disease

치주염은 복합미생물감염으로서 치주조직과 치아상의 원인이다. 구강내 약 700종의 세균이 존재하며, 이들 대부분은 비병원성 상주균이고 극히 일부분이 자주병원성으로 알려져 있다. 치주질환의 병원균은 세균의 특성에 대한 수족의 방어작용으로서, 수족과 백혈구의 방어작용으로서, 이론으로 독립적인 기생체의 존재가 가능해질 수 있다. 본 강좌에서는 치주질환에 의한 반응에 대한 이해를 돕기 위해, 수족과정에 포함된 다양한 구강세균의 수족세포의 상호작용을 분석적 수준에서 탐구하고, 수족-기생체 상호작용을 조절할 수 있는 방법을 모색한다.

Periodontal disease is a polymicrobial infection that results in the destruction of periodontal tissue and tooth loss. About 700 bacterial species are known to reside in the oral cavity.
While the majority of these organisms are commensals, several species are known to be periodontopathic. The pathogenesis of periodontal disease involves the activation of a great variety of components of the host immune and inflammatory response, which primarily defend periodontal tissues against bacterial attack, but also function as the mediators of tissue destruction. To better understand the pathogenic mechanisms by periodontopathic bacteria, the study encompasses the interaction of host cells and various oral bacteria including commensal bacteria at the molecular level, and explores the method to modulate the host-bacterial interaction.

**Research in Oral and Maxillofacial Radiology**

Finally, they will write a research paper about an interesting methods and the fields for the research of clinical radiology. They will study the cancers. Related to the prognosis of oral premalignant lesions and oral logical pathogenesis, invasion and metastasis, and the factors with comprehensive knowledge of oral cancers by making transgenic animal technology.

**Methods in Dental Biotechnology**

Mammalian cells receive information in the form of extracellular chemical signals - hormones and transmitters. These stimulations must then be signalled to the cellular machinery to produce a biological response mediated by second messengers. In this subject, we study the roles of ion channels and membrane transporters involved in this biological response.

**Cell and Molecular Physiology**

이론에 대해, 세포화 및 세포 내 2차 전달자의 내용을 중심으로 세포 및 분자생물학 분야에 관심을 가지고 있는 학생들은 대상으로 연구고찰 및 토론을 통해 기본적인 생물학 연구기법 및 국내외의 최신 연구경향에 관한 정보를 제공하고자 한다.

**Digital Orthodontic Treatment with 3 Dimensional Virtual Set-Up**

교정영역에서 전통적인 진단과 치료방식은 x-ray와 사진을 이용한 2차원적인 방식에 의존하여 왔다. 그러나 과학기술의 발달로 인하여 진단과 치료계획은 3차원 CT, 3차원 사진, digital technology를 이용한 새로운 paradigm으로 변화하고 있다. 이에 따라 Digital Orthodontics라는 개념을 이해하는 것이 필수적인 과정이 되었다. 교정계획 수립시 치아이동을 가상 Set-Up하여 simulation 하여 보며 실제 가능한 치아이동의 종류와 정도를 파악하여야 할 것이다. 따라서 본 과정은 3차원 digital virtual set-up을 이용하여 실제 환자의 진단과 치료에 적용하는 데 얻어가기 위한 개념을 이해하는 것이 필수적인 과정이 되어있다.

1. 교정 진단과 치료계획은 3차원 CT, 사진, digital technology를 이용한 새로운 paradigm의 변화와 기술의 변화가 필요하다.
2. Virtual set-up의 개념을 이해한다.
3. 교정계획 수립시 치아이동을 가상 Set-Up하여 simulation한다.
4. 실제 가능한 치아이동의 종류와 정도를 파악한다.

The traditional way of the orthodontic diagnosis and treatment planning depends on the 2 dimensional x-ray and photo. However, the development of digital technology make it possible to change the paradigm using 3 dimensional (3D) CT and photo. Therefore, it is necessary to understand the amount and kinds of practical tooth move-
본 과목은 각종 구강조직이 기능을 잃는다는 동안 위생자극, 외상 혹은 질환에 의해 야기되는 손상에 대해 조직구조와 기능이 원상으로 회복되는 현상과 기전에 관하여 강의, 문헌고찰, 토론을 통하여 공부한다. 아울러 손상으로 인해 폐손한 기능과 조직 구조를 항상시키는 분자생물학적 치료법의 원리에 관하여 공부한다.

In this course, students learn the phenomena and mechanisms that make the damaged tissue by harmful stimuli, external wound, or disease normalize in structure and function. The course consists of lectures, reviews, discussion. In addition, students learn in this course the principles of treatment in terms of molecular biology.

861.S714 구강조직 재생과 치유 1-16-0

Regeneration and Repair of Oral Tissues

본 강좌는 늙은 구강조직이 기능을 잃는다는 동안 위생자극, 외상 혹은 질환에 의해 야기되는 손상에 대해 조직구조와 기능이 원상으로 회복되는 현상과 기전에 관하여 강의, 문헌고찰, 토론을 통하여 공부한다. 아울러 손상으로 인해 폐손한 기능과 조직 구조를 항상시키는 분자생물학적 치료법의 원리에 관하여 공부한다.

In this course, students learn the phenomena and mechanisms that make the damaged tissue by harmful stimuli, external wound, or disease normalize in structure and function. The course consists of lectures, reviews, discussion. In addition, students learn in this course the principles of treatment in terms of molecular biology.

861.S715 근관치료학의 신경향 1-16-0

New Trends in Endodontics

근관치료학은 우식, 외상, 교모, 마모 등으로 치수 및 치근절이 알아가지 주야서 기능을 회복할 수 있도록 하는 치과 치료의 기본이 되는 치료이다. 이전까지 사용된 근관형성과 근관형성 방법으로는 시간이 많이 소요되고 재치료가 필요할 수 있는 등의 단점이 있어 최근 새로운 개념이 도입된 치아에 대한 이론과 실습이 필요한 것으로 사료된다. current literature review로 근관치료의 신경향에 대한 이론적 배경을 알아본 뒤 기구 사용법과 치료술에 대한 실습을 통해 최신진료를 실제 임상에 적용할 수 있도록 하는 것이 본 과목의 학습목표이다.

Endodontics is the very important dental treatment to save the tooth with pulp and periapical disease by extensive decay, trauma, attrition and abrasion etc., and provide recovery of its original function. However, the instrumentacation and canal filling techniques used so far has been time-consuming and unpredictable. In order to overcome these drawbacks, better knowledge and practice is urgently recommended by incorporating current endodontic treatment concept. A better understanding of the fundamental process involved in cleaning, shaping and root canal obturation via current literature review and practice of equipment brings hope that the outcome of endodontic treatment would be more predictable and offer a broader spectrum of therapeutic choices.

861.S716 신경과학특론 1-16-0

Advanced Neuroscience

신경과학 분야에 관심을 가지고 있는 학생들을 대상으로 신경과학 분야의 최신진료에 대하여 교육하고 토론한다. 학생들이 적절한 관심분야를 선택한 후, 그 분야에 대한 기술적인 고찰을 근거로 학습이 이루어지는 연구들을 검토하고, 앞으로의 연구개발에 대해 토론한다.

This lecture provides updated knowledge on neuroscience field. The students will choose a topic in neuroscience, and review the current research, based on the historical background, thereby prospect the future study.

861.S717 악안면골질환연습 1-8-24

Seminar in Maxillofacial Bone Diseases

본 강좌에서는 악안면 영역에 혼자 발생하는 골질환을 심의
Dental Implant Materials

Current concepts in periodontology

Current Concepts in Periodontology

Practitioner's guide to periodontal therapy

Infection & Immunity in Clinical Dentistry

Practice of Scientific Writing in Dentistry

Update in Forensic Dentistry

Gum disease, enamel hypoplasia, and periodontal disease are all discussed in this section. The course is designed to deal with causative factors, genetical pathogenesis, and radiographic features, microscopic appearance and clinical manifestations of bone diseases occurring in the oral and maxillofacial region by the category of fibrinous lesions, inflammatory bone disease, tumors, and genetical diseases by making lectures and review of scientific papers related to bone diseases.

This course is designed to deal with cause, genetical pathogenesis, and radiographic features, microscopic appearance and clinical manifestations of bone diseases occurring in the oral and maxillofacial region by the category of fibrinous lesions, inflammatory bone disease, tumors, and genetical diseases by making lectures and review of scientific papers related to bone diseases.

861.S718A 입립플랫제료학 1-16-0

Dental Implant Materials

Currently used implant materials (metals, ceramics, polymers, and composites) in engineering and biological aspects. Manufacturing process of implant materials, their physical and biological evaluation methods, pre-clinical and clinical applications of biomaterials at the aspects of biology are studied in this course. The advanced knowledge of dental applications is essential in the dental field. Students will be introduced to the basic principles of currently used implant materials (metals, ceramics, polymers, and composites) in engineering and biological aspects. Manufacturing process of implant materials, their physical and biological evaluation methods, pre-clinical and clinical applications, and current research trends will be given in the class.

861.S719 치과생체재료의 생물학 및 생체적합성 1-16-0

Biology and Biocompatibility of Dental Biomaterials

치과치료는 의료 분야 중 재료에 의존하는 비중이 가장 높은 분야 중 하나로서 적절한 생체재료의 사용이 매우 중요하다. 더욱이 최근 치과생체재료의 기반적인 발전은 재료와 생체간의 상호작용을 중요시하고 있다. 이러한 흐름에 맞추어 본 과목에서는 치과재료를 포함한 의료재료에 대한 생체의 반응에 초점을 두는 치과생체 재료의 생체적합성을 다룬다. 이는 치과생체재료가 유합할 수 있는 생물 반응의 기전과 생체에 대한 이들이 과학적 및 부정적인 영향 등 생물학적 관점에서의 치과생체재료에 대한 전문지식을 포함한다.

Application of suitable dental biomaterials to patients cannot be more emphasized in dental field. Recent interaction between materials and organisms is getting more attention in recent study of dental biomaterials. This course is focused on biocompatibility based on the reaction of organisms to biomaterials including dental biomaterials. The advanced knowledge and mechanism underlying negative and positive effects of biomaterials at the aspects of biology are studied in this course.

861.S720 치주약의 최신전략 1-16-0

Current Concepts in Periodontology

The purpose of this subject is to understand new concepts of periodontology beyond textbook and will read new articles of periodontology.

861.S721 치주과의 최신학문 1-16-0

Advanced course for Diagnosis and Management of Halitosis

Halitosis is sometimes called as bad breath or
breath malodor has been proved to originate from the intra-oral microbiologic activity in more than 90% clinical cases. However, number of patients and clinicians still try to find any more obvious cause other than microorganisms, which makes halitosis become more complicated clinical problem unsatisfying and exhausting patients psychologically as well as physically in terms of repeating unnecessary various examinations and treatments. Consequently, more comprehensive approach to manage the psychological and physical problems of halitosis patients is now essential to guarantee the successful treatment of halitosis. In this course, students will be instructed and guided to discuss voluntarily and understand recent advanced knowledge on halitosis management.

861.S725 Sedation for children and medically compromised handicapped patients

This course helps students have the knowledge about the importance of sedation for dental procedures in poorly cooperative patients. Sedation may be useful to relieve their anxiety and fear related to treatments, facilitating dental procedures. This course also offers deeper aspects of knowledge and techniques of sedation for children and medically handicapped disabled patients.

861.801* 새로운 치과의사 2-9-96

Advanced Dentistry in Community

This course is designed to provide students with the basic concepts of community dental health as a practical experience in dental health care delivery. The lecture deal with behavioral sciences, dental practice management and dental ethics.

To learn general things that are necessary to perform as a general dentist in the future in charge of primary care in the community centers, dental clinics, dental hospitals. To build up ability to take care of works as a dentist in the society through practical learning in real field.
먼 개수술식, 즉시의치 이외에 무처리환자 치료에 적용되는 절약 및 귀한상의치, 인공치근을 이용하는 매식의치 숭식 등 치단 복수 개념과 방법, 기구 및 재료가 소개된다.

This course has the latest and special concept, methods, instruments and materials related to not only the conventional complete denture treatment procedure but also denture base relining, rebasing, immediate denture, mucosa or root-supported denture, dental implant procedure.

**861.806 범죄의학 1-16-12**

**Forensic Odontology**

사회에서의 법률적인 문제의 중요성이 난로 증가하고 치과질환의 대중성과 확대되면서 그 진료의 법적 문제가 사회의 큰 관심의 대상이 되고 있다. 이 과목에서는 치과의학과 자연과학을 토대로 한 제한 감정 및 진단체를 교육하여 실시하는 전서유지 및 법률상의 문제를 공절할 수 있는 능력을 습득하도록 교육하되, 또한 치과의사에게 필요한 법률을 교육하여 치과치료와 관련되어 발생하는 법적, 사회적 문제를 예방하고 해결할 수 있는 능력을 습득하도록 교육한다.

As the importance of the legal problems in society increases and the popularity of dental treatments is ensured, the legal problems in dental treatments become a big concern to dentists. This course provides student to be taught how to acquire the abilities for preventing and solving the legal and social problems related to dental practice.

**861.807 새로운 치의학 2-32-0**

**Advances in Dentistry**

치과수복학 분야의 새로운 개념 및 재료를 소개하고 이에 따른 재료의 개발 경향 및 방법, 재료의 반응 및 적합성 등을 학습한다. 치과용 기계기구의 발전경향 및 개발방향을 이해하고 이를 응용할 수 있는 기본지식을 습득한다. 또한 근관치료 설치기 및 근관치료 관련식에 관한 학습한다. 그리고 두개涎마약대상의 정상론, 성형, 재건, 인공 치근 및 메시물 이식론의 새로운 경향에 관련하여 학습한다.

In this class, new concept and materials for dental restorative actions and compatibility issues related to new concept and methods, instruments and materials related to not only the conventional complete denture treatment procedure but also denture base relining, rebasing, immediate denture, mucosa or root-supported denture, dental implant procedure.

**861.808 임상증례연구 1-16-0**

**Clinical Case Study and Discussion**

본 과정은 두개.gmail변악의 영역에 발생하는 질환에 관하여 임상적으로 연구하는 과정이다. 구강약범의 판독적 수술 및 치료를 위한 방사선학적 진단, 병리학적으로 확장한 과정에 관하여 구체적인 증례를 통하여 학습함으로써 이 과정을 이수하는 학생은 실제 환자를 진단하고 치료하는 능력을 배양할 수 있다.

This course deals with the clinical research involved with the diseases that occur in the craniomaxillofacial field. By familiarizing oneself with the processes involved with the radiologic and pathologic diagnosis for the surgeries and treatments concerned with the craniomaxillofacial field through specific cases, the student who takes this course will be able to cultivate the ability to diagnose and treat actual patients in similar circumstances.

**861.809 임상치과교정학 1-16-0**

**Clinical Orthodontics**

본 과정은 부정교합 환자의 치료 영역을 인식시키고 각종 치료 습식과 교정장치의 사용법을 실제 증례를 통하여 제시함으로써 치료할 수 있는 증례와 전문가의 의미함 증례의 선발능력을 제고토록 한다.

This course will educate students to learn the scope of the contemporary orthodontic treatment, which will demonstrate various cases with the appropriate techniques and their treatment procedures. The goals of this course is to make students have the capability of selecting the preventive and interceptive cases and to understand the corrective cases for which the orthodontists can provide.

**861.810 임상치과교정학 1-16-0**

**Clinical Periodontology**

저학년에서 과목서를 중심으로 치주조직과 치추질환 및 치추질환의 치료법에 대하여 배운 지식을 바탕으로 실제 환자의 증례 중 가장 치주상태에 따른 전단, 치료계획 수립, 치료과정 및 치료결과 등을 토의서식으로 수업을 진행한다. 실질적인 임상교육을 통해 직접 환자를 진료할 때 도움이 되도록 습득하는 것이 목표이다.

1. 증례 발표를 통한 치주 치료의 효과를 학습한다.
2. 치주 질환의 진단을 정확하게 하는 방법을 학습한다.
3. 치주 질환의 치료 계획을 설정하는 방법을 학습한다.
4. 치주 질환의 치료와 그에 따른 예후에 대해 학습한다.
5. 치주 치료의 최종결과 치주막조직수술의 방법과 예후에 대해 증례 위주로 학습한다.

To learn practical periodontal knowledge to treat periodontal patient.
1. Through case presentation
2. To learn how to diagnose of periodontal disease
3. To learn how to set up treatment planning of periodontal disease.
4. To learn prognosis of periodontal disease and treatment
5. Case study of periodontal mucogingival surgery
6. To learn combined therapy, that is peri-implant, peri-prosthetics, peri-orthodontics, and peri-endodontics.

**861.811 구강내과학임상실습 3 2-0-96**

**Clinical Practice in Oral Medicine 3**

약과의학에서 발생하는 다양한 증후를 평가하는 데 필요한 전단법과 치료계획 수립법을 배우며, 구강 안전리의 진행과 암반연 동종병증에 뛰어난 이론적, 실질적 수준의증진을, 구강건조증, 미각애, 구취 등과 같은 증상에 대한 진단 및 치료과정의 관련과 직접적인 치료를 통하여 이를 종합적으로 학습함으로써 자신이 갖춘 치과의사로서의 능력을 배양하고 앞으로 치과의사로서 더욱 나아질 수 있는 능력을 갖출 수 있도록 교육한다.

To learn practical periodontal knowledge to treat periodontal patient.
1. Through case presentation
2. To learn how to diagnose of periodontal disease
3. To learn how to set up treatment planning of periodontal disease.
4. To learn prognosis of periodontal disease and treatment
5. Case study of periodontal mucogingival surgery
6. To learn combined therapy, that is peri-implant, peri-prosthetics, peri-orthodontics, and peri-endodontics.
This course provides students to learn diagnostic methods and treatment planning needed for evaluating and treating various diseases in oromaxillofacial area. Through observing and practicing diagnosis and treatment procedures for intraoral soft tissue lesions, temporomandibular disorders and chronic orofacial pain disorders, bruxism, snoring and sleep apnea, dry mouth, taste disorders, and oral malodor, students will be trained to have ability as qualified dentists and will be educated to get ability to acquire the advanced knowledge in the future.

861.815* 치과교정학임상실습 3 2-0-96
Clinical Practice in Orthodontics 3
본 과정은 실제 임상에서 새로운 교정 환자의 차량, 진단 및 치료계획 수립, 치료과정과 계수 환자의 진료에 학생이 직접 참여하게 하여, 교정치료의 전 과정을 이해하고 임상적 능력을 개발시키는 것을 목적으로 한다. 이 과정에서 환자 교정계획의 제작 및 분석, 환자의 두부방사선측면사진 분석, 실제 환자 가절식 교정치의 제작 및 장착, 실제 환자 보철치의 제작 및 장착, 교정치 교정치치의 관할 및 심술 등이 이루어지며, 이를 통해 기본적인 교정치료 숙식을 시행할 수 있는 능력을 얻을 수 있다.

The purpose of this course is to teach the progress of orthodontic treatment and to develop clinical competency through experiencing clinical orthodontic charting, orthodontic diagnosis and treatment planning, orthodontic treatment of removable orthodontic appliances and fixed appliances. The students can practice more than the minimum amount of orthodontic treatments in a clinical situation, such as fabrication and analysis of orthodontic model, lateral cephalometric analysis of patients, fabrication and fitting of removable appliances, and observation and clinical practice of fixed orthodontic appliances. These practices provide a basic competency for orthodontic practitioners.

861.816* 치과보철학임상실습 3 2-0-96
Clinical Practice in Prosthodontics 3
본 과목은 치과보철학과 치과의학과 기초의학과 치과의학과의 교과목으로, 본 과목에 의해서 학생들이 보철관련 임상 및 기술을 학습하고 진료를 실습하게 된다. 이 과정에서는 다양한 보철 치료를 경험하고, 이를 통해 임상적 능력을 배양할 수 있다.
1. To learn how to diagnose periodontal disease through direct contact with patients.
2. To learn how to treat early and moderate stage of periodontitis.
3. To learn how to perform modified Widman flap surgery through practice.
4. To learn how to explain brushing methods and its importance.
5. To learn how to perform implant surgery and implant maintenance therapy.

6. To learn how to perform implant surgery and implant maintenance therapy.
7. To learn how to perform modified Widman flap surgery.
8. To learn how to treat early and moderate stage of periodontitis.
9. To learn how to perform modified Widman flap surgery through practice.
10. To learn how to explain brushing methods and its importance.

The purpose of this subject is to learn how to diagnose and set treatment planning of periodontics and how to treat periodontitis through observation and practice.

861.818*  치과과학영상실습 3 2-0-96
Clinical Practice in Periodontology 3

환자와의 직접적인 접촉을 통하여 치주질환의 진단, 치료계획 설정 및 치주치료 방법 등을 학습한다.

1. 환자와의 문진, 시진, probing 등을 통하여 환자의 치주상태 평가 및 치주 질환의 진단 방법을 배운다.
2. 압상 실습 또는 관찰을 통해 초기 및 중증 치주염 환자의 치료 방법을 배운다.
3. 초기 치주염 환자의 변형위드만체막수술을 직접 시술해보고 배운다.
4. 환자에게 구강관리요령에 대하여 교육한다.
5. 임플란트 수술법과 임플란트의 유지관리법에 대해 배운다.

The purpose of this subject is to learn how to diagnose and set treatment planning of periodontics and how to treat periodontitis through observation and practice.

861.819* 치의학입학선택 4-0-192
Senior Selective in Clinical Dentistry

학생들이 자신의 적성에 맞는 입상실습 영역을 선택하여, 해당 전공별로 환자관리에 필요한 일반적이고 전문적인 지식과 기술 및 태도를 습득하도록 한다. 이를 통해서 지역사회 구강보건전문가로서 전문성과 전문성을 갖는 데 도움이 되도록 한다.

The purpose of this course is to help make students with various kinds of clinical cases. The contents of clinical practice are diagnosis and treatment planning of basic dental prosthetic cases and the construction of a three unit fixed bridge or single gold crowns, 10 cases of implants and 2 or more cases of each partial denture and complete denture under the supervision of professor and also assist and observe treatment procedures of complex and difficult cases at the department of prosthodontics.

861.820*  치의학종합평가 2-15-15
Comprehensive Assessment of Dentistry

The purpose of this course is to help make students with various kinds of clinical cases. The contents of clinical practice are diagnosis and treatment planning of basic dental prosthetic cases and the construction of a three unit fixed bridge or single gold crowns, 10 cases of implants and 2 or more cases of each partial denture and complete denture under the supervision of professor and also assist and observe treatment procedures of complex and difficult cases at the department of prosthodontics.

861.821* 임상관검안의치학 1-16-0
Clinical Crown and Bridge Prosthodontics

고정성 치과보철학 분야 중 임상적 이해가 필요한 부분에 관한 교안 및 심의사항 향상을 위한 각종 도제수복물의 임상응용에 대하여 강의한다. 특히 환자의 내면부터 치료종결까지의 과정을 살펴보며 치과법으로써 향후 독립진료의 기초를 다진다.

This course provides students with investigation for a part of fixed prosthodontics field that needs clinical comprehension and clinical application of several ceramica restorations for esthetic improvement. Especially the course looks into total procedure from patient visiting to end of treatment, so it provides students with basis for individual dental diagnosis and treatment.

861.822* 임상 심리학 1-16-0
Clinical psychology

본 강좌는 심리학에 대한 기초지식을 습득하게 하고, 심리학의 각 분야에서 개발된 이론들을 토대로 하여 우울, 불안 등의 심리적 문제를 가진 만성 통증 환자를 이해하여 평가하며 치료하는데 필요한 지식을 익히며, 임상에 적용할 수 있도록 한다.

This course is aimed to get basic knowledge of psychology and educate the students to be able to understand, evaluate, and management of chronic pain patients with psychological problems based on the theories developed in the psychological field and to apply this knowledge to the clinical situations.

861.823* 의료 커뮤니케이션 1-16-0
Communication in Healthcare

전반적인 의료커뮤니케이션의 개념과 원활한 인간관계의 중요성 및 적절한 의사소통 기법을 습득하여, 의료체계 내에서 개인의 커뮤니케이션 능력을 향상시키도록 학습한다.

This course deals with the concepts of communication in healthcare, importance of interpersonal relationships and proper communication skills. Students will improve their personal communication ability in healthcare system.

861.5801 구강병리 슬라이드 토론회 1-16-0
Oral Pathology Slide Conference

본 강좌에서는 구강약아민질환 중 치과 환자에게서 가장 흔하게 볼 수 있는 질환들, 즉 치근단 질환, 구강소진, 치과성 종양, 감염성 질환, 구강의 다양한 암종 및 육종, 치성양 및 치성종양 등에 대한 조직병리학적 소견을 슬라이드를 통하여 이해하고, 각 질환에 대한 진단을 보고 논의하는 과정을 거쳐, 수강자들이 기본적인 구강조직병리학 및 치료학에 대해 아질 수 있도록 한다.
Recent development in endodontic technique and equipment is amazing. In order to save the infected tooth and to recover its proper function by doing root canal treatment, sometimes we may face to certain obstacles such as calcified canals or broken instrument. Furthermore, to achieve efficient treatment result, use of Nickel-titanium rotary file and warm vertical condensation devices are recommended. In this course, we will review current articles regarding concept, technique and success rate of these treatment options and incorporate these systems including microscope in the very specific root canal treatment practice such as broken file removal, negotiate calcified canal, and finding MB2.

861.S804 스포츠치의과학과 Mouthguards 1-8-24
Sports Dentistry and Mouthguards

스포츠와 관련된 구강 악인 및 부위의 외상성 흉상의 역학, 예방 및 관리, 운동과 외상과의 관계, 운동효과를 오염시키기 위한 저기 흉상방법에 대해 알아본다. 또한 치아외상의 저속, Mouth guard의 작용 기전문물과 효과, Mouthguard의 종류와 제작법에 대해 안내하고 강화한다.

This course is intended as an introduction to providing the epidemiology, prevention and diagnosis of oro-maxillofacial traumatic injuries related to sports activity as well as treatment of sports injuries and fabrication of mouthguards to improve the efficiency of sports.

861.S805 심미색상학습 1-12-12
Esthetic Color Training

치과 심미수복 분야에 적용할 수 있는 색상 및 광학적 성질에 관한 기본 개념 및 이를 이해하기 위한 연습을 방행하는 과목으로 본 과목을 통하여 심미수복 과정에서 광학적 특성에 관한 이해를 높일 수 있다. 본 과목에서는 색상 및 색상 측정, 색상 이해에 대한 심미성에 영향을 주는 광학적 특성, 자연의 광학적 특성, 심미 특수제(레진, 세라믹 및 의용체 재료)의 광학적 특성, 색상 교육 및 연습, 색상 조화과정, 색상 표현방법 등에 관한 강의와 이에 따른 실습을 행한다.

In this class, basic principles in color and optical properties related to esthetic dental restoration will be introduced theoretically and training for basic color science will be included. From this class, students will study on the practical principles for the esthetic dental color matching. In this class, the following topics will be lectured, and corresponding training course will be provided; color and colorimetry, other appearance attributes, optical properties of natural teeth, optical properties of esthetic dental materials(resin composites ceramic and prosthetic material), color vision, education and training in dentistry, color matching, communication of color and appearance, and reproduction of color and appearance.
presentation and discussion.

861.S807 Tissue Engineering for Tissue Repair

- to understand the structure and mechanism of the instrument used for treatment in dental clinic and to have creative thinking for making a new instrument.
- to understand the structure and working principles of the instrument for dental research and to be able to analysis, design and implement a new experimental device.

861.S808 Anterior Esthetic Restoration

- to learn the basic concepts and their clinical implications of the esthetic restorative dentistry.
- to learn the basic concepts of esthetics especially in the anterior region and includes the scope of various treatment options that can be applied for the anterior esthetic treatments.

861.S809 Clinic Based Minor Dentoalveolar Surgery

- to understand the structure and mechanism of the instrument used for treatment in dental clinic and to have creative thinking for making a new instrument.
- to understand the structure and working principles of the instrument for dental research and to be able to analysis, design and implement a new experimental device.

861.S811 Periodontal and Implant Surgery

- to perform periodontal and implant surgery at a model by themselves. They will perform modified flap, mucogingival surgery, and implant surgery.

861.S812 Differential Diagnosis of Oral and Maxillofacial Disease

- to understand the basic advanced knowledge, skills and principles of minor or- al and maxillofacial surgeries.
- to understand the basic advanced knowledge, skills and principles of minor or- al and maxillofacial surgeries.

861.S813 Contemporary Issues in Dental Practice Management

- to understand the basic advanced knowledge, skills and principles of minor or- al and maxillofacial surgeries.
- to understand the basic advanced knowledge, skills and principles of minor or- al and maxillofacial surgeries.

861.S810A Technology in dentistry (Dental Engineering)

- to understand the basic advanced knowledge, skills and principles of minor or- al and maxillofacial surgeries.
- to understand the basic advanced knowledge, skills and principles of minor or- al and maxillofacial surgeries.
Neurosurgery

The course will discuss the meaning of the cross-sectional imaging in examination for pre- and post-dental implant procedures. They study the imaging modalities and principles of radiological prognosis and results of the treatment. The students will the selection of proper cases and for the prediction of the should have firm knowledge on the diagnostic imaging for implant surgeries.

Ophthalmology – ENT

An ophthalmology and ENT instruction where there is a group is to acquire the basic knowledge of ophthalmology and ENT fields. From the observation of these diseases in these fields, students can understand more related to oculo-maxillofacial regions.

Clinical Oral and Maxillofacial Implant Surgery

This course is intended as an introduction to providing the knowledge for implant surgery in orthodontics. The course is provided with one hour. After finishing this course, there will be presented and discussed. First, diagnostic information will be provided to students and the complications of associated with the implant surgery, participants who complete this lecture will have basic ability to treat the various and possibly difficult cases of implant surgeries.

Diagnostic Imaging for Dental Implant

Dental implant is a trend in dental clinic. General dentists should have firm knowledge on the diagnostic imaging for the selection of proper cases and for the prediction of the prognosis and results of the treatment. The students will study the imaging modalities and principles of radiological examination for pre-and post-dental implant procedures. They will discuss the meaning of the cross-sectional imaging in implant radiology.

Dentistry for the People with Disabilities

Clinical Application of Basic Orthodontic Knowledge

This course is intended to provide the knowledge of orthodontics to students. Real patients’ cases from the simplest to the more complicated cases will be presented and discussed. First, the students will learn about the diagnostic information and the complications that will be provided to them. After finishing this course, the students will be able to provide basic ability to treat the various cases of orthodontics.
monitoring in operating room and out-patient general anesthesia room. This course also provides current topics about conscious sedation, deep sedation, sedative drugs and emergency care during dental treatment.

861.S821 치과의원에서의 PACS 환경구축 1-12-9
PACS in Local Dental Clinics

치과의원에서 방사선영상장치가 디지털로 전환됨에 따라 디지털 방사선영상장치에 대한 기본적인 원리를 이해하고 영상정보를 네트워크 구축하는 PACS에 대한 필요성을 중요하게 되었다. 따라서 본 강좌를 통하여 디지털방사선영상의 표준인 DICOM에 대해 이해하고 영상의 특성, 의료정보시스템, 관련된 법률, 치과의원에서의 PACS 환경구축을 구축할 때의 고려사항 등을 이해하고 PACS 환경의 방향을 건축하여 실제 적용사례들을 교육한다.

PACS (Picture Archiving and Communication System) is essential for digital environment in dental clinic because the need for digital radiographic machine is increased. The dentist has to understand the basic principle of the digital radiographic image and network of the patients' information and radiographic image data. The students will study on the DICOM which is the standard for radiographic image, the digital radiographic image characteristics, the hospital information system, the related existing laws, and considerations for PACS environment. Also they will observe a dental hospital and clinic in PACS environment.

861.S822 코골이와 수면무호흡증 최신치료학 1-16-0
Advanced course for diagnosis and dental management of snoring and sleep apnea

수면 중에 빈번하게 나타나는 수면호흡장애로 코골이와 수면무호흡증은 고혈압, 심부전, 뇌졸중, 당뇨 등과 같은 생리학적으로 중요시한 질병의 발병과 밀접한 관계를 보이는 위험 인자로 작용하고 있다. 본 교과목의 목적은 코골이와 수면무호흡증에 대한 필요성을 중요하게 되었다. 디지털방사선영상의 표준인 DICOM에 대해 이해하고 영상의 특성, 의료정보시스템, 관련된 법률, 치과의원에서의 PACS 환경구축을 구축할 때의 고려사항 등을 이해하고 PACS 환경의 방향을 건축하여 실제 적용사례들을 교육한다.

861.S823 교합조정의 실제 1-8-24
The reality of occlusal adjustment

교합학의 기본이론의 숙지를 통해 각 증례에 맞는 실제 환자에서의 교합조정법을 실습을 통해 이해한다. 이론 및 실습으로 배운 각종 보철물의 구강내 장착시 교합과 실제 환자상황에서 발생하는 교합과 기능과정중에 설정한 교합과의 차이점을 알아보고 이를 각 환자에 맞게 조절하는 방법을 숙지한다.

Through the practice of occlusal adjustment on the mounted casts of model patients, students can understand the reality of occlusal analysis and correction which based on the basic knowledge of occlusion.

Student should be understood the differences in occlusion between master cast and real patient and can manage the differences in the patients’ mouth. At the same time, student should be familiar with the procedures at the time of prostheses delivery to patients.

861.S824 치의학과 인간 1-16-0
Humane Dentistry

치의사는 직접적인 도움을 수행하는 기계가 아니며, 환자도 수술학적 기계가 아니다. 치의사와 환자는 자기 성찰을 하는 인간이라는 기반에서 만난다. 구체적으로, 치의학은 치의과학, 치과 의술, 치과의료라는 세 가지 축면을 가지며, 자기 과학철학, 기술 철학, 의학적 인간학로서의 철학과 만난다. 이 세 가지 분야를 아우르는 의학적 철학을 주제로 치과학과 철학의 대화지를 토론한다.

Dentists are not a technician who does deliver the treatment to patients in mechanical manner. Neither patients are not a machine that need to be fixed. The relationship between dentists and patients must be based on humane manner. Dentistry are mainly composed by three major aspects: dental science, clinical dental techniques, and dental care. They are related with philosophy of dental science, philosophy of dental technique, and medical anthropology and dental care ethics respectively. In this lecture course, students can have an opportunity to understand the dentistry and it’s related philosophies. Furthermore they can set their own concept as a humane clinician in dentistry.

861.S825 치과진료 후 합병증 관리 1-16-0
Management of complication after dental treatment

모든 치의사들은 치과 치료 후 다양한 합병증들을 반드시 경험하게 된다. 합병증은 의료과오와 구별되어야 하며 정상적인 진료를 하였을 경우에도 발생할 수 있다. 대부분의 합병증은 적절한 조치를 취한다면 큰 문제점 없이 해결될 수 있다. 그러나 합병증에 대한 처치가 부적절하면 치명적인 결과를 초래하거나 의료분쟁으로 진행될 수 있다. 이 과목의 목적은 치과 치료 후 발생할 수 있는 합병증을 방지하고 치과진료를 제공할 수 있는 능력을 보유하는 것이다.

All dentists undergo certainly a variety of complications after dental treatment. Complications should be distinguished with malpractice and can occur in spite of adequate treatment. Most of complications can be solved without large problem if adequate management be performed. However, inadequate management can cause fatal results and medicolegal problems. The goal of this course is to give students an ability to offer a dental treatment of good quality through an in-depth study of cause, management and prognosis of a variety of complications.

M2043.000200 보철수복후의 예후 분석 1-16-0
Analysis of post-restorative prognosis

이 과목에서는 수복 후의 예후에 대한 분석을 목표로 한다. 보철 수복 후 실제로 발생하는 실패, 2차 수복, 시멘트 용해, 파절, 교합 등에 대한 실패의 원인을 분석하고 치료가 필요할 때의 대처방안을 제시한다.
The first phase orthodontic treatment in growing patients

Germany, Yemen, and Vietnam, and explain its historical meaning and background. This lecture will provide study on the difference and separation of the dentistry between South Korean and North Korea in institutional, academic, and experimential aspects, and the necessity and methodology to overcome the gap to the students who will lead the dentistry under the United Korea in the future.

Understanding of the restorative dentistry

Restorative treatments of the teeth involved with dental caries, attrition, fracture and esthetic problems require diverse range of knowledge comprising anatomy, materials as well as prosthetics. The knowledge on anatomy is not limited to tooth morphology but covers periodontal structures and whole maxillofacial anatomy and physiology. For proper restorative...
treatments, prosthodontic expertise is essential including occlusion theory and mandibular movement. Comprehensive understanding of state-of-the-art dental materials is also indispensable. Currently, novel computer-related digital technology are changing not only in clinical practice and also educational curriculum of dentistry. Therefore, learning digital dentistry from basic concept to clinical application becomes more and more mandatory. This course deals with digitalized restorative treatment from the perspectives of anatomy, materials and prosthodontics and for each student, the tooth preparation practice using Simodont Simulator is provided for further understandings.

M2043.000600 치과보철학에서의 디지털 기술의 이용 1-16-0

Use of digital technique in prosthetic dentistry

The computer-related technology introduced to clinical dentistry has changed the dental treatments. Although the treatment using computers on the restorative dentistry is now used in dental clinics, it seems that a curriculum of the university is not focusing on this. Acquiring knowledge on the dentistry using computers from the basic concept to the application in clinics is necessary for the development of dentistry in the future. In this course the methods using computers currently used in dentistry will be studied including the theory and practice of tooth preparation with Simodont simulators, computer-guided implant treatment planning and stent for implant surgery using commercial softwares, generating computer models based on CT scans using commercial and free softwares and latest trend in digital dentistry.

M0000.017000 치과의사의 사명과 인생 1-16-0

Mission and Life of Dentist

A professor Emeritus of Dentistry has taught students for more than 30 years and has experienced firsthand the process of change in dentistry. So, based on your past experience, they can accurately present your future dental direction. This lecture will allow honorary professors to show students their personal and human experiences. This course aims to enhance students' understanding of dental history, including past and present, and to present basic knowledge and prospects of future dentistry for students who will be future dentists.

M0000.020400 치과의료 인력의 교육과 경영 1-16-0

Human Resource Development and Management in Dental Health Care Organizations

This course explores theories and methods fundamental to the effective and efficient management and development of human resources (dentists, dental hygienists, nurse assistants, dental technicians, and other types of employees) in dental care organizations ranging from clinics to large dental facilities. As future leaders of organizations of dental care, students will learn principles, strategies, and methods for the selection, allocation, management, development and evaluation of human resources.
의학대학원
School of Medicine
Education in internal medicine and clerkship will be the most important cornerstone for students to grow as qualified and competent doctors in general and internal medical fields. Students will face actual patients in wards, analyze their problems, observe various procedures, and have an opportunity to practice their knowledge and skills on artificial or actual patients.

Surgery and Clerkship

Students will learn about various aspects of surgical medicine such as cardioiology, pulmonology, gastroenterology, hemato-oncology, endocrinology, infectious disease, allergy, nephrology, and rhematology in this course. They will apply what they learned in basic medicine courses in their second year to practical clinical fields and acquire the ability efficiently to discover and solve patients' problems by themselves. Education in internal medicine and clerkship will be the most important cornerstone for students to grow as qualified and competent doctors in general and internal medical fields. Students will face actual patients in wards, analyze their problems, observe various procedures, and have an opportunity to practice their knowledge and skills on artificial or actual patients. This course will cover the major groups of microorganisms and host immune responses to provide an understanding of the cells and tissues of the immune system and an introduction to infectious diseases. Students will gain an understanding of the mechanisms of microbial diseases and the normal and abnormal functions of the immune system. Tutorials will emphasize problem-solving skills and the integration of independently learned knowledge.

Pharmaceutical Education

The course is designed to guide students in gaining a better understanding of the pathophysiology and management of infectious disease, careful use of antimicrobials, awareness of and approach to nosocomial and device associated infections, and appropriate use of microbiology lab data.

Clinical Immunology

This course will cover the major groups of microorganisms and host immune responses to provide an understanding of the cells and tissues of the immune system and an introduction to infectious diseases. Students will gain an understanding of the mechanisms of microbial diseases and the normal and abnormal functions of the immune system. Tutorials will emphasize problem-solving skills and the integration of independently learned knowledge.

Infectious Disease

This course is designed to guide students in gaining a better understanding of the pathophysiology and management of infectious disease, careful use of antimicrobials, awareness of and approach to nosocomial and device associated infections, and appropriate use of microbiology lab data.
gical methods, and basic technical skills and learn to be able to perform primary care of patients.

911.703A* 산부인과학 및 실습 5-30-170

Obstetrics/Gynecology and Clerkship

This basic course is for undergraduate students. Its aim is to enrich students' understandings of the normal physiology and diseases of the female reproductive system in terms of pregnancy, common gynecologic disorders, and reproductive endocrine system abnormalities. Students will be expected to be familiar with obstetric and gynecologic procedures and the basic physiologic mechanisms related to pregnancy and female fertility. They will learn to take an exact obstetric and gynecological history of each patient, study the normal processes and complications of pregnancy, explore common benignancy (myoma and ovarian tumor) and malignancy (cervical and ovarian cancers) of the female reproductive system, and examine common reproductive endocrine disorders (infertility and menopause).

911.704A* 소아과학 및 실습 5-30-170

Pediatrics and Clerkship

Pediatrics is a field in clinical medicine that covers the systemic knowledge, techniques, and interview skills applicable to the practice of medicine as a general physician.

911.706* 정형외과학 및 실습 3-16-80

Orthopedic Surgery & Clerkship

This course will cover the systemic knowledge, techniques, and interview skills applicable to the practice of medicine as a general physician.

911.707* 영상의학 및 실습 3-8-64

Radiology & Clerkship

Students will learn basic and clinical neuroscience systemically in this course by overviewing the pathophysiology of neurological disorders. The course will be helpful to their understanding of the principles of the diagnosis and treatment of diseases. On the basis of neuroanatomical knowledge, students will learn the skills for neurologic examinations. They may be able to see patients with major neurological disorders and practice the methods for diagnosis and treatments. Through the course, students will have a taste of clinical practice.
응급의학 및 실습 3-5-80

Emergency Medicine & Clerkship

응급의학에 고유한 학문적 영역인 소생술의학, 외상학, 응급의
로테이션, 재난의학, 환경상식, 중독학, 응급의료법 등과 임상과
에서 중요한 응급의학에 대한 간단 및 저작에 관련된 임상적 지식
을 배우고, 실습을통하여 응급처치지식을 습득한다.

This course will study the clinical knowledge of re-
suscitation, traumatology, EMSS, disasters, environmental
injuries, toxicology, and other clinically important emergency
situations and obtain the skills for emergency procedures.

임상특과 4-93-0

Advanced Clinical Medicine

본 과목은 1~3학년에서 필수과목으로 다루어지지 않은 임상의
세분화된 여러 과목을 통합하여 그 중 입차의사로서 반드시 알아야
하는 필수적인 내용을 강의형식으로 교육한다. 이 과목을 통하
여 학생들은 임상의 세분화된 각 과의 진료 및 학문분야를 파악하
고 학생 수준에서 필요한 교수를 수강할 수 있을 뿐 아니라 직
 접적인 환자전로에 의하여 질병 및 예방 등 진료지원 분야에 대해서도
폭넓게 접할 수 있다. 학생들은 4학년 임상실습과목을 선택하
는데, 더 나아가 자신의 전공선택에도 도움을 받을 수 있다.

This course is designed to teach students the core knowl-
dge in diverse clinical care other than major subjects which are
introduced mainly in third degree, and also basic knowl-
dge of rehabilitation and preventive medicine as a primary
physician. This lectures included the contents about dermatol-
ogy, urology, otolaryngology, ophthalmology, anesthesio-
logy, plastic surgery, radiation oncology, rehabilitation medi-
cine, family medicine, clinical pharmacology, and nutritional
medicine. It helps the student to choose the selective clerk-
ship and furthermore the main subject after graduation.

의학연구 4-0-130

Research in Medicine

본 과목은 기초의학 연구, 임상의학 연구, 국내외 의료관련기관
인턴십 등 교수 개개인이 개설하거나 학생이 스스로 개발한 다양
한 개별 코스로 구성된다. 이는 3~4학년에 걸쳐 임상의학의 이론
과 실습 교육을 마친 학생들에게 기초의학 연구로 회귀할 기회,
혹은 임상과학 과정에서 개인적으로 관심 있는 분야를 보다 심화학
습, 연구를 기회, 혹은 증상을 알았고 다양한 진료를 모색할 기회
를 제공함으로써, 종합병원의 임상과 기초를 넘나드는 창의적 연구능
력을 강화하고 다양한 진로모색의 기회를 제공하기 위한 것이다.

This course, in the students can build up a course for one-
self or select a subject, in which he / she is interested, out
of many courses opened by faculties in the area of basic
science research, clinical science research, internship in do-
meric or overseas medicine-related institutions. This course
offers students of the graduating class an opportunity to go
back to the basic science research or an opportunity to ex-
perience more advanced learning and research in clinical sci-
cence or an opportunity to search more diverse path in life.

임상수행능력종합훈련 및 평가 3-0-90

Clinical Performance Training and Examination

본 과목은 3~4학년 임상의학과에서 실습교육을 마친 학생들의
종합적인 임상수행능력을 훈련하고 평가하는 것을 목적으로 한다.

환자면담, 신체진찰, 환자와의 의학적 정보교환, 환자-의사 상호작
용의 능력을 수행수준에서 훈련하기 위해 표준화 환자를 활용하
며, 필수적, 보편적 지식으로 구성된 총 8~12개의 스테이션을 개설하
며 일반의사로서 필요한 문제해결능력, 통합된 지식수수-태도를
평가한다. 본 과목은 임상학생들에게 전문가, 재활의학
과의 기본적인 능력을 통합할 기회를 제공함으로써 임상 현장에
서의 임상력을 준비하도록 한다.

The course is designed to train and evaluate clinical per-
formance of students of the graduating class who just fin-
ished clinical clerkship. It’s domain of training covers every
aspects of clinical performance such as history taking, phys-
ical examination, information sharing and patient-physician
interaction, and for the purpose of reality it uses standard-
ized patients. At the end of the course students should
pass 8-12 examination stations comprised of essential, and
common cases which are designed to assess problem solving
competence and integration of knowledge-skill-attitude do-
main essential to general physician. This course provides stu-
donents opportunity to integrate basic competency in knowl-
dge, skill, attitude and prepare to field practice.

사회-의사-사회 5 3-57-30

Patient-Doctor-Society 5

본 과목은 학생들을 하여금 생활 및 산업환경에서 인지되는 환
경요인과 조건이 인체에 미치는 영향을 이해하고, 환경 및 산업보
건에 관한 지식과 기술을 질병예방 및 건강증진을 위하여 활용할
수 있도록 가르치는 것을 목적으로 한다. 이 과목을 통하여 학생
들은 여러 분야에서 환경을 평가할 기회를 가질 수 있으며, 작업,
환경과 관련된 병리 및 신체 검진을 익히고 폭로의 정도를 평가하
며 심리지식에 대한 독성, 작업 환경에 대한 평가, 예방 전략, 신
체 장에 대한 평가 등에 대한 지식을 익힐 수 있다.

The course is designed to guide students in gaining a bet-
ter understanding of the effect of occupational and environ-
mental factors recognized in general and industrial environ-
ment, and acquiring the knowledge and skills of occupational
and environmental health for disease prevention and health
promotion. It provides opportunities to evaluate patients: im-
proving skills in taking the occupational/ environmental his-
tory and physical exam; learning about exposure assessment,
reproductive toxicity, workplace intervention, prevention strate-
gies and disability evaluations.

- 1011 -

911.808A
Integrated Medical Science 2

This course will train and evaluate students’ ability to take care of patients as primary physicians by integrating knowledge and skills, problem solving ability, comprehensive thinking that they have learned in their clinical courses. Students will acquire competencies in clinical practice by solving the medical or non-medical problems of patients and coping skills in clinical practice field. This course provides students opportunity to integrate various contents mastered in academic years by focusing on the problems of patients.

911.809
Anesthesiology and Pain Medicine

The course will cover the basic skills in anesthesia, airway management, cardiopulmonary resuscitation, management of critically ill patients, and pain management.

911.810
Dermatology

This course will cover the basic structure and functions of skin; pathophysiology, diagnosis, and treatment of common dermatologic diseases; and clinical applications.

911.811
Thoracic and Cardiovascular Surgery

This course will study the pathophysiology and treatment of various thoracic organs including the heart, aorta, lungs, esophagus, pleura, mediastinum, and chest wall. Students will be expected to understand the following: 1) The anatomy and physiology of thoracic organs; 2) the pathophysiology associated with various thoracic operations (for perioperative patient care); and 3) the ability to diagnose and to treat patients adequately.

911.812
Neurosurgery

This course will cover general and emergency neurosurgery. Students will study general neurosurgical diseases, pathophysiology, clinical courses, management, and future direction. They will also have an opportunity to experience clinical techniques and to inspect clinical courses through practice.

911.813
Urology

This course will study the urogenital system and its disorders as well as the diagnosis and treatment modalities of clinically important urological disorders. It will include bedside clerkship in urological oncology, urolithiasis, endourology, voiding dysfunction, female urology, andrology, and pediatric urology.

911.814
Otolaryngology

This course will cover all kinds of diagnostic methodology and diseases through an understanding of the anatomical structures and functions of the ear, nose, throat, head, and neck areas. Topics will include the general contents of...
Clinical Pharmacology and Clerkship

Clinical Pharmacology is one of the subspecialties of medicine which investigate causes of variability of drug response and conduct various education, research and clinical practice to maximize the effectiveness of drug therapy and achieve personalized optimal pharmacotherapy which are essential knowledge and skills to be a doctor, by case studies of optimal pharmacotherapy, also experience examples of translational research. To study the characteristics of health patterns in Korean communities along with the principles of primary health care and community medicine. Students, in small groups, will undertake fieldwork in communities. They will apply managerial and analytical techniques to the resolution of problems that confront these communities.
research which bridges pharmacology (mechanism of drug) and clinical medicine (individual pharmacotherapy) during the clinical pharmacology clerkship.

M2076.000100* 중환자의학 1-24-2

Critical Care Medicine

This course is designed to guide students in gaining a better understanding of the basic aspects of critical care medicine by teaching the clinical characteristics and the pathophysiology of critical care patients, patients monitoring, devices used in intensive care units, and the multimodal treatments. The student will be a working member of the intensive care unit. He/She will be teamed with a resident, share the patient’s information, and participate in the therapeutic and diagnostic procedures.

M2076.000200* 인체해부학 5-48-120

Human Anatomy

The course is designed to guide students in gaining a better understanding of the basic aspects of critical care medicine by teaching the clinical characteristics and the pathophysiology of critical care patients, patients monitoring, devices used in intensive care units, and the multimodal treatments. The student will be a working member of the intensive care unit. He/She will be teamed with a resident, share the patient’s information, and participate in the therapeutic and diagnostic procedures.

M2076.000300* 조직학론 1-10-16

Introduction to Human Histology

The course is designed to guide students in gaining a better understanding of the basic aspects of critical care medicine by teaching the clinical characteristics and the pathophysiology of critical care patients, patients monitoring, devices used in intensive care units, and the multimodal treatments. The student will be a working member of the intensive care unit. He/She will be teamed with a resident, share the patient’s information, and participate in the therapeutic and diagnostic procedures.

M2076.000400* 인체조직과 생리학 5-55-52

Human Histology and Physiology

The course is designed to guide students in gaining a better understanding of the basic aspects of critical care medicine by teaching the clinical characteristics and the pathophysiology of critical care patients, patients monitoring, devices used in intensive care units, and the multimodal treatments. The student will be a working member of the intensive care unit. He/She will be teamed with a resident, share the patient’s information, and participate in the therapeutic and diagnostic procedures.
In this course, first year students can acquire functional and morphological knowledge of the nervous systems both in peripheral and central. This subject includes laboratory practice on the anatomy and physiology of human brain.

Selective Course 1

이학과 접목된 다양한 분야(multidisciplinary area)를 다루며 학생들에게 복잡한 시기를 제공하는 한편 기초의학 분야의 다양한 적용을 경험하여 기초의학의 중요성을 깨닫도록 한다. 본 교과목은 학생의 관심에 따라 다양한 과목을 학생이 선택하여 수강할 수 있게 함으로써 학생 개개인의 다양성과 학습수준에 따른 학습을 유도할 수 있도록 한다.

This subject can provide broad perspectives on medicine for students by covering multidisciplinary areas. In addition, the students can experience the application of basic medical knowledge and realize the importance of basic medical sciences. The students can select the specific subject according to their interest and can learn the subject consistent with their knowledge level.

Selective Course 2

The objective of ‘Human·Society·Medicine 2’ is to enable first year students to understand ethics in medicine and management of microbial and parasitic infections, by understanding the characteristics of microbes and parasites, the interaction of microbe/parasite-host or the microbe/parasite-environment. Students will learn the introduction of the bacteriology, mycology, virology and parasitology (helminthology, protozoology and medical entomology) by the lecture and experiments and understand the basic principles of the microbe/parasite-host interaction, treatment and prevention of various medically important microbial and parasitic infections and tropical medicine to the climate change.
for the enhancement of ethical thinking and to improve their communication skills.

**M2076.001600**

**Infection and Immunity**

This course is designed to cover the major groups of microorganisms and host immune responses to provide an understanding of the cells and tissues of the immune system and an introduction to infectious diseases. Students will gain an understanding of the mechanisms of microbial diseases and the normal and abnormal functions of the immune system. Tutorials will emphasize problem-solving skills and the integration of independently learned knowledge.

**M2076.001700**

**Introduction to Clinical Medicine 1**

The Introduction to Clinical Medicine (ICM) 1 is a weekly longitudinal course that integrates the basic and clinical sciences by providing the clinical exposure during the first year of medical school. This subject will guide students in gaining appropriate attitudes as a doctor and patient centered approach, and in acquiring basic physical examination and foundational communication. This course includes lectures about medical records and imaging as well as a pedigree in the context of concurrent courses.

**M2076.001800**

**Medical Research 1**

This course includes lectures focused on medical research such as biostatistics, laboratory technologies and so on. In addition, brief description of research laboratories in which students can participate will help students to select their own topics for ‘Medical Research 2’.

**M2076.001900**

**Integrated Medical Science 1**

This course will train and evaluate students’ ability by integrating knowledge and skills, problem solving ability, comprehensive thinking that they have learned in their basic science education courses such as ‘Human Anatomy’, ‘Introduction to Human Histology’, ‘Human Histology and Physiology’, ‘Human Biochemistry’, ‘Basic Neuroscience’, ‘Pathologic Basis of Disease’, ‘Basics of Infection’, ‘Basics of Immunology’, ‘Understanding of Pharmaceutical Drugs’ and so on.

**M2076.002000**

**Hematology and Oncology**

This course is designed to cover the major groups of microorganisms and host immune responses to provide an understanding of the cells and tissues of the immune system and an introduction to infectious diseases. Students will gain an understanding of the mechanisms of microbial diseases and the normal and abnormal functions of the immune system. Tutorials will emphasize problem-solving skills and the integration of independently learned knowledge.

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[For the rest of the document, please refer to the original Korean text.]
laboratory diagnosis, staging system and the principle of treatment (surgery, radiotherapy, systemic chemotherapy and targeted therapy).

M2076.002100* Metabolism and Endocrine System

In this course, students are expected to understand the mechanisms of hormone synthesis and action, and be able to apply the concepts to the human body. Moreover, comprehension of the influence of each hormone to human organs and its evaluation methods is required. Based on this, students will learn the basic pathophysiology of endocrine and/or metabolic diseases related with glucose metabolism (e.g. diabetes), obesity, lipid metabolism, thyroid, bone metabolism, adrenal or hypothalamic-pituitary, reproduction, and/or metabolic diseases related with glucose metabolism (e.g. diabetes), obesity, lipid metabolism, thyroid, bone metabolism, adrenal or hypothalamic-pituitary, reproduction, and genetics etc. Ultimately, students should acquire the ability to apply the learned knowledge to the diagnosis and treatment of diseases.

M2076.002200* Neurons and Endocrine Systems

This subject can provide broad perspectives for medicine to the students by covering multidisciplinary area. The course is designed to guide students in gaining a better understanding of medicine in societal, humanistic context, and in attaining a holistic perspective of patient and human life and health.

M2076.002300* Selective Course 3

This course consists of lectures and clinical practice. Students should be able to combine basic medical science and clinical science through this course which offers early clinical experience. Also, the students should have a patient-centered mindset and attitude, and be able to properly administer the physical examination, medical interview skills, and basic clinical skills.

M2076.002400* Human Society·Medicine 3

This subject can provide broad perspectives for medicine to the students by covering multidisciplinary area. The students can select the specific subject according to their interest and they can learn the subject consistent with their knowledge level.

M2076.002500* Respiratory System

This course is designed to guide students in gaining a better understanding of medicine in societal, humanistic context, and in attaining a holistic perspective of patient and human by reviewing multiple aspects of the relationship of health and disease, patient’s illness behavior, and the relationship of daily life and health.
In this course, students will be expected to have basic knowledge of the anatomy, physiology, and pathology of the respiratory system because the course will integrate basic and clinical medicine. Students will study the structure and function of the respiratory system; pathogenesis and pathophysiology of respiratory diseases; various diagnostic tools; preventive measures; therapeutic principles; and detailed therapeutic methods for commonly encountered respiratory diseases such as tuberculosis, obstructive airway diseases, interstitial and occupational lung diseases, neoplastic lung diseases, and pulmonary vascular diseases.

**Circulatory System**

This course will provide an understanding of the structure and function of the cardiovascular system and acquire the ability selectively to apply their skills to each patient by learning the pathophysiology and clinical features of important cardiovascular diseases as well as invasive and non-invasive diagnostic methods. Through the study of medical, surgical, and therapeutic principles and of preventive measures for important cardiovascular diseases, students will acquire integrated knowledge in the cardiology field.

**Digestive System**

This course covers the basic and clinical knowledge and information pertaining to physiology, epidemiology, and pathophysiology, or the treatment of diseases which originate from the digestive system including the esophagus, stomach, small bowel, colon, pancreas and hepatobiliary system. It also includes clinical nutrition, and the strategy for the prevention and screening of various cancers originated from the digestive tract.
the pathophysiology of nutrition deficiency diseases and obesity in pediatrics, and the outline of pediatric emergency/severe diseases in growing period/adolescent medicine.

3) Students will learn about the pathophysiology and diagnostic approach of benign and neoplastic diseases in female reproductive system, and the outline of infertility.

4) Students will learn about the pathophysiology of the diseases of breast and testicles, male reproductive system, and prostate.

M2076,003200*  
Introduction to Clinical Medicine 2-2

The Introduction to Clinical Medicine (ICM) 2-2, together with ICM 1 and ICM 2-1, is a weekly longitudinal course of 'Human System & Diseases' continued for a year. It aims at teaching freshmen and sophomores to be able to acquire knowledge and technology of integrated subjects in the clinical context to be prepared for clinical training. ICM 2-2 will guide students in acquiring physical examination by system and advanced communication skills.

M2076,003300*  
Selective Course 4

Selective Course 4 is aimed at improving the students' ability by inquiring knowledge and technology of integrated subjects in the clinical context to be prepared for clinical training. ICM 2-2 will guide students in acquiring physical examination by system and advanced communication skills.

M2076,003400*  
Human · Society · Medicine 4

Human · Society · Medicine 4 is aimed at improving the competencies related to 'The Evidence and Decision-making.' Based on the collection and evaluation of the evidence, students can experience evidence-based medicine and cultivate thinking ability for ethical conflict resolution through case debate on decision making.

M2076,003500*  
Medical Research 2

Medical Research 2

In this course, students will learn about physiologic characteristics and healthcare of fetus, newborn, child, adolescent, adult and elderly people. This course will also cover the ba-
sic principles of embryogenesis, chromosome structure and functions, mendelian inheritance, mitochondrial diseases, and multifactorial inheritance. After this course, the students can apply their basic physiology and healthcare knowledge to clinical situations that will be learned at ‘Human System and Diseases’ courses.

**M2076.003800**  
**Human · Society · Medicine 5**

Human · Society · Medicine 5 is ‘the doctors and healthcare policy’. This course uses a variety of teaching methods, such as case discussions and talk shows. ‘Humans · Society · Medicine 5’ mainly talks about ‘Doctors and Healthcare policy’. This course uses a variety of teaching methods, such as case discussions and talk shows about healthcare policy, doctors’ role and leadership in field, healthcare administration, medical policy and system, health insurance and management for healthcare quality.

**M2076.003900**  
**Human · Society · Medicine 6**

Human · Society · Medicine 6 is ‘taking care of patient’. Various methods such as discussion and presentation which follow a written scenario are included in this course, in order to deal with palliative care, interaction to the family of dying patient, psycho-social presentation which follow a written scenario are included in order to deal with palliative care, interaction to the family of dying patient, psycho-social presentation which follow a written scenario.

**M2076.004000**  
**Clinical Reasoning 1**

Clinical Reasoning 1, this course is teaching the process and methodology of clinical, logical reasoning for defining the origin and mechanism of symptom and sign, which is the external manifestation of disease or disturbance of body, by Case Based Learning. Students already learned about the patho-physiology of diseases in preceding courses, and will be exposed to real patient and learn medical approaches to them after this course. This course is a bridge linking those two learning experiences.

**M2076.004100**  
**Introduction to Clinical Medicine 3**

Introduction to Clinical Medicine 3 (ICM3) aims to prepare medical students to meet a real patient through orientation and practical education, just before the clinical clerkship. This course is designed to deal with essential contents for all clinical departments since students divided into several groups for their clerkship. ICM3 will guide students in preparing for their clerkship by comprehensive understanding about hospital system, various rophys of patients, tests, and the basics of treatment.

**M2076.004200**  
**Longitudinal Integrated Clerkship**

Longitudinal integrated clerkship is aiming to provide students longitudinal and integrated patient encounter to develop holistic and integrated approach to patients while following-up the treatment process of the patients. Students should follow up their patients by checking the medical record or conducting medical interviews when the patients visit the outpatient clinic or admit to the ward. Through this course, students will be able to understand the overall process of patient care and related socio-economic and cultural issues regarding the patient care. Students will meet the faculty as a group every month to discuss the related topics together and receive feedback from the faculty.
Managerial Economics

This is an introduction to economics from the managerial perspective. While it deals with basic micro and macro economics, it goes beyond what is taught in traditional introductory economics courses. We will discuss the nature of modern firms, the design of organizational structure, the compensation system, and the internal labor and capital markets. In short, we will go beyond the traditional production function approach to firms. We will also cover basic accounting procedures, underlying valuation techniques, and the role of financial information in corporate decision making. This develops students' skills for evaluating and acting on financial reports and data relating to applications in business, and be able to perform certain standard quantitative analyses.

981.504* 재무관리 2-30-0

Financial Management

This course is designed for the students to learn the basic concepts, tools and techniques of corporate financial management. The students will learn the fundamental principles of asset valuation and financing in competitive global financial markets. The course also provides fundamentals of financing and investment decisions of a modern corporation. Some major topics include: the time value of money; risk and return; capital investment decisions, the cost of capital; financing and dividend decisions; risk and hedging, among others.

981.505* 마케팅 2-30-0

Marketing

Marketing is a rigorous and disciplined science that applies economic principles and tools to the study of consumer behavior and the development of successful marketing strategies. This course provides an introduction to the most commonly used concepts and models in marketing. We will discuss the concepts and tools that are used to understand consumer behavior, develop effective marketing strategies, and evaluate the performance of marketing programs. This course is designed for students in marketing and related fields.
plies a reasoned framework to the selection of target markets and the optimization of marketing decisions. This course covers concepts, skills, and analytical frameworks essential in marketing strategy, which are the fundamentals for higher level marketing courses.

981.506* 조직행위론  2-30-0

Organizational Behavior

This course considers why some firms consistently outperform others. It is very rare to find a job which does not require working with other individuals. Today's workers need to understand human behaviors to work effectively with other people at work place. Also, the quality of organization is determined by the quality of human resources. It is organizational members that determine how to combine other resources. Thus, in order to be successful and effective in an organization, we need to understand human behaviors. The purpose of this course is to help students develop a fundamental understanding of human behaviors in an organization.

981.507* 전략  2-30-0

Strategy

A number of conceptual and analytic frameworks are presented that will help MBA students to assess the strategic health of firms, understand the strategic issues and tradeoffs that they face, and identify needed improvements. Consequently, the course is not only pertinent for students who intend to pursue general management careers, but also to those interested in management consulting, investment banking, venture capital, and other careers where accurate and concise strategic assessments are vital. The course takes a managerial point of view - emphasizing the framing and resolution of large, multi-dimensional problems. As such, the course asks students to act as advisors to general managers or as line managers themselves. This is done by placing students (primarily th-

rough cases and projects) in diverse managerial situations: large and small organizations, manufacturing and service industries, growing and mature firms, domestic and international settings.

981.508* 관리회계  2-30-0

Managerial Accounting

This course considers why some firms consistently outperform others. It is very rare to find a job which does not require working with other individuals. Today's workers need to understand human behaviors to work effectively with other people at work place. Also, the quality of organization is determined by the quality of human resources. It is organizational members that determine how to combine other resources. Thus, in order to be successful and effective in an organization, we need to understand human behaviors. The purpose of this course is to help students develop a fundamental understanding of human behaviors in an organization.

981.509* 경영정보  2-30-0

Information Technology

This course considers why some firms consistently outperform others. It is very rare to find a job which does not require working with other individuals. Today's workers need to understand human behaviors to work effectively with other people at work place. Also, the quality of organization is determined by the quality of human resources. It is organizational members that determine how to combine other resources. Thus, in order to be successful and effective in an organization, we need to understand human behaviors. The purpose of this course is to help students develop a fundamental understanding of human behaviors in an organization.

981.505* 경영학과(Dept. of Business Administration)

경영전문대학원(Graduate School of Business)
이로고 지역적 경쟁력의 결정요소를 연구한다.

Supply Chain Management.

본 과목은 생산관리의 전략적, 전술적 그리고 운영적 측면을 모두 다룬다. 구체적으로 본 과목에서는 현장의 조달부터 제품의 생산 그리고 생산된 제품을 최종소비자에게 전달하기까지 공급사슬 전 과정에서 직관하게 되는 수요예측, 총괄계획, 구매조달, 네트워크 설계, 물류, 재고계획, 공급계획, 공급사슬 상의 조화 문제 등에 초점을 둔다. 본 과목의 목표는 학생들이 전반적인 생산관리 활동들이 기업 내부에서 어떠한 역할을 하는지 이해하는 데 있다. 이러한 생산관리에 대한 기본적인 이해를 통해서 학생들은 공급사슬관리 관점에서 생산관리와 관련된 개념들과 문제들에 대한 기반적인 이해력을 가지게 될 것이다.

이 과목을 통해 고려되어야 할 주제는 다음과 같다.

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This course helps students answer the question, why and how some firms can create global competitiveness and others cannot. Unlike the strategic management course that mainly focuses on corporate activities and their interactions with environment, this course provides a wider view; A firm is a player of the entire economy. In this perspective, to build up global competitiveness, corporate strategies should be aligned with contextual conditions of all other players in an economy. For example, it is almost impossible that a world best hotel isolated from all other economic players can maintain its competitiveness in global markets. Therefore, the formulation and implementation of HR strategies is no longer the sole responsibility of HR staff. Key topic areas include: strategic HR management, recruiting & staffing, HR development, performance management, compensation, and labor-management relationships. The course uses business cases, lectures, video, class discussions, and application activities.

This course is designed to enhance students' understanding of the real-world business practices. CEOs, corporate execu-
981.514  
**Applied Business Project**

This course is designed to offer an opportunity for students to improve their practical knowledge and experiences through projects in the summer break. Students will be asked to choose between an in-depth case study or internship as a basis of an applied business project.

981.515  
**Financial Statement Analysis and Valuation**

This course focuses on the role and limitations of monetary, fiscal and trade policies. It aims to provide an understanding of international trading and the theories related to international trading. The course also covers important concepts and theories underlying firm and equity valuation. The course also focuses on practical applications of the theories/concepts in explaining and predicting corporate behavior and securities prices.

981.516  
**Strategic Tax Planning**

This course seeks to develop an understanding of tax incentives that affect a firm's business decisions. It also examines the impact of taxes on business activities/transactions and how tax rates affect the decision-making of managers. The course covers important issues such as strategic decision-making using accounting information systems.

981.517  
**Topics in Accounting**

This class is designed to examine selected current issues facing the accounting professional who need to make informed business decisions. Selected topics include corporate behavior and securities professional issues. The course includes a discussion of the role and limitations of monetary, fiscal and trade policies. It also examines the impact of taxes on business activities/transactions and how tax rates affect the decision-making of managers. The course covers important issues such as strategic decision-making using accounting information systems.

981.518  
**Global Economy**

This course seeks to develop an understanding of tax incentives that affect a firm's business decisions. It also examines the impact of taxes on business activities/transactions and how tax rates affect the decision-making of managers. The course covers important issues such as strategic decision-making using accounting information systems.

981.519A  
**Global Economy**

This course seeks to develop an understanding of tax incentives that affect a firm's business decisions. It also examines the impact of taxes on business activities/transactions and how tax rates affect the decision-making of managers. The course covers important issues such as strategic decision-making using accounting information systems.

981.520  
**Tax and Non-Tax Costs**

This course seeks to develop an understanding of tax incentives that affect a firm's business decisions. It also examines the impact of taxes on business activities/transactions and how tax rates affect the decision-making of managers. The course covers important issues such as strategic decision-making using accounting information systems.

981.521  
**Applied Business Project**

This course is designed to offer an opportunity for students to improve their practical knowledge and experiences through projects in the summer break. Students will be asked to choose between an in-depth case study or internship as a basis of an applied business project.

981.522  
**Financial Statement Analysis and Valuation**

This course focuses on the role and limitations of monetary, fiscal and trade policies. It aims to provide an understanding of international trading and the theories related to international trading. The course also covers important concepts and theories underlying firm and equity valuation. The course also focuses on practical applications of the theories/concepts in explaining and predicting corporate behavior and securities prices.
Entreprenuership

This course discusses the issues faced by managers who want to convert business idea into viable organizations that create value, and allows students to develop their own approaches, guidelines, and skills for being entrepreneurial managers. The course is intended to teach students how to identify potentially valuable business opportunities, how to obtain the resources necessary to pursue an opportunity and to create an entrepreneurial organization, how to manage the entrepreneurial organization once it has been set up, how to grow the business into a sustainable enterprise, and how to create value for the stakeholders.

981.522 비즈니스 이tics and Legal Issues

Business Ethics and Legal Issues

This course discusses the issues faced by managers who want to convert business idea into viable organizations that create value, and allows students to develop their own approaches, guidelines, and skills for being entrepreneurial managers. The course is intended to teach students how to identify potentially valuable business opportunities, how to obtain the resources necessary to pursue an opportunity and to create an entrepreneurial organization, how to manage the entrepreneurial organization once it has been set up, how to grow the business into a sustainable enterprise, and how to create value for the stakeholders.

981.523 기업인수합병과 지배구조 2-30-0

M&A and Governance

It is well-known that M&A has an important role in the firm's long-term strategy, and thereby raising the firm value and firm's competitive power. Despite of these positive roles, top managers or owners of a firm in general do not have a favorable viewpoint about the M&As. This course deals with the economic concept of mergers and acquisitions, M&A implementation process, defensive measures, and legal/institutional aspects of the market for corporate control. In addition, the course encompasses actual acquisition cases, valuation and pricing of mergers, mergers between financial institutions, and cross-border acquisitions. Finally, we analyze the effect of corporate governance on M&A from various angles.
This course is designed for students to understand basic structures and pricing theories of derivatives such as options, futures, forward, and swaps, and to understand various trading strategies using derivative securities. We will also discuss arbitrage, hedging, and their applications to risk management practices. Topics to cover include the followings: 1) Structure and pricing theory of options, futures, forward and swap, 2) Arbitrage and hedging transactions, 3) Bond pricing and duration, 4) Term structure and interest rate derivatives, 5) Binomial and Black-Scholes option pricing model, 6) Implied volatility and volatility estimation, 7) Option pricing for exotic options, 8) Option pricing using numerical approach, 9) Option pricing for exotic options, 10) Evaluation of market and credit risks, 10) Case studies about success and failure of financial risk managements.

981.526A Corporate Finance

This course provides an advanced look at major topics of corporate finance, and focuses on evaluating the theories and methods related to firm valuation. We also analyze potential impacts of financial decision making that directly affects firm value. Topics to cover include financial analysis, capital structure, dividend and compensation policy, debt financing, mergers and acquisitions, corporate bankruptcies, corporate governance, agency theory and related issues. The course will emphasize the close connection between corporate financial policies and firm valuation.

981.527A Portfolio Management

This course is designed to deepen the knowledge learned from Investments class, and to study basic concepts and empirical evidence related to portfolio management. Especially, we will focus on understanding the close relationship between academic research and practices, and will emphasize learning empirical methodologies and evidence with real data analysis. We will begin by reviewing alternative asset pricing models and well-known market anomalies, along with their practical applications, trading costs, and other new issues of portfolio management.
Organizational Design

Organizations must have well-developed strategies and be able to effectively implement them. This course focuses on organizational strategy, structure and design. By the end of the course, students will be able to: (1) Perform organizational analysis to determine the strengths and weaknesses of an existing strategy, (2) Design a strategy to achieve a long-term strategic goal, and (3) Produce the talent that is required by the organization.

Discussion topics include BPM, BPR, and Change Management.

Business Intelligence

An increasingly complex and rapidly changing business environment has brought the importance of Business Intelligence (BI) into clearer focus. BI systems provide decision makers with the tools to analyze information from various sources, and to provide managers with the necessary insights to facilitate more effective decision making. This course introduces core technologies in current e-business and high-tech industries. The course focuses on how these technologies create firm’s competencies and new business opportunities. In this course, technology leading firms for each core technology will be identified and analysis on how these companies have used the technology to create competitive advantages will be examined. Students will learn current trend and future development of each core technology to build strategies for firm’s sustained competitive advantage and strategic choices for new business opportunities. Discussion topics include BPM, BPR, and Change Management.

Digital Business Strategy

Digital Business Strategy is the process of converting traditional business processes into an e-business environment. In this course, students will learn how to develop strategies that leverage the power of digital technologies to achieve business goals. Students will be able to assess the current state of their organization and develop a strategy for digital transformation.

The rapid development of information technology and proliferation of the Internet have made a big change on various aspects of corporate management and business strategy as well. This course focuses on the development of digital strategy to achieve business goals. In other words, it addresses the strategic utilization of information technology to create management values such as innovation, competitiveness, and entrepreneurship. This course also discusses business models and business design while focusing on digital businesses. This class helps students to acquire the knowledge on theories and practices of digital strategy for corporate management.

M2136,003500

Topics in Management Information Systems

This course covers the management information systems (MIS) process, and the role of MIS in organizations. Students will learn how to design, develop, implement, and manage information systems to support organizational goals and objectives. The focus of this course is on the information management aspects of MIS and the role of MIS in strategic decision making.

981.531A Organizational Design

981.533 Business Intelligence

981.534A Digital Business Strategy
This course introduces the fundamental concepts and key elements of information technologies and systems which are widely applied in management activities. The course covers various issues that allow students to explore theories and practical applications of information technologies and systems to sustain competitive advantages in organizations. Students will understand the recent trends in information technology, and will discuss how to make practical application of these technologies to improve the performance of each organization. This will help students of this course to find out the major issues of managing information technologies.

981.539 소비자행동 2-30-0
Consumer Behavior
본 과목에서는 소비자 행동과 관련된 이론과 연구결과들을 살펴본다. 학생들은 하여금 심리학, 경제학, 사회학 그리고 인류학 등의 소비자행동관련 연구를 학습하게 하고, 많은 저식을 다양한 마케팅 문제에 적용하는 능력을 갖추게 하는 데 그 목적이 있다.

981.540 마케팅 전략 2-30-0
Marketing Strategy
본 과목은 효율적이고 효과적인 마케팅 전략의 개발을 위한 분석과 도구를 살펴본다. 구체적으로 경쟁환경에서 제품 또는 서비스에 대한 마케팅 활동과 관련된 이론과 해결책을 살펴본다. 본 과목은 마케팅 계획, 전략 그리고 최적화방법학을 개발하고, 최적화화하고, 평가하는 능력을 향상시키는 데 그 목적이 있다.

981.537 국제재무관리 2-30-0
International Financial Management
본 과목은 국제거래에 수반되는 재무적, 경영환경에 대한 이해를 바탕으로, 기업전략과 관련한 중요한 신개념과 분석기를 이해하고, 이를 바탕으로 학생들의 전략적 사고를 유도하는 데 그 목적을 두고 있다.

981.541 전략적 브랜드 관리 2-30-0
Strategic Brand Management
본 과목의 목표는 제품의 마케팅 전략을 개발하고자 하는 학생들에 적용된 마케팅 전략, 전략적 전략을 개발하고자 하는 학생들에게 적용된 마케팅 전략, 전략적 전략을 개발하고자 하는 학생에게
Special Topics in Marketing

This course is designed to help students learn about newly emerging Topics or issues in marketing. Topics and formats can vary with instructors and student interests.

Supply Chain Management

A class session will be devoted to each of the supply chain management issues such as purchasing management, supplier selection and resource allocation, waiting time management, and service system operation and analysis, and control. The managerial approach includes the full range of quality-related issues, including quality planning, analysis, and control. This course covers the Topics for strategy formulation (service's strategic positioning, internet strategy, environmental strategy), delivery system design (front-office/back office interface, service process analysis), capacity management (yield management, inventory management, waiting time management), and service system operation (service project management, site selection and layout, performance evaluation, customer selection and resource allocation).

Service Science

This course examines both traditional and new approaches for achieving operational competitiveness in service businesses. Major service sectors such as health care, repair/technical support services, banking and financial services, transportation, restaurants, hotels and resorts are examined. This course addresses both strategic analysis and operational decision-making. Specifically, this course covers the Topics for strategy formulation (service's strategic positioning, internet strategy, environmental strategy), delivery system design (front-office/back office interface, service process analysis), capacity management (yield management, inventory management, waiting time management), and service system operation (service project management, site selection and layout, performance evaluation, customer selection and resource allocation).

Total Quality Management

Quality management has become integrated into the practices of many firms. TQM itself has evolved and broadened to include such key words as the learning organization and knowledge management. In short, to meet the demands of today's customers, it is crucial that every firm adopt an integrative view of its processes as captured by the framework of TQM. This course is for students seeking a comprehensive introduction to TQM. This course encompasses the full range of quality-related issues, including quality planning, analysis, and control. The managerial approach includes understanding customer needs, product and service design, conformance to design in production, and continuous quality improvement. Specific subtopics include methodologies for assessing customer satisfaction, setting quality objectives, and identifying the full range of quality-related issues, including quality planning, analysis, and control.
ject, students will be able to understand basic knowledge on operations management and acquire some skills related to operations research.

**M2136.002100**

**Accounting and Capital Markets**

This course is designed for graduate students in the MBA program who have already taken fundamental accounting, micro-economics, statistics and finance courses. This course introduces several accounting topics associated with the capital market and covers important accounting concepts and theories related, but not limited, to the following issues: security valuation, income management, accruals, positive theories of investments related, but not limited, to the following issues: security valuation, income management, accruals, positive theories of investments.

**981.549**

**Advanced Financial Accounting**

This course uses a case-based approach to explore advanced financial accounting issues. Topics and cases include unique features of corporate governance in Korea, cutting-edge financial products, foreign currency translation, international and cultural aspects of financial accounting, and ethical issues in financial reporting. This course uses real-world examples on these topics. Future fund managers, financial analysts, internal controllers and regulators are encouraged to take this course.

Completion of an introductory financial accounting is required.

**981.550**

**Topics in Finance**

This course is designed to deal with selected issues that are highlighted recently in finance academics and professionals, including corporate finance, investments, financial institutions, derivatives, risk management, international finance, etc. The purpose of the course is to enhance students’ understanding of the selected issues in finance and their ability to apply their knowledge to a real-world situation. The class format will be based on lectures, case analysis, and discussion of the selected issues.

**981.551**

**Business Negotiation**

This course is designed to address various issues in international business. This course deals with how multinational corporations (MNCs) can create and manage competitive advantage in response to major opportunities and challenges that they encounter in the global competition. This course particularly focuses on the factors that compose bargaining, which will enhance the students’ ability to analyze their behavior in the course of bargaining. According to this purpose, the students will study the main psychological concepts about contract and bargaining at first step and the processes of inter-individual/inter-group conflicts and solutions at next step.

**981.552**

**Topics in International Business**

This course covers the content and process of business negotiation. Topics and cases include unique features of corporate governance in Korea, cutting-edge financial products, foreign currency translation, international and cultural aspects of financial accounting, ethical issues in financial reporting. This course uses real-world examples on these topics. Future fund managers, financial analysts, internal controllers and regulators are encouraged to take this course.

Completion of an introductory financial accounting is required.

**M2136.002200**

**High-tech Competitive Strategy**

This course covers the content and process of business strategy formulation and implementation in diverse contexts. Emphasis is placed on analyzing industry environments, and appraising a firm’s critical strengths and weaknesses relative to its competitors. This course particularly discusses competitive strategies of firms in various stages of industry evolution from emerging industries to mature industries. This course also addresses the importance of competitive dynamics.
Creativity and Innovation

This course is designed to provide conceptual, analytical, and theoretical frameworks that enable managers to formulate and implement an effective managerial and technological innovation strategy with creativity. This course takes strategic management perspective focusing on how managers in charge of competitive strategies can create and manage sustainable competitive advantage by undertaking innovative and/or creative strategies in response to major opportunities and challenges in the global competition.

Emerging Technologies and Entrepreneurship

Emerging Technologies and Entrepreneurship

This course covers the recent development of information technologies, which can practically and effectively be applied in various business environments. Students will learn the latest theories and best practices of the applications of emerging technologies. The objective of this course is not only to familiarize students with the vast array of current IT, but also to provide students through exemplars a much-needed ability to understand the utilization of these technologies in the enterprise.

Pricing and Sales Promotion Strategies

Pricing and Sales Promotion Strategies

This course covers various topics in marketing research such as problem formulation, research design, sampling, and many statistical analysis techniques including ANOVA, regression, and many other statistical techniques. The course requires basic understanding of marketing and statistics.
This course covers the topics on general corporate-level strategic initiatives and specific functional-level practices in manufacturing strategy. This course will provide an understanding of some of the key “controversies”, schools of thought, methodological options and challenges in manufacturing strategy.

981.560 기술경영론 2-30-0

Management of Technology

This newly created course is designed for foreign students at SNU’s MBA programs as well as exchange students from partner schools overseas. Students will visit well-known companies in Korea, and attend special lectures with aim of acquiring and understanding knowledge of Korean economy and culture.

981.563 서비스 마케팅 2-30-0

Service Marketing

This course will teach students how to lead and manage successful service organizations by delivering quality services. The course will cover the concepts and applications of service marketing strategies. It introduces an integrated service management framework that involves the strategic elements of a service marketing mix.

981.561 신제품 및 신서비스 개발 2-30-0

New Product and Service Development

This course introduces modern financial theories on capital markets and institutions. The course is suitable for people interested in finance, economics or business management.

981.562 한국 비즈니스의 이해 3-45-0

Doing Business in Korea

This course covers the topics on general corporate-level strategic initiatives and specific functional-level practices in manufacturing strategy. This course will provide an understanding of some of the key “controversies”, schools of thought, methodological options and challenges in manufacturing strategy.

981.565 자본시장론 2-30-0

Financial Markets and Institutions

This newly created course is designed for foreign students at SNU’s MBA programs as well as exchange students from partner schools overseas. Students will visit well-known companies in Korea, and attend special lectures with aim of acquiring and understanding knowledge of Korean economy and culture.

M2136.002400 채권분석연구 2-30-0

Studies on Fixed-Income Analysis

This course covers the topics on general corporate-level strategic initiatives and specific functional-level practices in manufacturing strategy. This course will provide an understanding of some of the key “controversies”, schools of thought, methodological options and challenges in manufacturing strategy.
ABS, structured products, 신탁위험의 평가와 관리, 채권포트폴리오 두자전략을 포함한다. 그밖에 각 주제와 관련된 실증 연구는 문과 사례들을 통하여 이 분야에 필요한 실증 연구방법론과 경험적 증거를 습득하고자 한다.

This course is designed to study valuation tools and investment strategies for a variety of fixed-income securities and their derivatives. Major topics include basic mathematics of fixed-income cash flows, yield-to-maturity, measures of interest rate risk, term structure models, interest rate derivatives, MBS, ABS, structured products, credit risk management, and bond portfolio management. This course also deals with empirical papers and cases on related issues so that students can have a good understanding of empirical evidence as well as empirical analysis skills.

### 981,569 전략적 브랜드 관리 2-30-0

**Strategic Brand Management**

이 과목에서 수강생들은 브랜드 자산에 관한 주요한 이슈들에 대해서 배우게 된다. 구체적으로, 브랜드 자산 구축의 목표와 효과, 방법론 시작으로 브랜드 확장과 아키텍처, 브랜드 재할정성, 브랜드 자산의 측정 등에 대한 내용들이 소개될 것이다. 이 과목의 궁극적인 목표는 수강생들이 브랜드 전략을 수립하고, 전략을 설립할 수 있는 역량을 배양하게 하는 것이다.

This marketing elective is intended to expose students to materials about several important topics concerning “Brand Equity Management”; the importance of and pay-offs from building a brand’s equity; how to build such equity; how to extend it and leverage it in other ways; how to guard it and grow it, etc. The course objectives are: 1) to increase understanding of the important issues in planning and evaluating management, and bond portfolio management. This course also deals with empirical papers and cases on related issues so that students can have a good understanding of empirical evidence as well as empirical analysis skills.

### 981,570 위험과 보험 2-30-0

**Risk and Insurance**

보험과 위험관리에 대한 전반적인 기초적인 내용을 공부한다. 보다 구체적으로 위험에 대한 경제주체들의 태도와 위험을 관리하기 위한 효율적인 방법의 디자인, 정보비대칭 문제의 해결 방안과 더불어 위험의 배분과 전가를 위한 보험시장의 구조와 기능에 대한 공부한다.

This course studies the fundamentals of insurance and risk management. It focuses on the efficient design of risk transfer/sharing mechanism, resolution of information problems, and the organization and functions of insurance markets.

### 981,571 해외 현장 학습 I 2-30-0

**Global Residence Program I**

해외 유명 경영대학원을 직접 방문하여 수업을 받음으로써 현지에 대한 이해를 증진시키고자 한다. 이러한 인수과정을 통하여 수강생들은 방문국의 문화와 경제, 사회에 대한 이해를 얻게 되며, 향후 한국기업들이 세계시장에 진출할 때 고려해야 할 중요한 성공요소들을 탐색할 수 있을 것이다.

This course aims to provide students with deep understanding of the business environment and people of the country.

### 981,572 해외 현장 학습 II 1-15-0

**Global Residence Program II**

해외 현지 글로벌 및 로컬 기업들에 대한 현장방문을 통하여 글로벌 기업의 인적자원관리와 경영전략, 재무 전략, 생산시스템, 마케팅전략 등에 대해 학습하는 것을 목표로 한다. 이러한 연수과정을 통하여 수강생들은 방문 기업들의 특성과 성공비결에 대해 학습할 수 있을 것이다.

This course aims for students to learn the best practices of foreign multinational companies. The students will visit various companies located in foreign countries and attend the lectures, and presentations on them. They will learn accounting, finance, human resource management, marketing, and production strategy of the companies.

### 981,573 해외 현장 학습 III 1-15-0

**Global Residence Program III**

해외 각국에 진출하여 성공적으로 정착한 한국 기업들을 직접 방문함으로써, 해당 기업이 성공할 수 있었던 비결과 한국인이 보는 현지의 특성에 대해 공부한다. 그리고 컨설팅 전문가들과 관련 정부기관 전문가들을 초청하여 현지기업에 대한 진출 전략과 진출 시 주의해야 할 점 등에 대해 공부한다.

This course aims to provide students with the direct chance to visit various companies that operate in foreign countries successfully. Students will learn from the management of those companies for the key factors to success when a Korean firm try to open a business in the foreign country. Lectures from various consulting and government organisations’ experts will also be provided to students.

### 981,574 기업과 가치 2-30-0

**Firm and Value**

기업과 가치 과목 (이하 FV)은 기업, 경영, 그리고 가치에 대한 근본적이고 정확한 이해를 목표로 한다. 일반적으로 경영학에서 배우는 다양한 분야는 독립적으로 구성되고, 경영의 기능적 측면을 강조하여 학습한다. FV는 분과적 성격을 넘어, 학생들에게 기업과 경영에 대한 동작적이고 넓고 깊은 시야를 주고, 학습하는 방법을 가르치고자 한다. FV는 기업과 경영학의 역사, 기업의 역할, 경제학의 재고, 학생들에게 가치 평가와 정보 문제에 대한 논의를 통해, 경제학과 경영학의 의미와 문제점을 인식하고, 기업과 경영에 대한 정확한 이해를 할 수 있도록 도움을 주고자 한다.

FV는 내용성 경영학 분야의 성격을 띄는 한편, 경영학 전반을 조망하는 의미가 더 큰 과목으로 볼 수 있다. 경영학을 어느 정도 배웠거나 알고 생각하는 이들을 위한 경영학 원론으로 간주하면 적절하다고 생각한다.

Firm and Value (FV) aims to understand the firm, management, and values. In general, the majors of the business school provide courses which are independent with each other and focus on functional aspects and tools of business. FV helps students to have insights and comprehensive understanding on the firm and business. FV can be considered a course corresponding to the principles of management for those who want to draw a big picture of firm, business and value. FV studies the historical aspects of company and financial markets, economics revisited, the role of firm, and the effects of uncertainty and information problems.
981.575A 전략적 IT 경영 2-30-0
IT-Driven Strategic Management

본 과목은 기업이 활용하는 정보기술(Information Technology, IT)의 전략적 관리에 관한 신중주의들을 다루고 논의한다. 정보기술의 전반에 대한 이해를 바탕으로 기업의 경영목적 달성을 위한 정보기술의 전략적 활용을 이론과 사례로 통해 실수 있게 접근한다. 본 교과목을 통해 학생들은 새로운 동향성 정보기술 기업 경영에 전략적으로 활용할 수 있는 능력을 배양하게 될 것이다.

This course deals with advanced topics on strategic management of IT using theories and cases. The course provides students with the fundamental understanding of strategic IT management and aims to enhance the capability of students to see business implications of existing and emerging ITs, have creative insights behind them, and exploit them for their business and managerial use.

981.576 경영학 가치 2-30-0
Business and Value

경영학의 가치중립성이다. 따라서 경영학은 사회에 공정적으로 또는 부정적으로 영향을 미칠 수 있으며, 동일한 행위가 관계에 따라 공정적 또는 부정적으로 해석될 수 있다. 재무, 회계, 인사조직, 마케팅, IT, 경영학, 서비스관리, 생산관리 등을 포함하고 있는 전통적인 경영학은 사회적으로 매우 중요한 주제를 다루고 있음에도 불구하고 사회적인 함의 및 가치에 대한 논의가 부족한 실정이고 대부분의 논의가 이익 극대화의 목표를 달성하기 위한 기술적인 방법에 허용되고 있다. 본 과목은 경영학 학습자들에게 가치의 관점에서, 사회적인 학습자들에게 중합적인 다양한 방법으로 조명하고 토론하는 것을 목표로 하고 있다. 기업을 주 연구대상으로 기업에 이익 극대화의 사회적 의미, 투명성이 사회에 미치는 영향, 기업의 사회적 책임에 대한 해석, 위험, GDP와 GNH의 정의와 관계, 고객 및 고객만족의 개념, 그리고 사회적 의미, 분배와 성장간의 갈등에 대한 사회적 해석, 신자유주의와 인간의 본능, 기업과 가치 등을 다룬다.

Business administration is value neutral, which may do harm or good to the society. Traditional business curriculum including accounting, finance, human resources and organization, IT, marketing service and operation management implicitly assumes profit maximization is the only objective without explicitly discussing its social implication. This course attempts to reinterpret core issues in business such as profit maximization objective, transparency, customer satisfaction, strategy, risk, agency problem, corporate governance, share holder and stakeholder capitalism, work and life balance in a social and ‘value’ context both at an individual and a firm level. The objective of this course is to enhance the awareness of social implication of business decision makings so that business students and business firms can be sustainable in a society.

981.577 회계사례연구 1-15-0
Case Studies in Accounting

본 과목은 사례연구를 통해, 재무회계, 관리회계, 세무회계, 회계 감사 등의 회계학 과목에서 다루어졌던 다양한 회계이론의 실제 적용사례를 학습한다. 현재 회계학 과목들은 주로 회계계급을 체계화 및 단순화하기 목표한 회계학의 핵심을 이해하는데 초점을 두고 있는 반면, 본 과목은 주로 혼란스럽고 복잡한 현실에서 적용된 회계사례를 학습한다. 이를 통해 학생들에게 실제 회계사례의 복잡성을 블론, 회계이론과 실제 사례와의 연관성에 대해 이해할 수 있도록 한다.

This course is designed to introduce field applications of various accounting theories discussed in accounting courses in financial, managerial, tax accounting and auditing. While the accounting theory focuses on a few critical variables of interest, accounting practices in a real world is a reflection of numerous variables which are neither discussed nor controlled in simple and abstract accounting theories. The purpose of case studies in accounting will increase the awareness of complexity of practical applications attempting to link field practices with accounting theories.

981.578 인사조직특강 1-15-0
Special Topics in Organization & HRM

본 과목에서는 경영 현장에서 고민하고 있는 인사조직의 최근 이론을 살펴보고, 이에 관련된 이론을 바탕으로 체계적인 해결책을 살펴보고자 한다. 구체적으로, 경영 현장에서 비즈니스 이론을 바탕으로 관련 사례들을 분석하고, 현안에 대한 해결방안을 모색하는 것을 목적으로 한다.

This course aims at understanding the special topics in organization and human resource management that challenge practitioners in the market while reviewing systemic solutions to such issues. With a good emphasis on the combination of theory and case-based pedagogy, this course concerns the analysis of managerial issues by employing relevant and up-to-date models, and the suggestion of alternative solutions accordingly.

981.579 전략경영워크숍 1-15-0
Workshop in Strategic Management

전략 경영의 주요 이론 중의 중요성에 대한 실생활 적용을 목표로 하는 전략 경영에 대한 실천적 이해를 제공한다.

This course provides students with practical understanding of strategic management, by applying the theories on the major issues in strategic management to real firms.

981.580 IT 비즈니스 이슈와 경향 1-15-0
Issues in Information Management

본 과목에서는 정보통신 관련 산업에서 최근의 기술적 경향, 관련 산업 이슈들을 경제학적 측면에서 관찰하고, 이에 관련된 이론을 바탕으로 체계적인 분석을 한다. 이를 위해 관련 사례들을 분석하고 학습하여, 정보통신 산업 관련 학문적 및 이론적 습득과 당 산업의 미래 성장 방향에 대한 전략적 안목을 갖추게 하는 것으로 목표하고 있다.

In this course, recent technical trends and industrial issues in information technology businesses are studied, followed by systematic analyses based on profound theories in management. Using case-based studies and discussion, students are expected to learn state-of-the-art knowledge and theories in IT industry and to acquire strategic insights for the future trends in IT business.

981.581 생산관리 워크숍 1-15-0
Workshop in Operations Management

본 과목은 다양한 생산관리에 대한 심화된 주제들을 다루는 세미나 강좌이다.

This course is designed to introduce field applications of various accounting theories discussed in accounting courses in financial, managerial, tax accounting and auditing. While the accounting theory focuses on a few critical variables of interest, accounting practices in a real world is a reflection of numerous variables which are neither discussed nor controlled in simple and abstract accounting theories. The purpose of case studies in accounting will increase the awareness of complexity of practical applications attempting to link field practices with accounting theories.
Doing Business in Asia

This course aims to help students learn application skills with which they can apply their knowledge from introductory courses in finance into real business world cases. By investigating global and local business cases, students can improve various decisions in corporate finance. Also, actual calculations and statistical analyses using data will improve students’ ability of quantitative analysis and problem solving.

Executive Leadership

Executive Leadership is a crucial skill for any manager to successfully lead his/her team and organization. This course will cover various aspects of executive leadership, including strategic planning, decision-making, and team management. Students will learn how to effectively lead their teams towards achieving organizational goals.

Strategic Human Capital

Strategic Human Capital focuses on the importance of human resources in achieving organizational success. The course will cover topics such as recruitment, training, and retention of employees. Students will learn how to develop and implement effective human resource strategies to support the overall success of the organization.

Integrated Marketing Communications

Integrated Marketing Communications is a course that focuses on developing effective marketing strategies. Students will learn how to create and execute integrated marketing campaigns that combine various marketing channels and techniques. The course will cover topics such as market research, branding, and digital marketing.

Case Studies in Finance

Case Studies in Finance is a course that provides students with real-world finance cases to analyze and solve. The course covers various finance topics such as capital structure, financial planning, and risk management. Students will learn how to apply financial theories and tools to real-world situations.
M2136.001800 자연자본: 글로벌 자원시스템의 위험과 기회 2-30-0

Natural Capital: Risks and Opportunities in Global Resource Systems

본 과목은 총 여섯 가지 자원시스템을 기반으로 하여 진행된다. (광물, 에너지, 식량, 수자원, 기후, 토지 등의 생물 다양성) 이러한 자연자원에 의존하는 비즈니스를 학습하게 하며, 그에 수반되는 위험과 기회를 탐구할 수 있는 시간이 될 것이다. 본 과정은 대학원생 및 종합 자연자원자 및 지속가능성과 관련된 지식이 없는 학생들을 대상으로 한다.

This course is built around six global resource systems-materials, energy, food, water, climate, land and biodiversity. It provides a vehicle for students to explore the ways in which businesses are dependent on these resources, as well as the risks facing continued access to them and the accompanying opportunities for innovation. It is primarily geared towards graduate-level business students with no prior background in sustainability or natural resources.

M2136.002500 GNAM- 포괄적 비즈니스 모델 2-30-0

GNAM-Inclusive Business Model

본 수업에서는 기업이 "피라미드 바닥모델"에 근거, 빈곤층에게 저자적으로 경제적인 도움을 제공할 수 있는가에 대해 토론하게 한다. 사회적 기업을 운영하고 있는 기업가 및 실제 사례를 중심으로 사회적 기업이 부딪치게 되는 여러 제약과 장애물, 그리고 그 극복 방안에 대한 연구 및 사례를 통해 운영에 대해 학습하게 한다.

In this course students will debate and discuss whether business enterprises can address the needs of the "base of the pyramid" in a financially sustainable manner, as a for-profit business. By analyzing a series of real life case studies of such inclusive businesses, as well as by listening to social entrepreneurs who are running inclusive businesses, the course will reveal the various challenges that are embedded within such business models and some of the creative means by which social entrepreneurs have dealt with such challenges, sometimes successfully and sometimes not.

M2136.001700 글로벌 비즈니스의 이해 3-45-0

Understanding Global Business

본 과목은 GNAM에서 진행되는 Network Week에 참여하고자 선택하며, 학생들은 각자의 학사일정에 맞춰 지원 가능한 대학의 Network Week를 선택, 신청하게 된다. 본 과목은 학생들의 경영전문대학원생이 한국으로 이주하여, 전 세계 GNAM 학생들로 구성되며, 본교교수와 GNAM에서 개설하는 코스를 이수할 때 경영전문대학원생도 본 과목으로 학점 부여 하여 한다.

This course is to participate in the network week designed and operated by GNAM, and each participating school will organize a weeklong course consisting of classroom instruction and company visits around specific theme. SNU and GNAM networking students will participate in the course according to GNAM week schedule, and outgoing SNU students who completed the course will receive credits upon "Understanding Global Business".

M2136.002600 GNAM-독점 규제법 및 국가간 집행사례 분석 2-30-0

GNAM-Analysis of Competition Law and Enforcement Across Countries

각국의 독점 법제 및 경쟁 촉진/경쟁 유지 정책을 분석하고 어떤 차이점과 공통점이 있는지 이해한다. 리서치 프로젝트를 통해 각 학생들이 속한 국가의 경제사정, 법률, 비즈니스 방식 등을 고찰하게 된다. 이후에는 Yale 외대 교수진과 외부 전문가의 도움을 받아 리서치 프로젝트를 프리젠테이션을 완성하고, 평가 받는다.

An understanding of competition policy and enforcement across countries and regions requires an appreciation of what is common in competition policy as well as what is different across regions. This course will begin with a series of classes to provide a common economic, legal, and business framework upon which student groups can develop their research projects. After the first four classes the remainder of the course will be focused on the team research projects,
which will be supervised by faculty and organized with the assistance of Yale SOM facilitators. Faculty and external experts will evaluate the research project and presentations.

M2136.002700 GNM–국가간 모바일 뱅킹 기회 2-30-0

GNM-Mobile Banking Opportunities Across Countries

모바일 뱅킹의 기술은 전 세계에서 상당히 규제화 되어 있음에도 불구하고 여러 국가에서 서로 다른 출처를 갖고 있다. 학생들은 서로 다른 국가의 학생들과 함께 빌어져 다른 비즈니스 모델을 이해하고, 새로운 모델을 (은행, 텔레콤, 창업동의)을 제안하게 된다. 본 수업은 학생들에게 하.friend세계 각국이 갖고 있는 역량과 서로 다른 시장 상황을 비교/이해하고, 성공전략을 새로운 인사이트를 제공하고자 한다.

Though technologies for mobile banking available are pretty standard around the world, the solutions that succeed in various countries diverge. Students will work in cross-national teams across universities to understand why current business models differ and propose new business models from the perspective of an assigned institution (e.g., bank, telecom provider, startup) that are appropriate for an assigned country or region. By comparing the solutions proposed by different teams, the course will help students gain insights into strategies for success for different market participants with different competencies and assets across countries.

M2136.002800 GNM–신상품개발 2-30-0

GNM-New Product Development

오늘날 신상품 개발은 조직의 성공과 생존에 있어 필수 불가결한 요소이다. 본 수업에서는 신상품 개발 전략을 이해하고 실제 개발할 수 있는 테크트와 방법(Tool)을 제시하고자 한다. 아울러, 학생들은 신상품 개발의 실제 성공사례/실패사례를 시뮬레이션을 통해 배우게 된다.

In today’s world New Product Development (NPD) is critical to the success and survival of organizations. This course is aimed at teaching the tools and techniques developed to support the NPD process, to gain insight from real NPD success and failure case studies and to implement the tools, techniques in a simulated environment.

M2136.002900 GNM–대중관리: 인도적 지원 관리 및 개발 2-30-0

GNM-Handling Disruption: Humanitarian Emergencies Management and Development

본 수업의 목적은 international development에 있어 인도적 지원의 필요성을 보다 효과적인 방식과 목적으로 실행하고자 하는 것이다. 또한, 생산관리, 경영시스템적인 측면에서 고려해볼 지역 현지 유명 경영 대학원의 강의를 통해 학생은 세계를 이해하고, 글로벌 기업의 경영전략, 인적자원관리 역량 및 마케팅 전략 등에 대해 학습할 수 있는 목표로 한다. 구체적, 현지 경영이론, 사회적 경제개발과 경제적 문제가 해결과 급속한 변화를 관리하는 효과적인 커뮤니케이션 기술, 정보관리의 중요성 역시 함께 다루게 된다.

The aim of this course is to develop capacity for critical engagement and effective action in humanitarian emergencies, particularly in the context of complex humanitarian situations of international development. The course draws from the fields of operations management, information systems, and development. It attributes particular importance on information and the potential of information and communication technologies to enable effective action for managing emergency crises and for addressing long term problems of socio-economic development.

M2136.003000 보상관리 2-30-0

Compensation

본 과목은 조직 보상 시스템의 전략적 관리를 위한 주요 이슈들을 이해하고, 경제학, 심리학, 사회학 등 다양한 학문분야에서 발달 된 보상이론과 모델들을 학습하는데 초점을 둔다. 본 과목에는 근로자의 직무분석과 평가, 임금수준, 임금체계, 임금구조와 인센티브와 관련된 보상제도들을 맺을, 심리적 관점에서 분석하게 될 것이다. 본 과목은 통합학위를 강조하고 있는 효과적인 보상관리 전략을 이해하고, 현실에서 당면하게 될 주요 보장관련 이슈들을 해결하기 위한 구체적인 방안을 모색할 수 있게 될 것이다.

The course will focus on the crucial issues related to the strategic management of the organization’s compensation and benefit system. Theories and models relevant to employee compensation from the sciences of economics, psychology, and sociology will be examined. Compensation management practices, including the analysis and evaluation of jobs, criteria and procedures for determining pay levels, individual pay determination, forms of pay, and incentive systems will be covered. Upon completion, the student should be able to not only recognize how pay decisions help the organization achieve a competitive advantage but also analyze, integrate, and apply the knowledge to solve compensation-related problems in organizations.

M2136.003100 글로벌 현장학습 I 2-30-0

International Field Study I

북미 지역의 유명 대학 교수진의 강의 및 기업 방문을 통해 현지의 문화와 경제를 배우고 기업에 대한 이해를 넓혀 국제적 경영전략을 함양시킨다. 이러한 해외 경험을 통하여 수강생들은 글로벌 시장의 통찰력을 키우고 기업의 미래발전방안을 올바르게 개발하게 될 것이다.

This course aims to students learn culture and economics of North American Countries through intensive lectures and corporate visits to foster a sense of global business management. Following the program, students reflect on the insights gained from the experience and will present the right scheme of future development of global business environment.

M2136.003200 글로벌 현장학습 II 2-30-0

International Field Study II

유럽 지역 현지 유명 경영 대학원을 방문하여 강의를 통해 선진국 사회에 대한 깊이와 폭을 넓히고, 글로벌 기업의 경영전략, 인적자원관리 역량 및 마케팅 전략 등에 대해 학습하는 것을 목표로 한다. 구체적인 현지 경영이론을 이해하고 Middleware의 유형 글로벌 기업 등을 방문하여 실무와 이론을 접목시키는 것을 목표로 한다.

This course aims to students expand depth in culture and
business of developed society through visiting world’s leading business school in Europe countries. Students will study business management skills, human resource management, and marketing strategy. Participants will also analyze details of latest management theories and cases, and learn theory and practice of well-known companies in Europe.

**International Field Study III**

Asia’s role as a global hub is increasing, especially with the rise of the Internet. This course aims to provide students deeper understanding of the culture and business management of global and local firms in Asia. Students will learn and study the strategic nature of electronic commerce and in-class. After taking this class, students are expected to understand the strategic role of businesses which decides the fate of local businesses.

This course provides opportunities for students to visit and study business management skills through lectures and company visits in the center of Asia Country acting as a world’s trading hub.

**Electronic Commerce**

Electronic Commerce

This course aims to provide students deeper understanding of the culture and business management of global and local firms in Asia. Students will learn and study business management skills through lectures and company visits in the center of Asia Country acting as a world’s trading hub.

**M2136.003400 전자상거래 2-30-0**

**M2136.003600 Venture Financing**

This course is intended to provide the students with an understanding of venture capital industry, focusing on the practical aspect of venture capital investment process. Various specialists working in the industry will be invited to give lectures on the following topics; overview of venture capital industry in Korea, financing methods, and real-world examples on venture capital investment.
The objective of this course is to learn about human resources management, marketing strategies, accounting, finance, management for global businesses that conduct business and marketing activities in Korea. The students will visit various companies, attend lectures, and have presentations on them. Through this course, students will be able to learn about the characteristics and success of visiting companies.

M2136.004000 환경변화와 전략적 혁신 2-30-0

Environmental Shifts and Strategic Innovation

The course is designed to help students reposition on their firm's strategy against the environmental change. This course considers 1) shifts in competitive environment (e.g. market entry and competitive dynamics), 2) shifts in technological environment (e.g. sustaining vs. disruptive innovations), and 3) shifts in institutional environment (e.g. socio-cultural foundations of market evolution). As top managers of their own firms, students are introduced to different strategic innovation activities, including 1) enlarging competitive horizon, 2) redefining business models, and 3) recalibrating resource portfolio for continuous growth.

M2136.004100 문화예술마케팅 2-30-0

Art and Culture Marketing

The course will provide students with managerial perspectives as well as analytic skills that are necessary to make decisions in the art and cultural organizations such as museums, theatres, etc. With the focus on the peculiarities of art and cultural products, students will obtain knowledge and wisdom from lectures and case analyses.

M2136.004200 성과관리 2-30-0

Performance Management

The course is designed to help students understand and know how and when hard data is used to make soft-skill decisions about various HR related issues, so that they can position themselves as a strategic partner in their company's HR management decisions. During the course, students will understand the value of HR analytics, and experience various hands-on applications of HR analytics.

Students will understand and know how and when hard data is used to make soft-skill decisions about various HR issues, so that they can position themselves as a strategic partner in their company’s HR management decisions.
기계학습은 인공지능의 한 분야로서 명시적으로 프로그래밍하지 않고 컴퓨터가 데이터로부터 학습할 수 있도록 한다. 이 과목은 제도화에 대한 응용을 중심으로 기계학습의 개념과 기법, 그리고 알고리즘을 소개한다. 이 과목에서 다루는 주요 주제들에는 선형회귀, 의사결정나무, 신경망, 분류, 무작위 숲, 시각화 등이 있다.

수강생들은 기계학습이 제도화에 응용될 때 기계학습이 어떻게 작동하는지 원리를 배운다. 이 수업을 듣고 나면 기계학습 전문가들과 의사소통을 할 수 있게 될 것이다.

Machine learning is a subfield of artificial intelligence (AI) that gives computers the ability to learn from data without being explicitly programmed. This course introduces the concepts, techniques and algorithms in machine learning with emphasis on applications in finance and economics. Topics to be covered include linear regression, decision trees, neural network, classification, random forests and visualization. These topics will be discussed with examples in finance and economics.

The students will develop the insights on how machine learning works in various applications to finance and economics. After taking this course, students are expected to be able to communicate with experts in machine learning.

Business Innovation for the Era of 4th Industrial Revolution

4차 산업혁명 시대의 비즈니스 혁신 2-30-0

4차 산업혁명 시대에 적절하게 기술과 산업의 융합이 활발하게 일어나고 있다. 이로 인해 비즈니스 전반에 걸쳐 새로운 기능의 추가 및 기존 조직의 개선에 대한 Needs가 늘어나고 있다. 4차 산업혁명 시대에 다툼의 새로운 기술을 받아들이는 것뿐만 아니라 빠르게 하며 새롭게 등장하는 기술을 효율적으로 적용하고, 경영으로 흐름할 것인지가 무엇인지 중요하다. 본 수업은 이러한 측면에서 4차 산업혁명 시대의 다양한 기술 혁신사례를 소개할 뿐만 아니라 기업이 새로운 기술을 효과적으로 도입할 수 있는 혁신적인 비즈니스 모델에 대해 논의하게 될 것이다.

In the era of the 4th industrial revolution, fusion of technology and industry is actively taking place. This increases the need for adding new functionality and improving existing organizations throughout the whole business. In the fourth industrial age, it is more important not only to accept new technologies, but also how to efficiently apply new emerging technologies and absorb them into management. In this regard, this class will not only introduce various technological innovations in the fourth industrial revolution era, but also discuss how companies can effectively introduce new technologies.
982.501 기업과 환경 2-30-0

Business Environment

The course will be led by both lectures and case analyses. Strategy, communication strategy, and time-based strategy. Innovation, standards war, high-tech product strategy, pricing strategy, and business environments. In this class, various specialists will be invited to the class and students will have a chance to listen to their lectures.

...Executive MBA...

982.502 하이테크 마케팅 2-30-0

High-Tech Marketing

Marketing for technology-based products is different from that for consumer packaged goods. This course aims to prepare students with the understanding of major issues and problems that are prevalent in the so-called "high-tech" industry. The topics include chasm model, disruptive innovation, standards war, high-tech product strategy, pricing strategy, communication strategy, and time-based strategy. The course will be led by both lectures and case analyses.

982.504 인문과 경영 2-30-0

Business and Humanities

In this class, students are going to study classics on humanities, history, philosophy, etc., which encourage students to apply classroom knowledge on humanities to real life. In addition, this course can develop the sense of academic balance between business and humanities, which subsequently teach future CEOs to contribute their communities and economies meaningfully. In the academic perspective, we expect to exploit new ways of thinking and implications by combining the business studies with literature, philosophy, and history.

법학전문대학원
Graduate School of Law
931.501A Legal Writing

This course aims at enhancing problem-solving and legal writing capabilities of students. Through this course, students will be required to prepare legal documents including various pleadings and court judgment. Also, after students prepare legal documents, class discussions will take place and hands-on penciled lessons will be provided. The course will mainly deal with documents in civil cases and criminal cases.

931.502 Western Legal Tradition

Western Legal Tradition is a seminar which covers relevant themes of European Legal History, History of Private Law in the Modern Times and History of Public Law in the Modern Times. Korea has, as everybody knows, accepted the continental European legal system. Against this background it is inevitable for us to inquire into the historical development of Western law and the characteristics of Western legal culture. This seminar deals with the changing process and the tradition of Western legal culture after the decline of the Roman Empire with special regard to various ethical dilemma are debated, in addition to the knowledge of ethical rules. Students learn for the first time what an ethical problem is and how to solve it.

931.503 Lawyers in Korea

This course aims to teach when and how the profession and the status of the lawyers in the Korean society has been formed and developed in the history. About 100 Korean lawyers including the judges, the prosecutors, and the attorneys who have worked for the rule of law in Korea will be introduced. Torneym and the legal scholars will be studied historically and biographically. This teaching will be the driving forces of the Korean lawyers spiritually and ethically.

931.504 Law and Social Science

Law and Social Science

This course aims at exploring the relationship between law and social science in four aspects. First, how are law and social science related each other? Second, how are methodology in law and social science differ? Third, in what sense do decisions based on scientific theories and research tools have merits and limitations? Fourth, how can lawyers use social scientific methods in legal practice? The course reviews these questions based on different approaches in anthropology, sociology, economics, psychology, policy studies, and statistics. Students are expected to understand the specific characteristics of scientific studies and research processes and to apply them in legal studies and practice.
### Legal Philosophy

**Introduction to Korean Law**

이 과목은 한국의 사법제도, 한법, 민법 및 민법절차, 형법 및 형법절차에 대한 전반적인 이해를 제공한다. 로스쿨 교수 세 명이 학기간 팀을 이뤄 각각 해당 분야를 가르칠 것이다. 학기간 동안 총 5개 주에 걸쳐 저번을 다루는 영역으로, 범죄학 강의에서는 여러 범죄학자들이 정의에 대하여 고민하고 연구한 업적을 공부할 뿐만 아니라 학생 자신의 정의의 문제에 대하여 자유로운 사고와 의견 개진을 할 수 있는 기회도 제공하고 있다.

Issues examined by legal researchers and institutions essentially revolve around questions of justice, whether it be in a general or specific problem-solving sense. In this context, the question of the meaning and standard of justice may be raised in legal research and practice. A general or specific problem-solving sense. In this context, the question of the meaning and standard of justice may be raised in legal research and practice. A general or specific problem-solving sense. In this context, the question of the meaning and standard of justice may be raised in legal research and practice. A general or specific problem-solving sense. In this context, the question of the meaning and standard of justice may be raised in legal research and practice.

This course offers a basic understanding over the judicial system, constitutional law, civil law and civil procedure, and criminal law and criminal procedure of the Republic of Korea. Three of the law school faculty members jointly teach their respective parts as a team during the semester. There is no requirement for the courses to be taken prior to this course or for the major of the students. Each week, some of the essential concepts of law, relevant law and legal system, cases, policies and practices are introduced and discussed. In further detail, the course proceeds along the following themes and topics: (i) a general overview of the judicial system; (ii) in the area of constitutional law, a history of the Constitution, the separation of powers and the constitutional institutions, the fundamental rights and the constitutional adjudication; (iii) in the area of civil law, distinctive features of the Korean civil law, particularly focusing on contracts and torts, and the civil procedures in Korea; and, (iv) in the area of criminal law and criminal procedure, basic principles and core issues of the Korean criminal law, and the structure and recent changes of the Korean criminal procedure.

#### Legal Philosophy

Legal Philosophy

- 학기간 팀을 이뤄 각각 해당 분야를 가르칠 것이다.
- 범죄학 강의에서는 여러 범죄학자들이 정의에 대하여 고민하고 연구한 업적을 공부할 뿐만 아니라 학생 자신의 정의의 문제에 대하여 자유로운 사고와 의견 개진을 할 수 있는 기회도 제공하고 있다.

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### International Business Negotiation

**Introduction to International Business Negotiation**

이 과목은 국제비즈니스협상에 대한 체계적인 이해, 그리고 그에 바탕을 둔 실습을 통해 학생들이 향후 법률가로서 실제 협상에 임할 때 성과를 극대화할 수 있는 능력을 배양하는 것에 목표를 두고 있는 과목이다. 과목을 통해 실제의 계약과정과 결과에 있어서 협상이 이루어지는지, 협상의 전반을 어떻게 해야 할지, 그리고 계약의 성립 여부에 대한 판단을 할 경우에는 어떤 방식의 협상이 이루어지는지, 개념적 사례를 통해 살펴보도록 한다.

Lawyers engage in various types of negotiations. By combining theoretical aspects and practical aspects, this course aims at systematic understanding of the process of international business negotiation and also at enhancing students’ effectiveness as negotiators. Throughout the course, students will be given ample opportunities to discuss and negotiate contract documents and engage in simulation exercises. An example of the transaction that will be dealt with is a licensing agreement between a Silicon Valley technology company and a Korean technology start-up. The course will in principle be offered simultaneously with a U.S. law school. The Korean company will be represented by the SNU students and the Silicon Valley company will be represented by a team of law students from a U.S. law school. Actual negotiations will be conducted through e-mails and teleconferences and, when possible, also through actual meetings.

#### Introduction to International Business Negotiation

- 이 과목은 국제비즈니스협상에 대한 체계적인 이해, 그리고 그에 바탕을 둔 실습을 통해 학생들이 향후 법률가로서 실제 협상에 임할 때 성과를 극대화할 수 있는 능력을 배양하는 것에 목표를 두고 있는 과목이다.

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### Negotiation and Deal Design

**Negotiation and Deal Design**

이 과목은 다양한 유형의 비즈니스 거래에 대하여 구조 및 합의과정을 검토하고 분석하는 과목이다. 이를 통해 여러 유형의 계약의 기반에 걸쳐있는 경제적, 비경제적 논리구조에 대한 이해를 높이고, 학기의 초반에는 거래의 분석과 필요한 이론적 기초가 되는 문헌을 검토하고, 학기의 후반에는 학생들이 직접 분석하도록 한다. 다양한 유형의 거래에 대하여 가급적 실tet 계약서류를 확인하고 분석하도록 하고, 가능한 경우에는 거래의 당사자와 이해관계를 높이도록 한다. 분석의 대상은關於 개별의 유형을 예시하면, 영화제작계약, 유통 및 라이센스 계약, 신용카드가맹점계약, 합작투자 및 기업인수합병 계약 등이 포함된다.

Through this course, students will be given opportunities to review the structure of various types of business deals and to conduct theoretical analysis of these deals. In analyzing deals, underlying business, economic and legal principles will be considered. During the first part of the course, theoretical backgrounds will be laid and students will become familiar with the concepts such as information problem and strategic behavior. Then, students will form groups and analyze the structure of certain deals, selected by the instructor. Actual deal documents will be distributed in order to help students better understand business and legal issues that companies face on a regular basis, and students will be asked to
disentangle and analyze various relevant issues in a systematic way.

Studies in Sociology of Law

The seminar is designed for students who wish to pursue research on the themes such as tradition and modernism, postcolonialism, etc. In the Korean tradition of Habermas, legal realism, critical legal studies, feminism, postmodern and postcolonial feminist jurisprudence will be systematically introduced, interpreted, and discussed in this seminar. Empirical legal issues will always be associated with theoretical questions.

Anthropology of Law

Anthropology of Law

The seminar course will discuss a variety of theory and method that have dealt with the dynamics between law and society in the Western and Korean contexts. That includes Emile Durkheim, Eugen Ehrlich, Jurgen Habermas, legal realism, critical legal studies, feminism, postmodernism, postcolonialism, etc. In the Korean tradition of law and society theory, the themes such as tradition and customary law, colonial influences, legal consciousness, attitude of empirical study of law, democratization and law will also be reviewed. In each and every subject, how the lawyers enhance the capacity of a society to resolve conflicts justly, and to discover more truth through the law.

Theories in Feminist Jurisprudence

Theories in Feminist Jurisprudence

This course will offer an opportunity to read essential feminist jurisprudential writings. Feminist jurisprudence is a theory to interpret the law from women’s positions and experiences unlike mainstream jurisprudence mostly assuming the man as the universal subject of the law. Mending this male-bias in the law, feminist jurisprudence aims to bring justice between genders including other minorities.

In this seminar, the questions and themes such as following will be dealt with: the meaning and reasoning for gender equality in law, how to accomodate the ‘difference’ between gender without sacrificing the other gender, how about the differences among same genders, how to listen to women’s voices, and the power question between West and the rest. In order to deal with such questions and issues, theoretical stream that includes dichotomy of the public and private sphere, equal treatment and special treatment, justice and power, postmodern and postcolonial feminist jurisprudence will be systematically introduced, interpreted, and discussed in this seminar. Empirical legal issues will always be associated with theoretical questions.
Policy science of Law is a branch of legal studies which tries to look to and explain the relationship between law and policy; study the function and role that law as a whole plays in context of state structure; and study on desirable framework for legal policy.

This course aims to make students acquire basic abilities in performing trials as legal profession by actual practice of a mock trial.

931.515 Methodology of Legal Science

Methodology of Legal Science

Policy science of Law is a branch of legal studies which tries to look to and explain the relationship between law and policy; study the function and role that law as a whole plays in context of state structure; and study on desirable framework for legal policy.

931.516 Korean Modern Legal History

Korean Modern Legal History

This course aims at deepening students’ understanding of current Korean law by undertaking a comparative study of the process of the reception of Western law in Korea, China, and Japan and the laws of colonization and by examining the historical significance of the developmental process of the Korean legal system since the Liberation.

931.517 Contemporary Law

Contemporary Law

This course provides a critique on the legal theories concerning the concept of law, ideals of law, legal interpretation, the relation between law and morality and its application and impact on the society. The students will be asked to focus on the theories that are mostly relevant in our society, and explain the issues of the objectivity of law and how it is executed in the actual application of law.

931.518 Moot Court

Moot Court

This course seeks systematically to enhance students' understanding of German law. However, as this task is impossible to accomplish in one semester, the course will extend over two semesters, each of which will cover certain fields of law. At the conclusion of the course, a comparison will be drawn between German and Korean law.

931.519 Internship

Internship

This course aims to make students acquire basic abilities in performing trials as legal profession by actual practice of a mock trial.

931.520 German Law

German Law

This course seeks systematically to enhance students’ understanding of German law. However, as this task is impossible to accomplish in one semester, the course will extend over two semesters, each of which will cover certain fields of law. At the conclusion of the course, a comparison will be drawn between German and Korean law.

931.521 Seminar on Roman Law

Seminar on Roman Law

This course aims to make students acquire basic abilities in performing trials as legal profession by actual practice of a mock trial.
This course will examine the primary issue of the ways in which laws regulating economic phenomena should be enacted and interpreted so as to facilitate economic efficiency and equity.

This is a seminar in law and economics. Through this seminar, students will have opportunities to examine in detail the academic literature in some selected areas of law and economics. Specific topics and areas to be covered will change each year reflecting advancements of relevant research results.

This course aims to help students to understand the role of communication and language in a general law process. It will examine the role of language in judiciary proceedings, and the influence of linguistic interactions between related translators. By analyzing the features of communication in the law process and examining law system and the role of language in a society, students can understand the norm and attitude sank into Korean law system and process. This course will enhance students' understanding on law system and proceedings through interdisciplinary approaches of law, communication, social theories and scientific research.

This course will provide such fundamental knowledge to students.
931.528  
**Biocrights and Law**

- Consideration of the biological ethics and the ethical implications of human biological development.
- Examine the roots of legal rights and the role of law in the social context.

931.529  
**Nature and Legal Positivism**

- Analysis of natural law and legal positivism.
- Discussion of the relationship between law and ethics.

931.530  
**Topics in Korean Legal History**

- Examine the history of legal philosophy in Korea.
- Discuss the historical development of Korean legal thinking.

931.531  
**Contemporary Human Right**

- Discuss the theories on the foundations of human rights.
- Cover issues in contemporary human rights law, such as poverty, humanitarian intervention, state responsibility in relation to human rights violations, human rights of sexual minorities, biotechnology in relation to human rights.

931.532  
**Contemporary Justice and Law**

- Examine the roots of legal rights and the role of law in the social context.
- Discuss the historical development of Korean legal thinking and legal consciousness.

931.533  
**Introduction to American Law**

- Introduction to the legal system of the United States and the governing principles of case law.
- Consider the historical formation of American legal tradition, specific features, and fundamental principles.

931.534  
**Law & Society**

- Explore the inter-relationship between law and society.
- Consider the evolution and development of specific institutions such as family or criminal law in each country.

931.535  
**Cases Studies in Gender and Law**

- Examine the roots of legal rights.
- Discuss the theories on the foundations of human rights.
- Cover issues in contemporary human rights law, such as poverty, humanitarian intervention, state responsibility in relation to human rights violations, human rights of sexual minorities, biotechnology in relation to human rights.
This course aims at enhancing students' basic legal research capability. Students will learn, through practice in class, how to find and research statutes, cases, and other relevant materials to solve a given legal issue. Special attention will be paid to developing methodology for conducting research to obtain prompt and accurate results. Individualized feedback will be provided to students.

### Legal Research

**931.536 법률정보의 조사 1-1-0**

*Japanese Law*

이 강의는 실제로 법률심사가 되고 난 후 업무와 관련하여 가장 기본적인 능력이 되리라 생각되는 것을 목표로 한다. 주어진 과제에 대한 국내외 법률 및 관련 정보, 관련 문헌 등 법률정보를 조사하는 방법을 실습을 통해 제도한다. 법적 문제를 올바르게 해결하는 데 있어 있어야 할 자료와 문헌들을 찾아내어 정확하게 정리하면서도 신속하게 찾아내는 방법론을 탐구하는 데 주안점을 둔다. 법문정보조사 결과에 대해서는 교원의 검토 및 피드백이 이루어질 것이다.

This course aims at enhancing students’ basic legal research capability. Students will learn, through practice in class, how to find and research statutes, cases, and other relevant materials to solve a given legal issue. Special attention will be paid to developing methodology for conducting research to obtain prompt and accurate results. Individualized feedback will be provided to students.

### Legal Writing in English

**931.538 법률영어·영어법서조 작성 3-3-0**

*Japanese Law*

이 과목에서는 한국 법률학의 관점에서 보통법 체계와 미국사 법제도의 기초적 사항을 연구하고, 영미법계 법제와 관계의 이해 그리고 국내외법 실무에 요구되는 기본적 영어 법률용어를 숙지 하며, 이를 기초로 하여 법률문서에 적용되는 일반적 사항에서 목적에 부합하고 효과적이며 설명력 있는 영어 법률문서의 작성을 연습한다. 보다 구체적으로는, (1) 효과적이고 설득력 있는 법률문서의 기본적 원칙 및 여러 형식과 용도의 법률문서를 구현한 후, (2) 영미법 형식의 역사적 배경, 발전(법조), 법률제도, 법률학(법조), 조직, 기본적 소송절차, 법조 및 법률교육을 알아보고, (3) 평의한 중요, 간행에 관한 문장, 동등과 사의의 사용법을 연습하고, (4) 성적련여, 성적정의 등 법률의 주요한 열의와 문단간의 논리적 연결을 주제로 문단조사를 연습하며, (5) 특정 내용을 강조하거나 또는 강조하지 않아야 하는 경우 등에 법조문서의 원칙 아래에 문단조사를 통한 정적 사항에 문단조사를 연습한다. (6) 목적과 대상에 적합한 어법의 사용과 환경을 주로 저술의 방식과 법조를 연습하고, (7) 영미법의 발전(법조)과 관련 정보 감각 및 법·판례·학설 등의 인용법에 대해 법 및 공정, 문단조사를 연습한다. (10) 실제의 법률문서의 실제의 저술, 소장 등, pleadings, legal memoranda, appellate brief, court order, 및 플레도, 설득력 있는 법률문서를 연습한다. (11) 실제의 편지를 연습한다. (12) 실제의 형식과 법조의 사용법을 연습한다.
법 등 주요한 법영역의 기본적인 내용을 다룬다. 중급 이상의 일
본이 능력을 갖춘 수강생들을 대상으로 하여 일본어로 강의하는
것을 원칙으로 한다.

모던 한국의 jurisprudence began with the introduction of
Western jurisprudence via Japan. As such the influence of
Japanese jurisprudence in the formation and development of
Korean jurisprudence is very significant. Even today, al-
though Korean jurisprudence is advanced and sophisticated, it
is no denying that Japanese jurisprudence and legal practice
remains influential in Korea at least to some extent. Also,
there is a need for understanding Japanese law due to the
sheer volume of commercial and other exchanges between
the two countries.

This course is an introduction to Japanese law and deals
with the basic principles of key substantive and procedural
laws of Japan. The course will be conducted in Japanese and
as such certain degree of Japanese language proficiency is
required.

한국과 중국의 수교 이후 양국의 관계는 급격히 발전했고, 두
나라 사이의 인적·물적 교류의 규모는 배를 넘는다. 중일
법률가들이 일본과 일본의 교류에 참여하여 중국의 체제와
침착하게 관찰하고 그에 대해 자문을 해 준
수 있는 변호사에 대한 수요가 급증하고 있다. 또한 중국은 자본
주의 개방과 함께 문화권의 제정 등 법제의 근본적인 변화를 겪
고 있으며, 그 과정에서 외국 법제도를 이해하고 수용하려는 움직임
도 적지 않게 나타나고 있다. 이러한 한국법과 중국법학의 변화는
그 지역사회 우리나라 법학의 연구대상이 될 뿐만 아니라, 우리법학
을 중국에 알리고 전파할 좋은 기회가 된다.

이 강의는 중국의 법원의 성격을 갖는 강좌로서, 중국의 법체계
인간과 사회의 과정에 중점을 둔다. 중국의 법학,
법학과 사회과학과의 결합은 이미 오랜 역사를 가지고 있다. 외
국의 경우, 이는 사회과학과 법학간의 학계간 연구는 독립적인 학
문 분야로 발전해오고 있으며 법학전문대학원의 교육과정의 일부
로 포함되어 있다.

 인간의 심리과정과 행동을 연구하는 심리학이 사법제도와 그
운용에 미치는 의미와 중요성은 무엇이든 강조해도 지나치지 않다.
개가 국민참여재판 등 일반인들의 사법 참여가 확대되고 있는
현 상황을 감안할 때, 어느 때보다 전문 변호사들이 인간의 심리
와 행동에 대한 이해에 넓히 필요가 있다고 판단한다.

이 강의는 심리학의 학문에 해당하는 강좌로서, 사법제도와 운
용과 관련된 다양한 인간의 심리과정과 행동을 다룬다. 특히, 판단
및 기억 오류, 증인 증언, 사법적 의사결정, 배심원 설득, 정신
건강, 문화와 법행 등에 중점을 둔다.

The combination of Law and Social Sciences has a long
history. The interdisciplinary research between Law and vari-
ous areas in Social Sciences has evolved as an independent
domains of research, and they have been included as part of
the curriculum in law schools in foreign countries.

The significance of the impacts that psychology, as a
study of psychological processes and behavior, can have on

931.540 일본의 소송실무 3-3-0
Japanese Law and Practice

일본법학이 우리나라 법학에 깊은 영향을 미치는 데 있어
일본의 인적·물적 교류의 규모에 비해도 뛰어, 일본법을 이해하
고 습득하는 학문·실무적 필요성이 커져 있다. "일본법"이
일본의 성격과 경제사와 일본법계 일반에 대한 기본적 특징을
다루어, "일본의 소송실무"에서는 우리나라와 일본 사이의 교류
과정에서 특유하게 나타나는 법적 문제들을 선별하여 집중적으로
다른 것이다. "일본법"과 마찬가지로 중급 이상의 일본어 능력을
갖춘 수강생들을 대상으로 하여 일본어로 강의하는 것을 원칙으로
한다.

이 강의는 한국인의 법학 입문에 해당하는 강좌로서,
한국과 중국의 교류와 관련하여 대학의 학계간의 연구는 이미 오
랜 역사를 가지고 있다. 또한 중국은 자본주의 개방과 함께 문
화권의 제정 등 법제의 근본적인 변화를 겪고 있으며, 그 과정
에서 외국 법제도를 이해하고 수용하려는 움직임도 적지

931.541 중국법 3-3-0
Chinese Law

한국과 중국의 수교 이후 양국의 관계는 급격히 발전했고, 두
나라 사이의 인적·물적 교류의 규모에 비해도 뛰어, 일본법을 이해하
고 습득하는 학문·실무적 필요성이 커져 있다. "일본법"이
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과정에서 특유하게 나타나는 법적 문제들을 선별하여 집중적으로
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랜 역사를 가지고 있다. 또한 중국은 자본주의 개방과 함께 문
화권의 제정 등 법제의 근본적인 변화를 겪고 있으며, 그 과정
에서 외국 법제도를 이해하고 수용하려는 움직임도 적지

931.542 중국의 소송실무 3-3-0
Chinese Law and Practice

중국법과 중국법학의 급격한 변화를 고려하면, 중국법을 이해하고
습득할 학문·실무적 필요성이 커져 있다. "중국법"에서 중
국 법체계 일반에 대한 기본적 특징을 다루어, "중국의 소송실
무"에서는 우리나라와 일본 사이의 교류과정에서 특유하게 나타나
는 법적 문제들을 선별하여 집중적으로 다루는 것이다. "중국법"과
마찬가지로 중급 이상의 중국어 능력을 갖춘 수강생들을 대상으로
하여 중국어로 강의하는 것을 원칙으로 한다.

이 강의는 한국인의 법학 입문에 해당하는 강좌로서,
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랜 역사를 가지고 있다. 또한 중국은 자본주의 개방과 함께 문
화권의 제정 등 법제의 근본적인 변화를 겪고 있으며, 그 과정
에서 외국 법제도를 이해하고 수용하려는 움직임도 적지

931.543 법심리학 3-3-0
Law and Psychology

방학과 사회과학과의 결합은 이미 오랜 역사를 가지고 있다. 외
국의 경우, 이는 사회과학과 법학간의 학계간 연구는 독립적인 학
문 분야로 발전해오고 있으며 법학전문대학원의 교육과정의 일부
로 포함되어 있다.

 인간의 심리과정과 행동을 연구하는 심리학이 사법제도와 그
운용에 미치는 의미와 중요성은 무엇이든 강조해도 지나치지 않다.
개가 국민참여재판 등 일반인들의 사법 참여가 확대되고 있는
현 상황을 감안할 때, 어느 때보다 전문 변호사들이 인간의 심리
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및 기억 오류, 증인 증언, 사법적 의사결정, 배심원 설득, 정신
건강, 문화와 법행 등에 중점을 둔다.

The combination of Law and Social Sciences has a long
history. The interdisciplinary research between Law and vari-
ous areas in Social Sciences has evolved as an independent
domains of research, and they have been included as part of
the curriculum in law schools in foreign countries.

The significance of the impacts that psychology, as a
study of psychological processes and behavior, can have on
법학전문대학원(Graduate School of Law)  

생략된 내용을 포함하여 전체 문서의 텍스트를 추출하고, 그 텍스트를 아래와 같이 자연어로 정리하였습니다.

**공법 1(헌법과 정치제도)**  2-3-0  
Public Law 1 (The Constitution and The Government Structure)

본 강의는 국가의 기본법인 헌법 및 국가의 정치제도에 대한 이해를 증진함을 목적으로 하며, 헌법의 개념, 분류, 제정과 개정, 헌법의 수호 등의 현행 헌법 일반과 대한민국 헌법의 역사, 기본권, 기본제도와 기본질서를 내용으로 하는 현행 헌법의 총론 그리고 정치제도론의 이론적 기초와 제도, 구성원리 및 형태, 국가기구와 국가기능, 헌법상 국가기관의 구성, 대통령, 행정부, 사법부, 민법질서 등의 개별기관을 내용으로 하는 정치제도론으로 구성되어 있다.

The objective of this course is to improve the understanding of students in respect of the Constitution, which is recognized as the basic law of the nation, and the government structure. The subject examines the general principles of the Present Constitution, including the concepts, the defense of Constitution, and the history, fundamental principles, and the basic system and development of the Korean Constitution. The theoretical basis and system of the governmental structure, the composite principles of government organs, the form of government structure, functions of the nation and state sovereignty, the individual functions of state organs of a constitutional nature, such as the national assembly, the president, the executive, the judiciary and the constitutional court will also be studied.

**공법 2(기본권론)**  3-3-0  
Public Law 2 (The Fundamental Right)

본 강의는 우리 헌법상의 기본권보장을 위한 이해를 증진함을 목적으로 하며, 기본권 일반론, 헌법상의 기본권기본권이 구체적으로 보장하는 내용과 범위 및 그 제한, 그리고 기본권의 체계적 보장으로서 헌법재판제도 등을 개별 기본권과 관련된 헌법재판소의 관례를 중심으로 살펴보는 것을 그 내용으로 한다.

The objective of this course is to promote an understanding of Constitutional protection of the fundamental rights. The subject examines the general theory of fundamental right, the concept and limit of each right, the restraint of it, and constitutional adjudication as procedural protection with the focus of many cases of the Constitutional Court.

**공법 3**  3-3-0  
Public Law 3

이 강의의 목표는 행정법 일반론을 습득함으로써 법률가로서 필수수적으로 갖추어야 할 법령의 해석적·비판적 능력과 법실지 전체 체제에 대한 이해를 증진하는 것이다. 구체적으로는 행정조직, 행정입법, 행정행정, 행정결재, 행정강제, 행정구제 등의 주제에 구애된다. 실정법과 관례를 소재로 하여 현실 문제를 해결할 수 있는 능력을 배양하는 데 초점을 맞추는 것이다.

The goal of this course is to acquaint students with the general theories of administrative law that helps them to develop skills in legal analysis and reasoning and to promote understanding of the whole system of legal order. It consists, in particular, of administrative organization, administrative legislation (rulemaking), administrative acts, administrative process, administrative enforcement, administrative sanction and administrative remedies. The course also focuses on cultivating skills to solve practical problems based on the topics discussed in positive law and case law.

**북한법**  3-3-0  
North Korean Law

북한법에 대한 강의는 남북한의 군사적·정치적·경제적·사회적 상호관계의 특성에서 발생하는 법률충돌과 모순을 합리적으로 해결하기 위한 전제로서 북한법을 집중적으로 이해할 것을 목적으로 한다. 북한법을 비롯하여 행정법, 민사법, 형사법 등 일반적인 법률체계와 남북교류협력에 관한 특별법을 체계적으로 분석하고, 남한의 법률체계와 비교법적으로 검토함으로써 남북한 통일을 대비하여의 사회법과 법률통합에 기여할 수 있는 방안을 모색하는 것을 연구하고자 한다.

The objective of this course is to understand present laws of North Korea. The fact that the system of North Korean Laws is basically different from that of South Korean Laws causes legal conflict and contradiction in the course of the exchange and cooperation between South and North Korea. This problem will be effectively solved by study on comparative analysis of laws of South and North Korea. It will offer useful instructions to us in preparing for reunification of South and North Korea.

**비교헌법**  3-3-0  
Comparative Constitutional Law

우리 한법학은 이제 외국의 한법 및 헌법이론을 일부적으로 수입한 데 나머지 한국헌법의 관점에서 외국의 경험을 취捨 선택할 수 있게 되었다. 이것은 독자적인 비교헌법학 강의를 얻을 수 있는 토양이 성숙함을 의미한다. 이 강좌에서는 우선 비교헌법학의 방법을 공부해 심도 있게 고찰한다. 이어서 영국, 미국, 독일, 프랑스, 일본 등 뿐 아니라 제3세계의 가장 동일한 국가들의 헌법제도를 주로 논쟁점별로 분석한 후 우리에게 주는 시사점에 대해 토론한다.

We can study constitutional law not by direct importing foreign constitutional law and theory but by making review and choices many cases of other countries from our view. It means that independent comparative constitutional law course could be made. In this course, student examines the method of comparative constitutional law. Constitutional system of England, U.S., Germany, France and other countries will be studied in each essential point and discussed on the meaning for our constitutional law.

**선거제도론**  3-3-0  
Studies of Electoral System

우리 선거제도법은 1994년 제정된 공직선거법을 바탕으로 한다. 하지만 선거투표방법에 초점을 둔 법의 목적으로 인하여 선거의 자유가 오히려 침해될 소지가 있다. 또한 통합선거법의 특성으로 인하여 더욱 작고 작은 개정이 염두한 그간 수많은 개정이 이루어졌다는 사실로부터 공직선거법의 체제적인 이해에 얼마나 많은 문제점이 도사리고 있는지 알 수 있다. 이에 대통령, 국회의원, 지방자치
정보와 관련된 선거제도의 문제와 바람직한 발전방향을 종합적으
로 연구하고 한다.

이 학과의 주요 과목으로서 언론정보법제와 정보관련법제의 종합적이고 체계적인
 연구를 실시한다.

언론정보법 3-3-0

Press, Mass Communication,
Telecommunication and Information Law

헌법상 언론의 자유는 민주주의의 기본원칙이다. 이에 따라 헌
법학 연구 특히 기본권론에서 언론의 자유의 중요성이 강조되고
있다. 현대적인 언론법의 기초를 확립하고 이를 바탕으로 further 연구
를 탐구한다. 나아가 현재 정보사회에서 인터넷의 보편화와 더불
어 정보보호와 정보공개의 화두가 가장 기본적인 화두로 등장한
다. 따라서 언론법제와 함께 정보관련법제의 종합적이고 체계적인
 연구를 실시한다.

의회제도론 3-3-0

Studies of the legislature and
Parliamentary Systems

의회제도론은 의회제도의 발전과 그 역사적 현장을 분석함으로
써 오랫동안 의회민주주의를 정확하게 이해하고자 하는 과목이다.
이를 위해서는 의회민주주의의 모범적 국가로 평가되는 영국, 프랑
스, 독일 등의 국가의 의회민주주의 발달과정에 대한 역사와 의회
민주주의의 현대적 적용으로서의 의회주의의 합리화에 대하여 연구
한다.

헌법소송법 3-3-0

Constitutional Litigation

헌법소송법은 행정대의정에 대한 대의정의 합리성을 분석함으로
써 오늘날의 대의정의 합리성을 이해하고자 하는 과목이다. 이를
 위해서는 대의정의 모범적 국가로 평가되는 영국, 프랑스, 독일
등의 국가의 대의정의 발달과정에 대한 역사와 함께 현대적 적용으로서
의회주의의 합리화에 대하여 연구한다.

로 전개한다.

Constitutional Law

헌법재판소에서 우리 국민에게 주어진 단일헌정에 대한 합리
성과 입법과정 및 해석론을 체계적으로 연구한다.

법학과(Dept. of Law)
으로 연구함. 이와가 입법과정의 민주성과 효율성이라는 분석을
적용하여 권한분배, 입법정책, 입법통제, 위헌범위상실자 등 관련 제
도와 문제를 심도 있게 연구함. 기본적인 일반이론의 연구와 명확
하여, 이를 우리나라의 법제와 관계 및 현안에 실제 적용하여 법
제와 관계 및 현안을 분석함으로써, 우리나라의 현정과 입법과정
에 대한 충실한 이해를 도모하며, 실제사안에 대한 분석력 및 대
응력을 높이는 것을 목표로 함. 개별 주요 주제의 예시: 대표주,
대의정임원주부의 직접민주주의, 입법과정과 법률의 민주적 정당
성, 법률의 제정과정, 이익집단과 로비, 입법청원, 의회입법원칙과
정당성, 위헌심판주무, 법률의법규범의 제정과정, 행정입법의
통제, 입법지원조직, 입법방법론, 범해석의 원리와 관련이론, 입법
평가제도, 금전법재판과 입법.

The class will analyze and discuss the following concepts and systems pertaining to the representation, legislative process and statutory interpretation in the Republic of Korea: representative democracy vs direct democracy, democratic legitimacy of law, legislative process of statutes and administrative lawmaking, interest group politics and lobbying, legislative petition, political parties and legislation, constitutional and statutory interpretation, constitutional reviews over the statute through Constitutional Court’s constitutional adjudication and the legislation.

931.613A

Law and Constitution

Law of Reunification

통일법은 분단된 남북한의 동공에 관한 규범체계를 연구함으로
한다. 이 강의는 남북한 법률문을 바탕으로 남한관계
을 분석하고, 남한관계의 특성이 반영하여 남한동공을 대
비하는 법제도를 체계적으로 연구하고 한다. 이와 함께, 동서독
통제, 중공국과 대만 등 분단국가에 관한 비교법적 연구를 활용하여 우리나라
의 통제제도 및 금전법재판소 관계를 비판적으로 분석한다.

The objective of this course is to understand the political
party’s constitutional meaning which should play a role of
connecting government and society. The subject examines
present political party system as concrete political reality,
constitutional theory on funding and acting of political party,
and related law systems and cases of constitutional court.

931.614

Public Construction Law

Law & Economic Regulation

우리사회의 모든 영역에서 경제규제의 중요성이 증대되고 있으
며, 이는 입법과 행정의 모든 실무영역에서도 마찬가지이다. 경제
규제는 시장경제의 효율성확보와 사회적 요구를 위한 긴장관계
속에서 여러 가지 법적 문제들을 해결하기 위한 것이다. 또한
학문적으로도 경제규제에 대한 연구와 관심이 증대되어 새로운 연구
구역이 확장되고 있다.

본 강좌는 경제규제법질서의 기본구조와 체계를 이해하고, 경제
규제조직 및 작용의 주요내용을 "사회적 법적가치적 통제" 및 "경
제행정의 효율성확보"라는 개념중요 구속에서 고찰한다. 이를 통하
여 법인과 경제, 법률과 경제적 사회적 관계에 대한 통합적
를 망라하고, 법통제법, 정보통신법, 에너지규제법, 식품안전법, 금
융규제법, 운송산업법, 환경법, 소비자의보호법 등 개별 규제법 영역
의 연구에 기초가 되는 지식과 시사점을 제공할 것이다.

Economic regulation is increasingly important in every
area of our society, not to mention in all practice areas of
legislation, administration and judicature. It constantly raises

931.615

History of Korean Constitution

한국의 원법역사에 대하여 이해함으로써 미래의 원법에 대한
various legal issues in the tension between securing efficiency in the market economy and a social requirement. Also, with continued growth of academic and scholarly interests and research on this subject, new research areas are being developed.

This course is to understand the basic structure and the system of the legal order of economic regulation and to examine its institutional organization and principal operations in the conflict structure of the “social constitutional state control” and “securing efficiency in economic administration.” This will foster insight into the relationships among law and economy and legal order and economic order. It will also provide basic knowledge and perspectives useful for anti-trust law, communications law, law of energy regulation, food safety law, law of financial regulation, transportation law, environmental law, consumer protection law, etc.

931.621 공동주택의 건설과 관리 3-3-0
Construction and Management Law of Condominium

한국의 일반적 주거형태인 아파트의 건설과정 및 공급에 대한 법제에 이해하고, 공동주택에 입주한 이후의 공동주택 관리에 대한 법적 및 사법적 제 문제를 강의함.

This lecture has its focus on construction and management law of condominium. Condominium is most popular form of housing in Korea and this lecture can help law school students for understanding the city on the point of public and private law.

931.622 공법사상과 법방법론 3-3-0
Legal thoughts and Methods for Public Law

근대 이후 프랑스, 독일, 영국, 미국 등 서양의 주요 공법학자 내지 법철학자를 중심으로 공법(행정법과 헌법)에 관한 기본적인 법사를 익히고, 이를 실체적인 법방법론으로 구체화하여 현재 우리나라 실제성상의 주요성과 관리와 연결함으로써, 한편으로 법학전문대학원에서 부족한 이후의 공동주택 관리에 대한 법적 및 사법적 제 문제를 강의함.

As a first step, this lecture aims to make understand fundamental legal thoughts for public law (constitutional & administrative law) with the help of the theories of the major public law scholars and legal philosophers of France, Germany, England, and USA in modern times. As a second step, students are demanded to grasp the concrete methodological aspects of legal thoughts and legal philosophy. It can be expected that through this lecture students can understand the academic and philosophical bases of public law on the one hand, and the practical meanings of legal philosophy on the other hand.

931.623 비교행정법 3-3-0
Comparative Administrative Law

국제화에 갈망하는 법률가의 양성을 위하여, 행정법의 고향인 프랑스의 행정법, 이를 받아들이 범위와 논리를 발전시키는 독일의 행정법, 그리고 최근 보통법체계에서 벗어나 독자적인 행정법 및 행정소송체계를 발전시키고 있는 영국의 행정법, 또한 이들 프랑스-독일-영국의 행정법을 아우르는 유럽연합의 행정법, 그리고 아직 보통법체계를 유지하고 있는 미국의 행정법에 관한, 행정법 및 행정소송의 기본적 쟁점은 중심으로 다각적으로 비교함으로써 우리나라 행정법의 현재 좌표를 확인하는 동시에 앞으로의 발전방향을 가능하고, 마지막으로 우리 이웃의 일본과 중국의 행정법의 현황을 확인하는 것을 강의목표로 한다.

On the one hand, this lecture aims to make students understand the similarities and differences of the administrative law systems of France, Germany, England, European Union and USA, in order that students can examine the actual problems of Korean administrative law system with the help of multi-dimensional comparative law methods. On the other hand, it can be expected that students can confirm the development of Korean administrative law system by comparing Korean system with the administrative law system of Japan, Chinese, and the other countries in Asia and Europe.

931.624 정보통신법 3-3-0
Communications Law

정보통신법은 정보화 사회에서 공동체 구성원인 개인이나 집단 상호간의 의사소통을 위한 매체들에 대한 규제의 총체를 말한다. 과학기술의 발전에 따라 정보통신시장의 발달은 오늘날 모든 사람의 생명관련을 규정하고 있다. 이 강좌는 주로 통신 및 방송시장에서 사업자에 대한 규제와 이용자보호를 위한 법제를 연구하는 데 중점을 두는가. 통신시장은 국방정책에 의해 제한된 분야에 판영하게 되어 도입되어 시장경쟁이 형성되고 있는 대표적인 분야이다. 통신시장화 기간 이러한 특징에 따른 통신법에 대한 연구는 여타 공익산업규제 분야에 대한 기초적인 이론을 함께 제공해 줄 것이다.

Communications Law is the whole of norms governing media for communications among individuals or groups that are members of community in the informationalized society. As science and technology develop, the growth of communications market regulates the living relations of all human beings today. This course primarily focuses on examining the carriers and industry regulations and the user protection legislation in the telecommunications and broadcasting market. In particular, the telecommunications market is the best example demonstrating the trend away from national monopolies towards competition in a regulated market by introducing privatization and liberalization. As such, the study on telecommunications law presents a leading model for introducing competition into the traditional public service sectors including energy law and air transportation law. It will, therefore, also provide the basic theory for other public utilities.

931.625 지방자치법 3-3-0
Local Government Law

우리나라 지방자치법의 전반적인 내용 및 특색의 이해를 목표로 한다. 강의의 주 내용으로는 지방자치의 의의 및 역시, 지방자치단체의 조직, 지방자치단체의 사무 및 권리, 지방자치단체의 협력과 통계 등이 다루어진다.

The object of this subject is to provide an understanding of the overall content and characteristics of the Korean law of local government. It will deal primarily with the significance and overall content of history of local governance, its organization, jurisdiction and power, and the issue of cooperation between and control of local governments.
Law of Public Service & Public Enterprise

This course aims at exploring the public law theory in the modern state and the post-modern state is that the state has become a benefit state (Leistungsstaat). Benefit, which is one of the salient characteristics appeared in the transition from the modern state to the post-modern state, is life care for citizens (Daseinsvorsorge), has been added to the list of important state tasks and rapidly grown to take a predominant position in the state functions. In response to this change in the traditional administrative law methodology and the expanding scope of state tasks, the establishment of the benefit administrative law (Leistungsverwaltungsrecht) has brought a fundamental change in the methodology of today. This course will study the procedures administrative agencies follow to make and enforce law. The course will explore the statutory framework that regulate the procedures, primarily as set forth in the Administrative Procedure Act. Some attention may be paid to the judicial imposition of procedural constraints on agencies. Freedom of Information Act is also covered.

Public Law Theory and Public Policy

Law and economics, law and policy, law and politics will be the main topics of the course. One of the salient characteristics appearing in the transition from the modern state to the post-modern state is that the state has become a benefit state (Leistungsstaat). Benefit, which is one of the salient characteristics appeared in the transition from the modern state to the post-modern state, is life care for citizens (Daseinsvorsorge), has been added to the list of important state tasks and rapidly grown to take a predominant position in the state functions. In response to this change in the traditional administrative law methodology and the expanding scope of state tasks, the establishment of the benefit administrative law (Leistungsverwaltungsrecht) has brought a fundamental change in the methodology of today. This course will study the procedures administrative agencies follow to make and enforce law. The course will explore the statutory framework that regulate the procedures, primarily as set forth in the Administrative Procedure Act. Some attention may be paid to the judicial imposition of procedural constraints on agencies. Freedom of Information Act is also covered.
Through this course, students will be given opportunities to apply what they learned through courses such as Constitutional Law and Constitutional Litigation. Students will be required to deal with hypothetical cases and will also be given opportunities to prepare various legal documents. Class discussions will take place and hands-on feedback on students’ work will be given on a regular basis.

**Practice and Advanced Administrative Law**

The course in administrative law offers students the opportunity to prepare various legal documents. Class discussions will take place and hands-on feedback on students’ work will be given on a regular basis.

**Civil Law 3**

The lecture in Civil Law 3 aims to deliver the contents of the Civil Code which are related to the creditor’s security interests. Starting from the concepts like obligation and common pledge of creditors, liberative prescription, oblique action and paulian action are treated. Then personal and real securities acknowledged in Korean law are intensively discussed, in relation to which various rights to use other’s things are introduced.

**Civil Procedure**

This course will focus on the understanding of the procedures for settlement in litigation, and aimed to improve the student’s ability to apply the rules of civil procedure in actual situation. This course will concentrate on the three essential elements, i.e. the court, the relevant parties and the procedure.

**Contemporary Contract Law**

This course will examine the meaning and constitution of the family by focusing on the section of the Civil Code related to domestic relations. It will introduce basic family relationships and cover topics such as marriage, the father-son relationship, and adoption. The course will also examine the system of succession to the head of the family.
_already a significant issue. Today, it is not uncommon to see

Invasion of privacy by the press and the web has become an

931.660 의료법 3-3-0

Law of Medical Treatment

931.661 채권회수법 3-3-0

Bond Collection Law

931.662 재산법판례연구 3-2-2

Case Studies in Law of Property and Obligation

본 강좌는 재산법에서 관련 사항, 물권, 채권법 등에 관한

This course aims to study important issues in the law of

Press • Internet • Personal Rights

언론이나 인터넷에 의한 인격권 침해 문제가 매우 중요한 문제로 등장하고 있다. 개인이 명예를 훼손당하였다거나 프라이버시를

Violation of privacy by the press and the web has become

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931.663 채권법판례연구 3-2-2

Case Studies in Law of Property and Obligation

이 과목은 근대 사회에서 발생한 민법의 문제 해결을 위한 기본적으로 이해하는 것을 목표로 한다. 주로 미국과 유럽의 가족법이 주된 비교 대상이 되었으나 그 외에도 우리나라와 관련된 주요 문제들과 비교해본다. 또한 제기된 주요 문제들은 이슬람권의 가족법과 관련해 제기된 주요 문제들을 비교해본다. 또한 학생들은 해당 조항의 학문적 의미를 규명하는 것을 목적으로 한다. 이 과목은 민법의กฎหมาย의 문제를 조명하고, 그 문제를 해결하기 위한 여러 방법을 탐구하는 것을 목표로 한다.

931.664 국제가족법 3-3-0

International Family Law

이 과목은 비교법의 주된 대상이 되는 가족법에 관련한 국제인간의 문제를 주제로 한다. 이 과목은 일상적인 생활에서 발생하는 가족법의 문제를 비교법적으로 고찰하고, 그 문제를 해결하기 위한 여러 방법을 탐구하는 것을 목표로 한다. 또한 학생들은 해당 조항의 학문적 의미를 규명하는 것을 목표로 한다.

931.665 독일법사 3-3-0

German Private Law

본 강좌는 독일법사에 있어서 계약, 불법행위, 물권, 가족, 상속, 사법에 관한 분야들로 나누는 것을 목표로 한다. 이 과목은 비교법적 접근방법도 채택할 것이다. 이 과목은 다른 나라들의 경험이나 시사점을 도출하는 것을 목표로 한다.

931.666 비교사회법 3-3-0

Seminar on Comparative Private Law

이 세미나는 비교법의 비교법을 위한 것이다. 비교법은 한국 법의 영향을 받은 영향적 영역도 있어 새로운 개별론을 탐구하고 있다. 이 과목은 다른 나라들의 경험이나 시사점을 도출하는 것을 목표로 한다. 이 과목은 다른 나라들의 경험이나 시사점을 도출하는 것을 목표로 한다.

931.667 소비자계약법 3-3-0

Customer Contract Law

이 강의는 소비자보호와 관련된 제한 법률상의 계약법적 규율을 중심으로 하여 소비자보호에 관한 종합적인 연구를 수행하는 것을 목표로 한다. 이 강의는 비교법적 접근방법을 사용하여 다른 나라들의 경험이나 시사점을 도출하는 것을 목표로 한다. 이 과목은 다른 나라들의 경험이나 시사점을 도출하는 것을 목표로 한다.

931.668 정보통신와 사법 3-3-0

Information Technology and Private Law

정보통신은 현재의 사회에서 중요하고 필수불가결한 영역으로 자리매김하고 있다. 그리고 이 분야는 여러 분야에 걸쳐 부각되어 새로운 법적 쟁점들을 던져주고 있다. 이 과목은 다른 나라들의 경험이나 시사점을 도출하는 것을 목표로 한다. 이 과목은 다른 나라들의 경خ이나 시사점을 도출하는 것을 목표로 한다.

931.669 프랑스사법 3-3-0

French Private Law

본 강좌는 프랑스법사에 있어서 계약, 불법행위, 물권, 가족, 상속, 사법에 관한 분야들로 나누고 이를 다시 소주제별로 분류하여 연구하고 발표, 토론을 하는 세미나 형식의 강좌이다. 이 강의는 비교법적 접근방법을 사용하여 다른 나라들의 경험이나 시사점을 도출하는 것을 목표로 한다.
This course introduces procedures of civil execution. We will examine the particularity of civil execution process, subject · object · requisite of the execution, and the execution of property rights on real estate, personality, bond, and auction.

- **Arbitration**

This course focuses on the study of the legal issues in arbitral proceedings. Emphasis will be placed on the agreements to arbitrate, selecting and challenging arbitrators, recourse against award and recognition and enforcement of the resulting arbitral award. The course materials include court decisions, national arbitration law, the rules of various arbitration institutions.

- **Laws of Bankruptcy and Corporate Reorganization**

This course will examine the laws of bankruptcy and composition, which come within that area of law dealing with situations where the financial circumstances of companies or individuals have seriously deteriorated. The course will also cover the Law of Corporate Reorganization, which aims at restoring businesses that have fallen into bankruptcy. Knowledge of the law of compulsory execution (including preservation proceedings) is a prerequisite.

- **Comparative Study on Procedural Laws**

There are numerous procedural laws in the legal system. These laws-albeit the laws on criminal procedure may be considered as an exception- have stemmed from civil procedural law, thus many laws tend to merely state the regulations which differ from the laws on civil procedure. This underlines the importance of examining other procedural law in tandem with the law on civil procedure. Furthermore, it is imperative to obtain knowledge of the civil procedure in other countries. This seminar adopts a comparative studying
method of Korean civil procedure with other procedural laws and foreign civil procedural laws.

931.678 민사소송법 연습 3-2-2
Case Studies in Civil Procedure

This course involves an overview of the financial regulatory system that involves financial transactions such as loans and bond issues, and also provides an introduction to financial institutions (such as banks and securities companies). It reviews legal issues related to basic forms of financial transactions and offers opportunities to apply what is learned through courses such as Civil Law and Civil Procedure. Class discussions will take place and hands-on feedback on students’ work will be given on a regular basis.

931.680 민사법실무연습 3-3-0
Practice and Advanced Civil Law and Procedure

This course offers opportunities to apply what was learned through courses such as Civil Law and Civil Procedure. Students will be required to deal with hypothetical cases and will also be given opportunities to prepare various legal documents. Class discussions will take place and hands-on feedback on students’ work will be given on a regular basis.

931.701 금융법개론 3-3-0
Introduction to Financial Law

This course seeks to enhance students’ understanding of corporate finance law by concentrating on several legal frameworks which deal with conflict of interests relating to corporate constituencies (e.g. majority shareholders, minority shareholders and creditors) while the (legal) corporate finance jurisprudence would be applied to various legal documents. Class discussions will provide a general discussion over fundamental legal issues concerning corporate activities. Major subjects of the course include corporate governance and corporate finance: the corporate governance agenda would focus upon the conflicts of interest among corporate constituencies and analysts legal and regulatory issues in such transactions by special references to Commercial Act (excluding corporate law), the Act of Bill of Exchange, and the Act of Promissory Note.

931.703 회사법 3-3-0
Corporate Law

This course covers the major institutions of civil procedures by analyzing academic theories and cases. Many trial topics are covered, with special emphasis on the procedural aspects that arise out of the relationships among the parties, joinder of claims and parties, res judicata and appeals. The purpose of this course is to enable students to apply what they learned through courses such as Civil Law and Civil Procedure. Through this course, students will be given opportunities to apply what they learned through courses such as Civil Law and Civil Procedure. Students will be required to deal with hypothetical cases and will also be given opportunities to prepare various legal documents. Class discussions will take place and hands-on feedback on students’ work will be given on a regular basis.

931.704A 기업재무와 법 3-3-0
Corporate Finance and Law

This course seeks to enhance students’ understanding of corporate finance law by concentrating on several legal frameworks which deal with conflict of interests relating to corporate constituencies (e.g. majority shareholders, minority shareholders and creditors) while the (legal) corporate finance jurisprudence would be applied to various legal documents. Class discussions will provide a general discussion over fundamental legal issues concerning corporate activities. Major subjects of the course include corporate governance and corporate finance: the corporate governance agenda would focus upon the conflicts of interest among corporate constituencies and analysts legal and regulatory issues in such transactions by special references to Commercial Act (excluding corporate law), the Act of Bill of Exchange, and the Act of Promissory Note.

931.705 기업자배추구조론 3-3-0
Corporate Governance of the Public Firm

This course seeks to enhance students’ understanding of corporate finance law by concentrating on several legal frameworks which deal with conflict of interests relating to corporate constituencies (e.g. majority shareholders, minority shareholders and creditors) while the (legal) corporate finance jurisprudence would be applied to various legal documents. Class discussions will provide a general discussion over fundamental legal issues concerning corporate activities. Major subjects of the course include corporate governance and corporate finance: the corporate governance agenda would focus upon the conflicts of interest among corporate constituencies and analysts legal and regulatory issues in such transactions by special references to Commercial Act (excluding corporate law), the Act of Bill of Exchange, and the Act of Promissory Note.

Law on Commercial Transactions

This course provides basic knowledge of law relating to financial transactions, financial markets and activities of financial institutions (such as banks and securities companies). It reviews legal issues relating to basic forms of financial transactions such as loans and bond issues. It also provides an overview of a financial regulatory system involving banking, securities and other financial services.

931.702 상거래법 3-3-0
Law on Commercial Transactions

This course will provide basic knowledge of law relating to financial transactions, financial markets and activities of financial institutions (such as banks and securities companies). It reviews legal issues relating to basic forms of financial transactions such as loans and bond issues. It also provides an overview of a financial regulatory system involving banking, securities and other financial services.
This course will examine the legal issues which arise in connection with insurance. It deals with not only insurance transactions but also insurance regulations. It reviews the various forms of insurance transactions including both general insurance and long-term insurance, and analyses legal and regulatory issues in such transactions by special reference to Commercial Act (Insurance Chapter), and Insurance Business Act.

This course will examine the legal issues which arise in connection with financial transactions (including international financial transactions) and the concept of which is one of the main pillars supporting the idea of a “financial market”. This course also reviews legal and regulatory issues relating to various types of modern financial transactions. It will review both the contractual and proprietary aspect of trust arrangement and the regulatory aspect of trust business which is now regulated by the Financial Investment Services and Capital Markets Act.

This course will examine various legal and regulatory issues relating to financial investment products (such as securities, derivatives and collective investment schemes) and financial investment services, which are regulated by the Financial Investment Services and Capital Markets Act. It will also review legal and regulatory issues relating to the infrastructure of capital market such as securities and futures exchanges and clearing and settlement systems.

This course seeks to enhance students’ understanding of corporate control transactions, such as merger, stock acquisition, and asset transfer. Since such acquisitive transactions have a very huge impact on corporate insiders’ and outsiders’ financial interests, several fine-tuned legal institutions have been developed. Among these, this course will concentrate on corporate law and securities regulation, but other related areas such as accounting, taxation, and labor issues will be discussed as well.
Corporate Litigation

This course is aimed to expose students with basic knowledge on corporate law and civil procedure to major corporate litigation cases and unique jurisprudence of litigations over corporate disputes. Major subjects of the course include derivative actions, class actions, preliminary injunctions associated with hostile M&A attempts. Students may be required to research and discuss assigned corporate litigation cases.

International Corporate Governance

This course concentrates more on analysing fundamental development of financial law and may take the form of court cases or other real or hypothetical cases, examining principles of financial law. This course may use seminar format, and in this context, this course offers why such rules are applied in practice. Students who already have basic knowledge of financial law, including US and EU corporate governance, are encouraged to attend this course to enhance their ability to identify and analyze advanced legal concepts and to gain a better understanding of business practices in different corporate governance jurisdiction.

U.S. Securities Regulation

This course is designed to teach some common principles applicable to all the types of tax that currently exist under our tax system, and the basic principles of the two most important types of tax, i.e. income tax and consumption tax. This course may use court cases or other real or hypothetical cases, examine recent development of financial law and may take the form of seminar.
This course is intended to teach the accounting-related side of our personal and corporate income tax law. The timing of recognition and realization of gains and losses is the main theme of the course, whereas how the relevant rules under tax law is different from those of financial accounting, and the method by which such difference is adjusted are also important topics to be tackled. Basic principles of financial accounting would also be taught to the extent that it is necessary for the attending students to follow the course.

This course is designed to teach the basic principles and the method by which such difference is adjusted are also important topics to be tackled. Basic principles of financial accounting would also be taught to the extent that it is necessary for the attending students to follow the course.

931.721 조세소송 3-3-0

Tax Controversies

조세소송 절차 전반에 대하여 개관하고, 특히 일반 행정소송이나 유형의 소송과 구별되는 조세소송의 특정적 법리에 관하여 살펴본다.

This course is designed to review the whole procedure of tax controversies in contrast with general administrative litigation and other types of court procedures.

931.722 법인세와 주주과세 3-3-0

Corporate Income Taxation

법인세 중에서도 특히 자본거래라 불리는 부분, 즉 법인이 출자자 사이에서 일어나는 거래의 세법상 취급에 관하여 알아본다. 법인이란 무엇인가, 이러한 법인의 분기별 세법에서 어떠한 의미를 가져야 하는가, 법인을 설립하여 사업을 하지 않는 경우와 세법상 취급이 달라야 하는가, 법인이 설립하고 운영하면서 거기에 생긴 손익을 분배하고 균등적으로 법인을 성장하는 단계는 각각 세법상 어떻게 취급되어야 하는가와 같은 문제를 중점적으로 탐구한다.

This course intended to teach the tax implications of the transactions between a corporation or similar tax entities and the shareholders of the corporation or other entities. Questions such as what is a corporation, how a corporation should be treated in tax law, whether taxpayers who established corporation or other taxable entities should be treated any differently from other taxpayers without a corporate shell, and what are the tax implications of incorporation, distribution of gains and losses, and liquidation will be dealt with.

931.723 조세회피론 3-3-0

Tax Avoidance and Anti-Avoidance Rules

세법에 있어서 극히 중요한 부분을 차지하는, 조세회피에 대응하기 위한 설정법 규정들 또는 일반 원리들을 개관하고, 이러한 법원칙에 종속되는 원리는 어떠한 것인지, 이러한 법인의가 현 실 세계에서 어떻게 적용되고 있는지, 그리고 앞으로 어떻게 발전하여 나아가야 할 것인지에 관하여 알아본다.

This course is intended to teach the general principles and the currently existing tax law provisions that are designed to tackle the problem of tax avoidance. Both general and specific anti-avoidance rules will be explored, and the relevant case law will be analyzed. Questions such as what are the common principles of those anti-avoidance rules and how they can be improved in the future will also be tackled.

931.724 국제조세 3-3-0

International Taxation

조세조약을 중심으로 하여 국제조세에 관한 기본적인 국제규범이 형성되어 온 과정, 현재 존재하고 있는 형태, 그 기본적인 내용들에 관하여 알아본다.

This course is designed to teach the basic principles of international taxation. The focus will be on the various articles of the OECD Model Convention and relevant case law of different countries. How the presently prevailing international rules of international taxation have been established will also be mentioned to the extent necessary for the attending students to have a better understanding of the current rules.

931.725 조세법연습 3-2-2

Seminar on Tax Cases

세법에 관한 기본적인 법리로이 학습한 학생들을 대상으로 하며, 대법원의 조세 판례들을 살펴보는 과정에서 이러한 법리들이 현실 세계에서 어떻게 적용되는지에 관하여 보다 상세하게 살펴본다.

This course is for the students who have already acquired basic understanding of tax law. More case law on various issues will be studied and analyzed, and the attending students will have a deeper understanding of what are the issues that are likely to occur in real-life settings, and how basic tax principles are applied to those real-life cases.

931.726 지적재산권 법 3-3-0

Introduction to Intellectual Property Law

본 강좌는 저작권, 특허권, 상표권뿐만 아니라 영업비밀, 디자인권 등 무형의 지적재산 중에 관한 개론적 고찰을 목표로 한다.

This lecture is designed to deal with all important issues relating to intangible intellectual property such as not only copyright, patents, trademark but also trade secret, design patent and etc.

931.727 저작권법 3-3-0

Copyright Law

현재의 저작권법은 소설과 같은 어문저작물 뿐만 아니라 컴퓨터 프로그램, 응용기술저작물도 대상으로 하고 있다. 본 강좌는 다양한 저작물의 종류, 공정이용 법리에 따른 저작권의 제한, 그리고 디지털기술이 최근 저작권제도에 미친 영향 등을 주로 학습한다.

Copyright law now covers not only literary works such as novels but also computer programs and industrial design. This course will deal mainly with various kinds of copyright works, the limitations of copyright according to fair use doctrine, and the impact of digital technology on recent copyright system.

931.728 특허법 3-3-0

Patent Law

본 강좌는 발명의 진보성과 같은 개별 성립을 분석하는 방법으로, 전통적으로 저작재산권 범위에서 가장 중요한 2대 분야 중 하나인 특허법 전반을 개관하는 데 있다.

The purpose of this lecture is to give a conspectus of patent law which has been one of the two most important areas
in IP law, by analyzing each issue such as non-obviousness of a patent.

931.729 과학기술과 법 3-3-0

Science, Technology and Law

본 강좌는 지적재산권법 분야의 기본과목을 이미 이수한 학생을 위한 심화과목이다. 본 강좌는 과학기술의 발전을 촉진하고 과학기술의 오용을 규제할 가장 효율적인 법제도를 탐구한다. 정보 통신기술, 생명공학기술, 에너지와 환경, 의약기술 등과 같은 개별 과학기술의 성격에 따라 이를 과학기술과 법과의 관계를 공부하게 된다.

This course is an advanced course for students who already took a basic course in this field. The purpose of this course is to study the most effective legal systems to encourage the development of science and technology and prevent the misuse of them. The relationship between technology and law will be lectured in the light of the characteristics of each technology, eg. information and telecommunications, biotechnology, energy and environment, and medicine.

931.730 부정경쟁방지법 3-3-0

Unfair Competition Prevention Law

본 강좌의 목표는 타인의 상표, 상호, 도메인 네임을 부정사용하거나 영업비밀을 침해하는 일체행위와 같이 일련의 부정경쟁행위를 방지하는 데 있어 상표법과 부정경쟁방지법들의 복잡한 상호작용을 가르치는 데 있다.

The purpose of this lecture is to teach the reciprocal mechanism of Trademark Act and Unfair Competition Prevention Act in preventing unfair competitive acts, such as unjust use of another person’s trademark, trade name, domain name and any act infringing on another person’s trade secret.

931.731 혁신과 경쟁 3-3-0

Innovation & Competition

본 강좌는 지적재산권법 분야의 기본과목을 이미 이수한 학생을 위한 심화과목이다. 본 과목에서는 기술혁신 및 공정경쟁에 관한 규범의 현황을 검토한 다음 가장 바람직한 규율방향을 발견하기 위한 기본 틀을 제공할 것이다.

This course is an advanced course for students who already took a basic course in this field. It covers various regulatory situations about technology innovation and fair competition and will provide the basic tool to find the optimum regulation.

931.732 저작권실무 3-2-2

Copyright Law in Practice

본 실무과목에서는 한국 저작권법에서의 보다 특수한 쟁점과 구체적인 분쟁사례들에 주안점을 두게 된다. 여기서는 관련 사례를 분석하는 방법으로, 한국 저작권법에 중요한 판례의 최근 동향을 검토해보고, 실제의 사례와 아주 유사한 사건을 가지고 실제로 볼조심이 실무상 적절해야 할 문제를 작성해보도록 한다.

This seminar will focus on more specific issues in the Korean Copyright Act. It covers substantive legal issues and recent developments in Korean Copyright Act, by analyzing related cases.

931.733 특허실무 3-2-2

Case Study of Patent

IT 시대를 맞이하여 기술의 중요성이 강조되고 있는 현 시점에서는, 산업재산권의 기본에 해당하는 특허권을 들여:['ении에 관한 최근 국내외의 분쟁사례를 통해 학습하고, 발명의 보호와 이용의 불법화를 통한 기술의 발전 및 국가경제의 발전이라는 특허법의 목적을 이어야 할 방법론을 통해 이룩할 수 있을 것입니다. 전공자에 대하여 고민하고 토론하는 과목이다.

In this world where importance of technology is becomingever more emphasized, this course will cover the basic legal issues concerning patent disputes. Throughout the course the students will be asked to discuss the methodology of achieving development of technology and national economy. the object and purpose of patent law through legal means of protecting and promoting new inventions.

931.734 국제지적재산권 3-3-0

International Intellectual Property

오늘날 특허, 저작권, 상표 등 지식재산에 관한 거래 및 분쟁은 다국적으로 발생하고 있고, 이는 국제교역의 확대 및 인터넷의 확산으로 가속화되고 있다. 본 강의는 위와 같은 지식재산에 관한 국제적 분쟁에 대하여 어느 나라가 재판관할권을 가지는지, 어느 나라의 법이 재판규범이 될 것인지에 대해 다루고, 또한 이러한 과정에서 전문가가 어떠한 대응전략으로 협상 및 소송에 임해야 하는지를 대해 공부한다.

International business transactions and legal disputes on intellectual property proliferates, which has become faster since the worldwide use of the internet. The basic objective of this course is to examine mainly the issues of jurisdiction and the applicable laws in the transnational disputes on intellectual property. The students in this class will further research and discuss the strategic approaches in negotiation and litigation.

931.735 라이센싱 3-3-0

Licensing International Intellectual

지적재산의 합법적인 활용을 위한 Licensing 계약에 관한 기본적인 법률관계의 내용 및 지적재산 보유자 및 활용자 등의 각 당사자들이 취해야할 전략적 태도에 관한 학습하는 과목이다.

This course introduces the students to the basic structure and implications of legal relationships surrounding Licensing contracts, which promotes the lawful utilization of intellectual property. Also considered will be the strategic alternatives available for the parties in question, i.e., the holders and users of intellectual property.

931.736 상사법실무연습 3-3-0

Practice and Advanced Commercial Law

상사법실무연습은 상사법사례, 회사법, 보험법 기타 상법 관련 과목에서 습득한 지식을 바탕으로 하여, 상사법 영역에서의 실제 사안 또는 실제 사안과 유사하게 준비된 각 사안을 해결한 후에 위와 같은 법적 분석과 도출, 상업 법적 사안과의 흐름분석을 하여 학습하는 과목이다.

Through this course, students will be given opportunities
to apply what they learned through courses such as Commercial Transactions, Corporate Law, Insurance Law, and other courses in commercial law. Students will be required to deal with hypothetical cases and will also be given opportunities to prepare various legal documents. Class discussions will take place and hands-on feedback on students’ work will be given on a regular basis.

931.737 Investment Banking : Law and Business

This course will introduce students to the basics of the law and business of global investment banking, and to the role of legal and investment professionals in the financial services industry. The course will begin with an introduction to history of commercial and investment banking with special reference to the global financial crisis and restructuring and regulatory reform in the financial services industry of the world. Then, the class will study core business activities of investment banking houses: IPO and privatization, M&A, takeovers and takeover defensive tactics, private equity and hedge funds. Students will examine law review articles and other academic materials, as well as documents drawn from the actual practice of investment banking. After that, the instructor will draw introductory studies on global capital markets, capital market regulation and conflicts of interest. Studies on recent developments in the capital markets and financial services industries in China, Japan and Korea will be followed by case studies on the history and business activities of major financial institutions of the world, including Goldman Sachs, JPMorgan Chase, Blackstone Group, UBS, and Deutsche Bank.

931.738 Insurance Regulation and Law

This course will examine specific crimes provided by the Criminal Act and other major statutes, building upon the general knowledge acquired through Criminal Law 1. Topics include crimes against individuals such as murder and physical assault, crimes against nations such as high treason, and crimes against society such as arson and forgery, etc. This course analyzes relevant decisions of the courts and provides guidance to understand principles underlying those decisions.
Procedure, including Investigation Procedure, Trial Procedure, Decision, Appeal, and Special Procedure.

931.754 사법개혁론 3-3-0
Judicial Reform

September 13th, in the program, we will consider our roles as legal/social reformers.

Actual cases in Korea. Items include human rights cases for criminal defendants, group litigation for environmental issue or consumers, public constitutional litigation, and litigation against the abuse of corporations. Actual documents will be provided, and contacts with public interest lawyers will be arranged.

The course aims to increase students’ analytical abilities through studying the transition and substantial meaning of criminal law theories and criticizing judicial decisions upon this knowledge. The course will first suggest thought-provoking topics to students, then allow the students to address the issues individually or in teams. Students will discuss the topics presented.

931.755 사법행정론 3-3-0
Rules and Skills on Fact Finding

Students will develop fact finding skills by training with actual cases. Fact finding is crucial in most criminal cases. A bad fact finder could never become a good lawyer, no matter how much legal knowledge he/she has. Furthermore, fact finding is required for a more advanced policy which is both reasonable and humanitarian. This course provides academic basis for students whose future is open to criminal justice subjects.

Topics in Criminal Law Theories

The goal of this course is to examine various aspects of Criminal Law theories and criticising judicial decisions upon this knowledge. The course will first suggest thought-provoking topics to students, then allow the students to address the issues individually or in teams. Students will discuss the topics presented.

931.756 한국의 공익인권소송 3-3-0
Public Interest Lawyering in Korea

The main purpose of this course is to examine various aspects of Criminal Procedure. The course aims to increase students’ analytical abilities through studying the transition and substantial meaning of criminal law theories and criticizing judicial decisions upon this knowledge. This course also deals with comparative studies on judicial reform. The role of lawyers as social reformers is addressed.

931.757 형법론론강 3-3-0
Criminology and Criminal Justice

This course aims to analyze crime problems and to contribute to the prevention of crime. Crimeology seeks interdisciplinary studies which include biology, psychology, sociology, and policy studies. Critical analysis on criminal justice is needed for a more advanced policy which is both reasonable and humanitarian. This course provides academic basis for students whose future is open to criminal justice subjects.

931.758 형사정책 3-3-0
Criminal Evidence

forms of the course. This course aims to increase students’ analytical abilities through studying the transition and substantial meaning of criminal law theories and criticizing judicial decisions upon this knowledge. The course will first suggest thought-provoking topics to students, then allow the students to address the issues individually or in teams. Students will discuss the topics presented.

931.760A 검찰실무 1 3-3-0
Practice of Prosecutors 1

Topics in Criminal Law Theories

The main purpose of this course is to examine various aspects of Criminal Law theories and criticising judicial decisions upon this knowledge. The course will first suggest thought-provoking topics to students, then allow the students to address the issues individually or in teams. Students will discuss the topics presented.

The main purpose of this course is to examine various aspects of Criminal Law theories and criticising judicial decisions upon this knowledge. The course will first suggest thought-provoking topics to students, then allow the students to address the issues individually or in teams. Students will discuss the topics presented.
시작하여 형사실체법과 형사절차법의 최근 개정에 이르기까지의 형사사법제도는 다른 법영역과 달리 역사성이 강한 분야이다. 따라서 그 배경이 되어 있는 역사적 생성경정을 파악하는 것이 필수적이다. 그런데 그동안 학문에서는 형평적인 비교법학에 침해하고 있었고, 본 세미나에서는 한국 형사사법제도의 생성으로부터 시각하여 형사사법과 형사절차의 최근 개정에 이르기까지의 과정을 연속적 고찰이라는 일관된 방법론을 가지고 검토한다.

기억 사법제도는 다른 법영역과 달리 역사성이 강한 분야이다. 따라서 그 배경이 되어 있는 역사적 생성경정을 파악하는 것이 필수적이다. 그런데 그동안 학문에서는 형평적인 비교법학에 침해하고 있었고, 본 세미나에서는 한국 형사사법제도의 생성으로부터 시각하여 형사사법과 형사절차의 최근 개정에 이르기까지의 과정을 연속적 고찰이라는 일관된 방법론을 가지고 검토한다.

This course consists of 3 parts. Part 1 considers general principles of German criminal law, part 2 considers various forms of crimes in German criminal law and part 3 considers German criminal procedure. In considering German criminal law and procedure we will compare them with Korean criminal law and procedure, which will shed some light on deeper understanding and refining of Korean criminal justice system.
This course explores the actual job of prosecutors. The goal of this course is to learn how to manage investigation, prosecution, litigation and execution, including legal writing and respective paperwork.

### 931.771 Practice and Advanced Criminal Law and Procedure

This course provides opportunities to prepare various legal documents. Class discussions will be given on a regular basis.

### 931.801 International Law I

This course deals with the basic theory of international law and domestic law, recognition, state succession, jurisdiction, treaty law, state responsibility, international human rights law, etc.

### 931.802 International Law II

This course deals with the choice of law principles by which the law applicable to a legal relationship with a foreign element is determined, among the conflict of laws principles in its broad sense. Given the ongoing internationalization of Korean society, a good command of choice of laws principles is indispensable to lawyers who intend to deal with international transactions or international disputes in the 21st century.

### 931.803 Transnational Commercial Law

This course deals with various issues relating to transnational or international commercial transactions from private law aspects. Specifically, it covers substantive laws such as contract laws governing international sales, international contract law, letter of credits and other international settlement, international carriage, international insurance, as well as procedural laws such as litigations and commercial arbitration for international dispute settlement.

### 931.804 International Economic and Trade Law

This course covers international trade and economic norms, such as WTO/FTA Agreements, which legally regulate international economic orders. A substantial part of this course will be devoted to case discussions of actual and hypothetical international trade disputes. An interface between trade and investment/monetary system/environment/competition will be briefly covered as well.

### 931.805 Conflict of Laws

This course is designed to cover international trade and economic norms, such as WTO/FTA Agreements, which legally regulate international economic orders. A substantial part of this course will be devoted to case discussions of actual and hypothetical international trade disputes. An interface between trade and investment/monetary system/environment/competition will be briefly covered as well.
931.807 국제분쟁해결 3-3-0

International Dispute Settlement

본 과목에서는 국제사회에서의 분쟁처리제도 중 국제재판과 같은 사법적 분쟁처리방법 이외의 분쟁처리제도에 대하여 연구한다. 그 내용은 세부적으로 국제협상론, 국제제재조정론, 국제제도론 등으로 구분할 수 있다.

This course will examine the role and procedure of international disputes settlement systems other than jurisdictional judgments of international courts. Main subjects are: international negotiations, international arbitration, mediation, conciliation, inquiry, and international sanctions. The lecturer will select the main topics of each semester.

931.808 국제인권법 3-3-0

International Human Rights Law

인권의 국제법적 보호에 관한 기본적인 체도와 실행을 학습함을 강의의 목표로 한다. 현장 주요 인권조약의 내용을 학습하고, 국제사회에서 국제인권법이 어떻게 실현되는가를 강의한다.

The course is designed to provide students with the law and practice of international human rights. Topics will include the historic origins and development of modern human rights law; contents of major international human rights treaties; implementation and enforcement system of international human rights law.

931.809 국제투자법 3-3-0

Legal Framework of Cross-border Investment

기업의 국제투자(내국기업의 해외투자 및 외국인의 국내투자)에 관한 법률적 문제에 대한 연구.

Study of legal framework and legal issues relating to cross-border investment (covering foreign direct investment by foreign investors and overseas direct investment by domestic companies).

931.810 무역구제법 3-3-0

Trade Remedy Law

국제통상체제에서 최대 현안이 되고 있는 반덤핑, 수입관세, 세입관세 등 무역구제제도에 관한 주요국 법제와 운영 사례를 학습하고 WTO 분쟁사례분석을 통해 WTO협정 적용에 관한 법리를 탐구한다.

This course aims to deepen the knowledge on trade remedy systems such as antidumping, countervailing and safeguard mechanism through the study of major countries’ laws and practices as well as WTO dispute rulings concerning trade remedy cases.

931.811 국제공간법 3-3-0

International Space Law

일국의 영토, 인접 해양과 그 상공에 대한 관할권 행사가 국가의 기본적 권능의 발로이다. 이 공간들은 국력 선량의 중요한 요소로서 국가간에 치열한 경쟁의 대상이 되기도 한다. 육상에서는 국방공정을 확장하기도 하고, 다리는 공동영역을 설치하기도 하지만, 바다는 육지에 비하여 그 민속이 상대적 관할이 이어져서 해상교통과 자원개발 및 환경보호 등을 위해서 공동의 노력이 필요하다. 근래에 와서는 육지와 바다 및 그 상공은 그 경계가 예매할 뿐 아니라 그 양태가 서로 연결된 3차원적인 공간이므로, 그에 대한 법적 구도도 불분명한 성격이 있다는 것을 전제로 하는 것이 필요할 것이다. 이러한 3차원적 공간에 대한 종합적인 학습은 학생들의 시야를 넓혀주고 가시적 공간을 위한 법적 사고력을 얻는데 기여할 것이다.

A state’s exercise of jurisdiction over its territorial land, waters, and air is a basic sign of sovereignty. These elements constitute an integral part of sovereign power and become subject to international competition. Unlike the land, the vast sea requires multilateral cooperation of resource development and environment preservation. Recently as the three elements are considered as one in legal regulation, this course aims to introduce some insight as to perceiving the international regulation on legal terms.

931.812 국제물품매매계약법 3-3-0

Law of International Sales Contract


This course deals with the basic legal issues on international sale of goods. The United Nations Convention on Contracts for the International Sale of Goods (CISG) and other related international norms on international contract such as UNIDROIT Principles of International Commercial Contracts are the primary topics of this course. Other topics such as INCOTERMS and documentary letters of credit, which serve as the means of international settlement, will also be dealt with in this course.

931.813 국제민사소송법 3-3-0

International Civil Procedure

이 과목은 외국적인 요소가 있는 소송에서 제기되는 다양한 소송방식의 논점을 다룬다. 구체적으로 재판권, 국제재판권관, 해외동반과 해외증거조사를 포함하는 국제민사사건소송, 국제소송관과 외국관련의 충돌 및 겹침 등의 주제를 포함한다.

This course deals with various procedural issues arising from international civil litigations. Specifically, major topics covered in this course include various issues such as sovereign immunity, international jurisdiction to adjudicate, service abroad of process, taking evidence abroad and other issues related to international judicial cooperation and recognition and enforcement of foreign judgments.

931.814 국제투자분쟁해결 3-3-0

Settlement of International Investment Disputes

국제적인 투자와 관련된 투자자가 투자유치국 정부, 투자자가 원지 할양파트너 또는 투자자해외관계사간의 분쟁의 해결에 관련된 법률적 문제점 및 절차에 관한 연구.

Study of legal issues and procedures relating to the settlement of disputes between foreign investors and host states and between foreign investors and the domestic joint venture partners or other interested parties, arising from cross-border investments.
이 과목에서는, 동아시아 지역에 여전히 미해결된 체 남아있는 영토분쟁, 해저자원 분배, 2차 세계대전 이후의 식민사와 같이, 두드러지는 국제법상의 이슈나 분쟁에 대해 단답으로 인도자 시도한 것이 다. 또한 가능하다면 여러 방면에서 지역 내부의 협력을 공고할 수 있는 이상적인 작업의 틀을 정의하고 보러한다.

Prior to the introduction of international law into East Asia, the region had its own international normative order. This order enjoyed an extraordinarily high degree of continuity through no less than a couple of millennia. The replacement of this order by a new international order that had a European origin was an event of world historical significance. Since the middle of the 19th century, international legal relations among East Asian nations have been largely regulated by this normative system that had originated in Europe.

The emergence of East Asia (in particular, China) as a major player on the international scene in the post-1945 period, however, is increasingly eroding the once unassailable superiority of Europe in the discourse of international law. China and other East Asian nations want the predominantly Euro-centric international law of today to be reformulated in the direction of reflecting their own normative expectations and lived experiences to a greater extent. The recent debate about the East Asian challenge for human rights is an apt example. As a normative system that is cognitively open to “non-legal” factors such as power and politics, international law is bound to be substantially impacted upon by these claims and arguments put forward by East Asian nations.

However, one should not forget that these East Asian nations do not form one single monolithic entity. There are many international legal issues and disputes still outstanding among these states, as will be shown by the wide-ranging subject-matters to be dealt with in the class. In fact, this region is conspicuous by the glaring absence of effective regional arrangements or regimes for international legal issues, such as the protection of human rights, the maintenance of international peace and security, environmental protection and so on. This fact constitutes a striking contrast with the ever-deepening regional integration of Europe, the formation of economic blocs in the form of NAFTA, MERCOSUR, etc.

Now the question is why the East Asian region, which has enjoyed substantial cultural homogeneity throughout a long period of time, has failed to up to now to find a common voice around which the nations in the region can come together in the international arena such as the United Nations.

In this course, an attempt is made to answer this question by delving into some of the salient international legal issues or disputes, such as territorial disputes, allocation of marine resources, post-World War II settlement, that still need to be resolved in the East Asian region. In so doing, we will also try to formulate, if tentatively, the ideal normative framework that can facilitate the intra-regional cooperation in various fields. Given the close interdependence of today’s world, one should not also lose sight of the importance of (re)formulating this normative framework in a way that enhances active interaction and communication with the other regions of the world.
executive functions shall be analysed. The class will deal with the economic foundations of the European Union. The heart of the Internal Market of the EU are the fundamental freedoms, the free movement of goods, the free movement of workers, the freedom to provide services, the freedom of establishment and the free movement of capital. The class will conclude with a presentation of the most important procedures of judicial protection before the European Court of Justice, the preliminary procedure in particular.

### 931.820 EU Foreign Relations Law

EU Foreign Relations Law

LisaGhoresiani is an EU's law and practice of law, and it deals with the legal issues of the EU. In this course, the focus will be on the legal aspects of the EU and the international agreements, and the role of the EU in international law. The European Court of Justice has developed a differentiated jurisprudence on the direct applicability of international agreements. The class will deal with the effects of international agreements within the EU internal legal order. The European Court of Justice has developed a differentiated jurisprudence on the direct applicability of international agreements. On this matter depends whether corporations can rely directly on international agreements before the EU or Member State courts.

### 931.851 Market Economy and Legal Regulation

Market Economy and Legal Regulation

우리는 시장경제를 경제질서의 기본으로 삼고 있다. 그런데 시장경제에서 정부는 외환으로는 시장경제의 정상적인 기능을 담보하기 위해서, 다른 한편으로는 시장질서를 장려하기 위해서 경제활동에 관한 규제를 하고 있다. 따라서 이 과목은 이러한 법적 규제의 내용을 정확히 이해하고, 다음과 그 문제점과 개선방안을 모색해 보는 것을 내용으로 한다.

Korean economy is based on the principle of market economy. In the market economy, government regulates economic activities, on the one hand to guarantee the function of market economy, on the other hand to correct the market failure. In this course, we will try to understand the contents of economic regulations and to analyse the problems and find the resolution.

### 931.853 Korean Competition Law

Korean Competition Law

This course aims to provide a comprehensive understanding of antitrust laws and main prohibitions like abuse of free and fair competition among market participants. The basic principles of antitrust laws and major prohibitions include anti-competitive M&A and unfair trade practices under the Korean competition law will be examined and improvements for Korean antitrust laws will be considered.

### 931.854 Law of Consumer Protection

Law of Consumer Protection

In this course, it will be discussed consumers’ major rights and the legal protection methods necessary for consumers in a market economy. Under the concept of consumer sovereignty, the legal systems that guarantee the existence of consumers’ right to choose and the availability of their reasonable choices will be dealt.

### 931.855 Seminar in Competition Law

Seminar in Competition Law

This course aims to enhance the ability to solve problems in practice through systematical research and analysis of the leading cases of the KFTC and courts in Korean competition law. It contains also the cases of foreign competition authorities like U.S. Germany and Europe.
Economic Law on Practice

This class provides students who have built a foundation in economic law with the opportunity to engage in practice level economic law application and analysis.

Law of Agriculture

This course, students will review laws regarding agriculture, which aim at supporting and protecting the agricultural industry which cannot be simply subject to competition rules. Emphasis will be placed on the farmers’ cooperative, an organ for cooperation among farmers, and other organizations for improving the distribution of agricultural products.

Comparative Economic Law

The purpose of this course is to advance students’ understanding of the legal principles of economic law by researching economic laws and industrial environments of foreign countries comparatively. Students will focus on the principles of the economic laws of the EU, US, and other nations and, consider their applicability in various Asian countries.

Law of Small and Medium-sized Enterprises

This course covers protective regulation as well as competition law regulation, all of which aims to facilitate effective competition and innovation through flourishing small and medium-sized enterprises. Especially, whether subsidies would threaten innovative potential of SMEs is reviewed and finally market-friendly regulatory regime for SMEs is explored through analyses on some issues of subcontractors law and franchise law.

Economics of Antitrust

This course seeks to enhance the students’ ability to analyse the competition law issues in the perspective of economics. In the way of studying the economic reasoning based under the competition law theory and legal cases, the students will have more developed knowledge on the role and availability of economic analysis of law.

Seminar in Consumer Protection

In this course, it is pursued to analyse various issues of consumer protection on a case by case basis which are raised in the field of antitrust, regulated industries and thereby to systematically understand the implementation process of basic rights of consumer. Finally, it will be requested for participants to make a group report concerning analysis and proposals to cases of consumer damages in individual sectors and to proceed a discussion.

Individual Labor Relations Law

The basic goal of the course is to give students an accurate
법학전문대학원(Graduate School of Law)

기타

상해에 대한 특수적 이해

Collective Labor Relations Law

본 과목은 현행 노동조합및노동관계조정법의 주요내용과 법리를 종합적이고 체계적으로 이해할 수 있는 능력을 함양할 것을 목적으로 삼는다. 따라서 수업진행은 강의방식을 중심으로 진행된다. 아울러 집단적 노사관계법은 개별적 근로관계법에 비해 역사성과 사회성이 많이 반영되기 때문에 한국적 특수성과 국제적 보편성을 정확히 이해할 것이 요구되는 바, 주요 정점에 관해서는 우리나라는 법개정⋅판례의 변화뿐만 아니라 국제노동규범의 주요 내용을 소개하고자 한다.

Comprehensive introduction to industrial relations and collective bargaining in Korea; the negotiation, agreements; the major substantive issues in bargaining; industrial conflict; the major challenges facing unions and employers today.

Equal Employment Law

고용차별은 인간의 권리를 침해 및 제한한다는 점에서 규범적으로 정당화될 수 없으며 동시에 사회적 통합과 인적자원의 활용을 저해하고, 사회적 비용을 증가시킨다. 고용차별에 관한 현행법이 고용차별을 어떻게 규제하고 있으며 고용차별에 대한 구제수단은 어떠한지, 그 개선 방안으로는 무엇이 있는지 살펴보는 것을 목표로 한다.

Employment discrimination cannot be legally justified as it violates people's rights and undesirable in social and economic point of view as it raises social costs. How the law regulates employment discrimination is the subject to study in this class. Furthermore, by examining the remedies and procedures of the employment discrimination laws discuss ways to improve the discriminatory situation.

Labor Relations in Public Sector

공공부문 노사관계의 현황을 이해하고 공공부문 사업장의 새로 운 통합적 노사관계 구축을 위한 정책 및 시스템을 살펴본다. 공공부문이 아닌 공공부문 근로자의 노사관계에 대하여는 취업규칙 불이익 변경⋅인사이동⋅고용조정문제 등 장점을 중심으로 분석해본다.

Examine labor relations in public sector in Korea; public employees’ collective bargaining and other workplace rights; public policy and system of labor relations in general. Labor relations matters of the non-public official employees in public sector (such as changes of the work-rules, personnel shake-up) are also the subject to study in the class.

Public Assistance Law

공공부조법이란 국가 및 지방자치단체의 책임 하에 생활유지능력이 없거나 생활이 어려운 국민의 최저생활을 보장하고 자립을 지원하는 제도를 규율하는 법의 총체를 말한다. 본 강좌에서는 공공부조에 관한 기본적인 법이론을 학습하고, 공공부조 관련 규정의 적용실탐을 살펴본다.

In this course, the basic theories of the public assistance law and actual regulations on social insurance will be investigated. Public Assistance means a system which, for citizens who are unable to maintain a living or has difficulties in living, guarantees a minimum standard of living, and gains independence from it, under the responsibility of the State and local governments.

Social Insurance Law

본 강좌에서는 사회보험법의 기존적인 이론들과 더불어 현재 기능하고 있는 사회보험 관련법제들의 이념과 그 구체적인 적용실탐을 다룬다. 주된 개념들로는 사회보험법 일반이론, 국민연금법, 국민건강보험법, 고용보험법, 산업재해보상보험법 등이 포함된다.

In this course, the basic theories of the social insurance law and actual regulations on social insurance will be investigated. Topics will cover the general theory of the social insurance law, National Pension Act, National Health Insurance Act, Employment Insurance Act, Industrial Accident Compensation Insurance Act.

Social Security Law

노동보험은 사회변화에 조응하여 구체적으로 형성되어 가는 법이다. 따라서 새로운 현실을 규범화하고, 규범화된 현실의 축적을 통해 규범을 현실화시키는 실천적 과제에 지속적인 관심을 가져야 한다. 본 과목은 이러한 통합적 과정을 법학적 언어로 이해하고 분석하는 것을 주요 목적으로 한다. 이러한 목적에 부합하기 위해 본 과목은 현실적으로 제시되는 구체적 정책들을 대상으로 삼고 학생들의 자발적 참여를 독려하고자 세미나 방식으로 진행된다.

Discusses various theories of labor relations law by examining cases from the Court and the National Labor Relations Committee in Korea. The goal of the class is to understand and analyze transition of labor matters in legal language. Basis principles concerning both collective and individual labour relations in the whole sectors are dealt. Students are required to participate in the seminar-style class voluntarily.

Seminar in Social Security Law

노동관계 전반에 걸친 주요 노동소송실무 사안을 살펴보고 구체적인 권리구제수단을 살펴보며 구체적인 권리구제수단을 검토한다.

Process, practice, and procedures of labor related actions are the main themes to be dealt in this class. The focus of the class is to understand the remedy systems and processes in labor matters.

Social Security Law
The purpose of this course is to enhance students’ ability to understand current issues in Korean social security law. An examination of the latest social security law cases and volunteer programs at social associations will also be included to help students to have an experience through which they can understand substantial and procedural policy making and administrative phenomena.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>931.872</td>
<td>환경법 3-3-0</td>
<td></td>
<td>Environmental Law</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>The course examines various legal issues related to environmental protection, the effectiveness of legal systems for environmental protection, and ways to solve legal problems arising from environmental policies. It discusses theoretical and practical perspectives on how current law copes with environmental problems. The course focuses on the latest social security law cases and volunteer programs at social associations to help students gain an experience through which they can understand substantial and procedural policy making and administrative phenomena.</td>
</tr>
<tr>
<td>931.873</td>
<td>자원환경법 3-3-0</td>
<td></td>
<td>Natural Resources and Energy Law</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>This course aims to promote the comprehensive understanding of the economic, legal, and policy issues related to natural resources, environment, and energy management. It looks at theories of ecological economics about natural resources and energy. In addition, various regulatory mechanisms and market mechanisms for each sector are discussed. The course also covers the examination of various cases concerning environmental law to enhance students’ ability to interpret and apply the principles of environmental law and to increase their ability to analyze various issues concerning environmental problems.</td>
</tr>
<tr>
<td>931.874</td>
<td>기후변화법 3-3-0</td>
<td></td>
<td>Climate Change Law</td>
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<td></td>
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<td></td>
<td>This course will examine the various legal issues related to the international and domestic measures to cope with the climate change. The research field will include not only the environmental law issues but also the constitutional law, administrative regulatory law, the financial law, and the international law issues.</td>
</tr>
<tr>
<td>931.875</td>
<td>국제환경법 3-3-0</td>
<td></td>
<td>International Environmental Law</td>
</tr>
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<td>This course will examine the various legal issues related to international agreements. The course takes interdisciplinary approaches, considering distinctive features of environmental problems, the development of principles and the formation of the international environmental regimes, the roles of governmental and non-governmental organizations, the inter-linkages that exist between the environment and trade, investment, and human rights. A number of simulation negotiations will be used to encourage students’ participation. If necessary, guest lectures by practitioners may be arranged.</td>
</tr>
<tr>
<td>931.876A</td>
<td>환경법구제법 3-0-0</td>
<td></td>
<td>Environmental Remedies</td>
</tr>
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<td>This course aims to promote the comprehensive understanding of the economic, legal, and policy issues related to natural resources, environment, and energy management. It looks at theories of ecological economics about natural resources and energy. In addition, various regulatory mechanisms and market mechanisms for each sector are discussed. The course also covers the examination of various cases concerning environmental law to enhance students’ ability to interpret and apply the principles of environmental law and to increase their ability to analyze various issues concerning environmental problems.</td>
</tr>
<tr>
<td>931.877</td>
<td>임상법학 1 2-1-4</td>
<td></td>
<td>Legal Clinic 1</td>
</tr>
</tbody>
</table>
|             |                              |         | ‘임상법학’은 학생이 학내에 개설된 리검 클리닉이나 법률상담센터 또는 학회의 변호사학술 등에서 실제 사건의 의뢰를 받아, 사건에 관한법률적 테크닉, 법률정보의 조사, 문제해결 방안에 대한 의견서 등 복리성사 작성 및 과정을 담당 교원이나 변호사의 지도 하에 실제 대응으로 수행함으로써 경험을 통한 분쟁을
효율적으로 해결할 수 있는 지식 및 능력을 키우는 것을 목표로 한다.

‘임상법학 1’은 민사사건을 다루는 임상법학과목에 해당한다.

‘임상법학 1’에서는 민사·상사 사건에 대한 법률정보의 조사와 더불어 소장, 준비서면, 의견서 등의 작성이 다루어진다.

Legal Clinic1, offered in conjunction with a legal clinic or school’s other legal counseling center, will be useful in learning various practical aspects of lawyering, including interviewing clients, identifying and summarizing legal issues and evidentiary matters, conducting research, writing papers and legal memoranda. These tasks will be undertaken under close supervision of instructors or practicing lawyers. Students will gain capability to handle cases independently and effectively.

Legal Clinic 1 will provide clinical case study of civil law. Through this course, case study of civil and merchant law will be handled, and appropriate research, practices, papers and etc. will be provided for students.

931.878 임상법학 2 2-1-4

Legal Clinic2

‘임상법학’은 학생이 학내에 개설된 임상법학과목, 임상실습과목 또는 학교의 변호사사무실 등에서 실제 사례에 의여된 법률, 사실관계 및 증거자료의 정리, 법률정보의 조사, 문제해결 방면에 대한 의견서 등의 작성과 법사진, 법조문, 법률적 지식에 대해 학습하는 것을 목표로 한다.

‘임상법학 2’는 형사 및 행정사건을 다루는 임상법학과목에 해당한다. ‘임상법학 2’에서는 형사·행정사건에 대한 법률정보의 조사와 더불어 변론서면서, 행정소송 소장, 준비서면, 의견서 등의 작성이 다루어진다.

Legal Clinic 2, offered in conjunction with a legal clinic or school’s other legal counseling center, will be useful in learning various practical aspects of lawyering, including interviewing clients, identifying and summarizing legal issues and evidentiary matters, conducting research, writing papers and legal memoranda. These tasks will be undertaken under close supervision of instructors or practicing lawyers. Students will gain capability to handle cases independently and effectively.

Legal Clinic 2 will provide clinical case study of criminal and administrative law. Through this course, study of criminal and administrative law will be handled, and appropriate research, practices, papers and etc. will be provided for students.

931.879 특별임상법학 2-1-4

Special Legal Clinic

‘특별임상법학’은 금융, 국제통상, 투자, 공익권, 노동, 환경 등 전문분야에 관련하여 학내에 개설된 특화된 학술강좌나 법률상담센터 등에서 학위의 관련 기관이나 법률사무소에서 경험수행, 입법활동, 관련 소송사건의 수행, 법률상담 등을 담당 교원이나 변호사가 전문가로 지도 하여 실제로 주도적으로 수행하는 것을 목적으로 한다.

‘특수임상법학’은 특화된 전문분야에 관련하여 단지 소송수행뿐만 아니라 정책수립이나 법률활법 등 다양한 법률위한 법률활동 수행활동을 경험하고 이를 통해 그 분야의 전문지식을 빌딩하는 점에서 일반적인 민사대사건의 소송수행에 관한 ‘임상법학 1’이나 ‘임상법학 2’와는 구별된다.

‘Special Legal Clinic’ offered in conjunction with a legal clinic, school’s other legal counseling center and some related off campus institutions, will be focused on legal practice under the lead of the legal professions and lawyers so that students can learn various practical aspects of lawyering including lawmaking, policy making and preparing legal litigation.

‘Special Legal Clinic’ is for specialized area litigation, policy making, lawmaking and other wide-range of legal activities. These will provide more specific knowledge and experiences of the legal issues compared to the general studies of criminal and litigation that are offered by ‘Legal Clinic 1’ and ‘Legal Clinic 2’.

931.901 미국 증권거래법 2-2-0

U.S. Securities Regulation

이 과목은 미국의 증권규제의 전반적인 내용을 담아 강의한다. 미국의 증권규제는 정책수립자와 불법행위자의 규제를 위해 하여 복잡한 규제를 두고 있는데, 현대의 자본시장을 이해하기 위해서는 필수적으로 숙지해야 한다. 이 과목에서는 미국 증권거래법에 관한 수준을 다루며, 자세한 규정보다는 기본적인 사고의 틀을 제공하는 것을 목적으로 한다.

This course is conducted in English, and covers what is taught under the same course name in the U.S. law schools. The securities regulation, which consists of a set of complicated rules based upon the notion of mandatory disclosure and anti-fraud, is essential part of modern capital market, and in this context, this course offers why such rules are important and how they actually function in the U.S. market. This course concentrates more on analyzing fundamental rules in various ways, rather than just introducing and explaining the contents of complicated rule.

931.902 미국행정법 2-2-0

U.S. Administrative Law

이 과목에서는 비교적 관점에서 미국 행정법을 소개한다. 행정법은 정부기관 및 정부기관과 대통령, 입법부, 법원, 대중의 관계를 다루는데, 이 과목에서는 특히 법과 정치의 관계에 주안점을 두 것이다. 이 과목의 많은 부분은 행정법의 원칙을 살펴볼 수 있는 사례들에 대해 읽고 토론하는 것으로 이루어진 것이다. 사례들은 읽기에 쉽지 않겠으나, 수업참석자들이 실제 법률업무에서 다루게 될 복잡한 규제에 관한 이해를 이해하는데 도움을 줄 것이다.

This course is an introduction to American administrative law, utilizing a comparative perspective. Administrative law concerns government agencies and their relations with the President, the legislature, courts and the public, and the particular emphasis of this course will concern the relationship between law and politics. Much of the course will consist of reading and discussing cases that illustrate the principles of administrative law. While the cases will be challenging to read, the material will prepare you for understanding complex regulatory issues that you may have to deal with in legal practice.

931.903 영미법개론 2-2-0

Introduction to American law

This course focuses on legal method the “thought process
of American law. "Students will learn what, in the words of Charles F. Abernathy, is "unique about American law" as process: a blend of (1) common law, (2) statutory law, and (3) constitutional law. In the first week, we will study the traditional common law system in the United States and examine the development of product liability law in New York. In the second week, we will study constitutional common law judicial elaboration of individual rights under the Bill of Rights.

931.904 WTO와 국제거래 2-2-0

WTO and International Trade Law

This course is designed to cover WTO, which is the main source of international economic norms, and its related international and domestic trade laws. Two thirds of the classes are devoted to discuss the basic structure of WTO, several national and domestic trade laws. In addition, major administrative and statutory laws. In the course, we will study the role played by antitrust, intellectual property and constitutional law.

931.905 비교헌법론 2-2-0

Comparative Constitution

This course seeks to cultivate among students the comprehensive understanding of the law of contract and to develop problem-solving ability. Uniform Commercial Code and general theory of contract law will be covered as well.

931.906 미국계약법 2-2-0

U.S. Contract Law

Among the topics to be covered are: formation of a contract, main types of contracts, performance and breach of contracts, defects in contracts and termination of contracts. This course seeks to cultivate among students the comprehensive understanding of the law of contract and to develop problem-solving ability. Uniform Commercial Code and general theory of contract law will be covered as well.

931.907 인터넷 법 정책 2-2-0

Internet Law and Policy

This course surveys the basic principles underlying internet laws. In particular, it will examine the legal and regulatory treatment of a number of related technologies—from telephony to cable to the Internet—whose convergence will continue to challenge established principles. The course will focus major administrative and statutory laws. In addition, the course will address the role played by antitrust, intellectual property and constitutional law.

931.908 EU회사·증권법 2-2-0

EU Company and Securities Law

This course will cover a series of topics arising in the context of EU Corporate and Securities Law, including methods of interpretation of constitutional law, forms of constitutional judicial review and rights protection. The approach will be interdisciplinary, blending social science and legal perspectives.
that either directly apply to market participants or determine the contents of the applicable national laws.

931.909  미국형사법 2-2-0

American Criminal Law and Procedure

This course will address criminal law and criminal procedure in the United States legal system. It will focus on the types of crimes prosecuted in the United States (including crimes that carry the death penalty) as well as the complex procedural rules governing law enforcement officers and court proceedings. The course will pay particular attention to the rules of criminal procedure required by various provisions of the United States Constitution (such as the 4th, 5th, and 6th Amendments). The course will be taught by an American lawyer with two decades of experience as a criminal law practitioner, a law professor, and deputy director of the United States Sentencing Commission.

931.910  미국저작권법 2-2-0

American Copyright Law

This course provides an introduction to the civil procedure issues that arise in American courts when international matters are involved. It examines how international parties, events, and laws alter (or not) the manner in which courts handle civil procedure issues. This course covers topics such as personal jurisdiction, subject matter jurisdiction, venue, forum nonconveniens, and choice of law. Other topics unique to international litigation, such as the Act of State doctrine, the Foreign Sovereign Immunities Act, and the Alien Tort Claims Act, will also be addressed.

M2090.000100 국제민사소송법 1-1-0

International Civil Litigation

This course will address criminal law and criminal procedure in the United States legal system. It will focus on the types of crimes prosecuted in the United States (including crimes that carry the death penalty) as well as the complex procedural rules governing law enforcement officers and court proceedings. The course will pay particular attention to the rules of criminal procedure required by various provisions of the United States Constitution (such as the 4th, 5th, and 6th Amendments). The course will be taught by an American lawyer with two decades of experience as a criminal law practitioner, a law professor, and deputy director of the United States Sentencing Commission.

M2090.000300 종합실무연습 2-2-2

Comparative Law

The purpose of this course is to enhance students’ understanding of various legal issues associated with transportation by sea. Issues include transportation contract, relationship between transporter and passenger, laws regarding the collision of vessels, and limitations on the liability of vessel owners. This course covers topics such as personal jurisdiction, subject matter jurisdiction, venue, forum nonconveniens, and choice of law. Other topics unique to international litigation, such as the Act of State doctrine, the Foreign Sovereign Immunities Act, and the Alien Tort Claims Act, will also be addressed.

M2090.000400 해상법 3-3-0

Maritime Law

This course is designed to improve problem-solving skills of the 3rd year law school students. By way of various teaching methods such as seminars on specific issues, review of problems, and preparation of litigation documents, the students will be able to improve their ability to locate and analyze issues, in particular in cases where issues of various areas of law are commingled.

M2090.000500 비교법 2-2-0

Comparative Law

This course is designed to improve problem-solving skills of the 3rd year law school students. By way of various teaching methods such as seminars on specific issues, review of problems, and preparation of litigation documents, the students will be able to improve their ability to locate and analyze issues, in particular in cases where issues of various areas of law are commingled.
This course on comparative law is an introduction to the method and concept of comparative law as well as a study and a comparison of different legal traditions and legal systems with their distinctive components and internal relations in the time of globalization.

Emphasis will be placed on the social and cultural perspectives represented by the various legal traditions, the authority and the role of law as well as the structure of legal systems, and the enforcement of legal rules (Europe, Asia, Latin America, and sub-Saharan Africa).

After a brief survey of the comparative methodology and ideology we will compare and contrast various legal systems, focusing, on the one hand, on topics such as conflict between tradition and modernity, customary law, natural law, codification, constitutional culture, legal transplants, and, on the other hand, on a series of issues both in private law and in public law, including judicial systems, legal education and the legal profession.

Comparative Corporate Law

This course examines the core legal characteristics of the corporate form across six major jurisdictions: the US, UK, Germany, France, Japan, and Singapore. It explains the common agency problems that are inherent to the corporate form and compares the legal strategies that each jurisdiction uses to solve these common problems. This course also examines a number of the most significant debates in the burgeoning area of comparative corporate law. The major topics that the comparative examination in this course covers include: the universal corporate form, the ubiquitous problem of agency, the universal protection of creditors, regulating related party transactions and hostile takeovers, and the convergence and "corporate law matters" debates.

Civil Law Practice (Advanced Course)

Civil Law Practice is a course designed to provide advanced legal training and practical experience in civil law. Students will have the opportunity to work on real-life legal cases, gaining hands-on experience in areas such as contract law, tort law, and property law. The course will also cover professional ethics and the skills necessary for a successful career in civil law.

EU Public Law

This course will provide an introduction to the European Union's legal framework, focusing on the Treaty of Lisbon and the European Convention on Human Rights. Students will explore key concepts such as the European Court of Justice, the principle of proportionality, and the role of the European Parliament. The course will also cover the latest developments in EU law and the implications for national legal systems.
Community law-making. The Part 1 will conclude with Sovereignty and federalism: the authority of EU law and its limits, Fundamental rights and Judicial relations in the European Union. The Part 2 will be composed of Administrative law. The class will look at Accountability in the European Union, The enforcement of European law and Judicial review: the legal accountability of the Community institutions.

M2090.000700 비교헌법 특강 2-2-0

Studies in Comparative Constitutional Law

We can study constitutional law not by direct importing foreign constitutional law and theory but by making review and choices many cases of other countries from our view. It means that independent comparative constitutional law course could be made. In this course, student examines the method and choices many cases of other countries from our view. It could be made. In this course, student examines the method and choices many cases of other countries from our view. It

M2090.000800 미연방헌법 특강 2-2-0

Studies in U.S. Constitution

This course examines the core legal characteristics of the U.S. Constitution. It covers the major provisions of the U.S. Constitution, including the Bill of Rights, the First Amendment, the Fourteenth Amendment, and the Equal Protection Clause. The course also explores the legal and constitutional challenges that have arisen in the context of modern society, including issues of privacy, freedom of speech, and the regulation of businesses.

M2090.000900 비교법사학 특강 2-2-0

Studies in Comparative Private Law

This seminar is for a comparative approach in the field of private law. Comparative law is for Korean law for obvious historical reasons indispensable because Korean law has received European civil law. This seminar surveys other legal systems with respect to main legal problems and solutions in a comparative perspective and seeks more reasonable alternatives for Korean law in the globalizing world.
This course consists of 3 parts. Part 1 considers Criminal Law’s Parochialism, part 2 considers Histories and Functions of Comparative Criminal Law and part 3 considers Selected Topics in Comparative Criminal Law. In considering Comparative Criminal Law and Selected Topics, we will compare them with Korean criminal law and procedure, which will shed some light on deeper understanding and refining of Korean criminal justice system.

M2090.001300 국제환경법 특강 2-2-0

Studies in International Environmental Law

This course aims to promote the comprehensive understanding of the international environmental law, one of the fastest growing fields of the international law. It reviews at theories, historical developments, and major international environmental agreements. The course takes interdisciplinary approaches, considering distinctive features of environmental problems, the development of principles and the formation of the international environmental regimes, the roles of intergovernmental and non-governmental organizations, the inter-linkages that exist between the environment and trade, investment, and human rights. A number of simulation negotiations will be used to encourage students’ participation. If necessary, guest lectures by practitioners may be arranged.

M2090.001400 비교경제법 특강 2-2-0

Studies in Comparative Economic Law

This course is a survey of immigration law. The course will cover various aspects of US commercial and business law, from the practical perspective. Topics to be addressed will include corporate law, contract negotiation, the structuring of business relationships (such as joint ventures, partnerships, mergers and acquisitions, etc.), and the resolution of business disputes. The course will aim to provide an introduction to US corporate law, as well as a practical introduction to US business practices (especially as these relate to legal relationships and legal issues that arise in the ordinary course of business).

M2090.001500 미국법 사례 3-3-0

Current Issues in U.S. Law

This course is a survey of immigration law. The course will consider their applicability in various Asian countries.

M2090.001600 미국상사법 연습 3-3-0

U.S. Business Law and Practice

The purpose of this course is to advance students’ understanding of the legal principles of economic law by research- ing economic laws and industrial environments of foreign countries comparatively. Students will focus on the principles of the economic laws of the EU, US, and other nations and, consider their applicability in various Asian countries.

M2194.001500 이민법 3-3-0

Immigration Law

The purpose of this course is to advance students’ understanding of the legal principles of economic law by researching economic laws and industrial environments of foreign countries comparatively. Students will focus on the principles of the economic laws of the EU, US, and other nations and, consider their applicability in various Asian countries.

M2194.001500 이민법 3-3-0

Immigration Law
M2194.001600 현대법이론 2-2-0

Current Legal Theory

이 과목에서는 법학방법론이라는 이론적 논의를 넘어 구체적인 사안의 발생 및 해결방법 등을 체계적으로 탐구하고, 나아가 이를 적용할 수 있는 방법론을 모색한다. 과정은 세 부분으로 나뉜다. 첫 번째 부분은 방법론적 이론의 스펙트럼을 학습하는 것이다. 첫 번째 부분은 체계적인 문제를 다룬다. 세 번째 부분은 법학방법론이 담해야 하는 규범적 및 경험적 질문을 다룬다.

The course is not a course in legal methods, but a course that reflects on them – what they involve, their empirical and normative status and scientific character. It wants to get its students a better theoretical understanding of what they do, when they apply the law in their doctrinal subjects. The course is divided in three parts. The first part familiarizes with the spectrum of methodological theories. The second part of the course addresses the systematic questions that arise in theoretically reconstruction of legal methodology. The third part takes up the normative and empirical questions any legal methodology has to answer.

M2194.001700 인권법 3-3-0

Human Rights Law

인권을 다루는 법에 대한 통합적 이해와 접근을 시도하는 기본 강좌이다. 인권의 국제적, 지역적, 국내적 차원과 각 차원에서의 법의 역할 및 그 상호연관성을 유기적으로 고찰하면서, 인권의 철학적 측면과 실정법적 측면, 이론적 측면과 지형의 측면에 대한 종합적인 이해를 도모한다. 강의 전반부에서 인권과 인권법의 기초 이론과 역사적 발전과정을 살펴본 후, 후반부에서는 인권법의 세부주제에 구체적 정책에 대하여 다양한 국내외 사례를 분석하면서 법적 문제지형을 파악하고 효과적 접근과 해결방안을 모색하는 토론 위주의 수업을 진행한다.

This is a basic course of human rights law, aiming to achieve integrated legal understanding of human rights. International, regional, and domestic dimensions of the subject will be covered, focusing on the role of law in each dimension and their organic relations. The course takes comprehensive approaches to the theory and practice of human rights law. Its earlier sessions examine basic theories and legal historical development of human rights. The later part of the course deals with specific themes and questions of human rights law, analyzing various international and domestic human rights cases and discussing their legal challenges as well as effective ways to address those problems.

M2194.001800 영국 부당이득법(1-1-0)

The English Law of Unjust Enrichment

이 강의는 영국법에서 원고가 피고로부터 언제 어떻게 부당이득을 반환 받을 수 있는지를 다룬다. 원고가 피고에게 금전을 지급한 경우가 대표적인 예이다. 영국법에서 이 주제는 오랫동안 주목을 받지 못하였으나, 최근에는 법학 교육과정에서 가장 흥미로운 주제로 여겨지고 있다. 부당이득법 분야에서는 초기에 형성된 관례가 강하게 유지되어 왔으나, 합리적인 분석에 비추어 이러한 관례의 입장이 타당한지는 이론의 여지가 있다.

구체적으로 이 강의는 어느 경우에 부당이득반환책임이 성립하는지, 법원이 피고에게 부당이득반환을 명하는 것이 어떠한 근거에서 정당화되는지를 개관한다. 나아가 상태변경의 항변(change of position)과 같이 부당이득반환청구 사건에서 가능한 항변들을 검토한다. 구체적으로 이 강의는 어느 경우에 부당이득반환책임이 성립하는지, 법원이 피고에게 부당이득반환을 명하는 것이 어떠한 근거에서 정당화되는지를 개관한다. 나아가 상태변경의 항변(change of position)과 같이 부당이득반환청구 사건에서 가능한 항변들을 검토한다. 끝으로 금지청구권 행사의 가능성도 살펴본다. 이러한 내용은 영국법이 대륙법과 어떻게 다른지를 이해하는 토대가 될 것이다.

This course is concerned with the question how and when a plaintiff can in English law compel a defendant to surrender an enrichment gained at the plaintiff's expense. The paradigm case is money paid by mistake. Long neglected in English law, the subject has in recent years become one of the most exciting in the legal curriculum. It draws its cases from areas of the law which have resisted rational analysis, largely because they have tenaciously preserved the language of an earlier age.

More specifically, it asks when a defendant will be seen to be enriched, when that enrichment will be at the plaintiff's expense, and what reasons justify the court ordering the reversal of that enrichment. It will then examine possible defences to such claims, such as change of position. Finally, it will consider the availability of proprietary relief. One continuing theme will be how English law compares to systems with a Civilian root.
융합과학부(Department of Transdisciplinary Studies)

490.501 융합과학기술개론 3-3-0

Introduction to Convergence Science and Technology

본 과목은 융합과학기술대학원의 학생들 학문과 실무에 필요한 기본교육을 제공하고자 합니다. 융합과학기술분야에 대한 학문적 정의와 분류, 그리고 그 성과의 적용방식 등을 가르치고, 학생들은 실무자로서의 역할을 이해하고 실력을 갖추게 하기 위한 과목입니다.

This course is offered as a mandatory course to the MS and PhD students of the Graduate School of Convergence Science and Technology. This course first deals with the definition and classification of convergence science and technology and then teaches students introductory nano-convergence technology, digital contents convergence technology and intelligent convergence systems technology. Students may be assigned a term paper or a term project.

490.502A 융합 지식의 실무 응용 1 3-0-6

Field Applications of Convergence Knowledge 1

융합과학기술대학원 석박사 과정 학생들은 소속 학과와 관련된 국내외 산업체 또는 연구소에서 적어도 1회 이상을 인턴으로 근무해야 한다. 이 과목은 인턴을 통해 학생들은 산업현장의 요구사항을 이해하고, 협업과 소통 기술을 배우며, 리더십을 함양한다. 이 과목은 인턴을 통해 학생들은 산업현장의 요구사항을 이해하고, 협업과 소통 기술을 배우며, 리더십을 함양한다. 인턴으로 근무하면서 인턴을 통해 학생들은 산업현장의 요구사항을 이해하고, 협업과 소통 기술을 배우며, 리더십을 함양한다. 인턴으로 근무하면서 인턴을 통해 학생들은 산업현장의 요구사항을 이해하고, 협업과 소통 기술을 배우며, 리더십을 함양한다.

Every graduate student in Graduate School of Convergence Science and Technology are asked to work as an intern student at relevant industries or research institutes more than once during summer or winter vacations. Students will understand the requirements of industry or research institutes through this course, and learn how to work together and communicate with others, and eventually acquire leadership.

495.601 융합 지식의 실무 응용 2 3-0-6

Field Applications of Convergence Knowledge 2

융합과학기술대학원 석박사 과정 학생은 소속 전공을 넘나드는 융합적 실습형 교과목을 이수하는 것을 권장한다. 이 과목은 융합적 실습형 교과목으로 학생들이 스스로 창의성을 발휘하여 새로운 아이디어를 제시하고, 연구를 진행한다. 제출도 및 보고서를 제출하며, 각 주별로 Progressive report를 제출 또는 발표한다.

Every graduate student in Graduate School of Convergence Science and Technology are recommended to get the inter-disciplinary practical lectures. In this course, students will establish the inter-disciplinary topics, which are cross-over topics among the each programs in Graduate School of Convergence Science and Technology, and then figure out the topics by practical research. Students are asked to submit proposal, presentation and progressive report and it will be evaluated by a professor in charge.

495.701 융합 프로젝트 설계 3-3-0

Interdisciplinary Project Design

 본 과목은 3-5명의 수강생들이 팀을 이루어, 융합적 문제의 발견 및 정의에서 시작하여, 이를 구체화하고 프로젝트로 발전시켜 결과를 산출하고 최종 발표까지의 전 과정을 학생들이 주도하며 진행하게 함으로써, 학생들의 문제 발견 및 기획 능력과 창의성을 증진시키는 과정이다. 때 학기마다 다른 영역의 문제를 주어, 최소한 두 가지의 이상 영역에서 공통적으로 풀어야하는 문제를 주고 팀으로서 융합적 사고 능력 및 문제해결 능력을 극대화하도록 한다.

This course is a team-based project where each team, made up of 3-5 students, is responsible for a series of overall processes, including finding & defining a problem of interdisciplinary nature, formulation of ideas into a real-world problem, implementing the ideas/concepts, and delivering the final output. A different set of problems will be given each semester, which interest students from at least two distinct academic backgrounds, to maximize the ability to think and communicate from different perspectives.
**Introduction to Nanoscience and Technology**

The purpose of this course is to ensure that all the students in Nano Science and Technology Program master the fundamental cognitive tools of physics, chemistry, and biology that are required for convergence science and technology. Each student will follow lectures on those two of the three fields that are different from his/her major, thus a student majoring in physics will learn chemistry and biology, and analogously for the other majors. In this way the students will learn the terminology and the approaches of the disciplines complementary to their major, a key asset for the realization of truly interdisciplinary research. The concepts taught will be at the core of biology, chemistry and physics aspects of modern convergence science.

**Core Physical Concepts in Nanoscience: Electromagnetism**

The objective of this course is to provide students with the fundamental understanding of electromagnetism required to perform research in the field of nanoscience and nanotechnology. The materials to be covered are at the undergraduate level, and applications to nanoscience and nanotechnology will be discussed. The topics include electrostatics, magnetostatics, Maxwell's equation, electromagnetic waves.

**Nanotechnology and Materials**

Nanometer scale chemical reactions and processes are inherently different from their macroscopic counterparts. In this course, we will delve into the chemistry and materials science of structures with critical dimensions in nanometer range will be taken. Topics covered include: chemical patterning and lithography, layer-by-layer self-assembly, nanocoating printing and writing, nanowire and nanotube, nanocrystal synthesis and self-assembly, microporous and mesoporous materials, self-assembling block copolymers. We will also describe the chemical and physical aspects of major classes of nanomaterials as well as their applications in various innovative mechanical, electrical and electronic devices.
The students are then introduced to the principles and applications of modern photonic devices, including lasers, photo-detectors, waveguide optics, modulators, and nonlinear optics. The level of the course is suitable for undergraduate seniors in electrical engineering and physical sciences.

491.602 Nano Structure and Physical Properties

Nanostructure and Physical Properties

This course deals with the measurement techniques for the properties of nanoscale materials and devices for graduate students who understand the basic principles of nanoscience. The course includes scanning probe microscopy and application of TEM in nanostucture analysis and dealing with measurement structure analysis using X-ray, optical property measurement. Some of the topics include physical properties of the nanoscale structure, electrical properties, scanning tunneling microscope, atomic force microscope, and other functional scanning probe microscope such as Magnetic Force Microscope.

491.608 Unconventional Nanopatterning and Applications

This course is designed to provide graduate students with emerging processes of nano technology research and engineering. Specially, various applications of emerging fusion process, such as polymer nano-matrix materials, organic devices, optical devices, LCD display, OLED and lab on a chip, would be introduced.

491.611A Nano Biophotonics

Nano Biophotonics

Nano Biophotonics deals with interactions between light and biomatter that combine photonics, nanotechnology, and biotechnology. The course will introduce basic concept of the biology-photomons interface, investigate interaction between light and biomolecules at nanoscale, and discuss about various applications, including photobiology, bio-sensors, bioimaging, and microarray technology.

491.612 Brain/Neural Engineering

This course introduces the principles of neural cell operation in brainand synaptic transmission. It covers experimental methods and models in the study of single neural cells, cortical circuits, and brain activity. Also, included are the topics illustrating neural principles of movement, vision, memory and sensing, and the state of the art neural prosthetics research.

491.613 Nano Material Engineering and Experiment

This course is designed to provide graduate students with the engineering techniques of the nanomaterials. Especially, techniques to prepare monodispersed nanoparticles will be introduced in detail. A series of experiments are also designed to allow students to gain experience with size and morphology-controlled synthesis of various nano materials.

491.614 Nano Convergence Technology: Energy and Environment

This course introduces the principles of neural cell operation in brain and synaptic transmission. It covers experimental methods and models in the study of single neural cells, cortical circuits, and brain activity. Also, included are the topics illustrating neural principles of movement, vision, memory and sensing, and the state of the art neural prosthetics research.

491.621 Convergence Polymer Science

Convergence Polymer Science

Convergence Polymer Science is a course that introduces the principles of neural cell operation in brain and synaptic transmission. It covers experimental methods and models in the study of single neural cells, cortical circuits, and brain activity. Also, included are the topics illustrating neural principles of movement, vision, memory and sensing, and the state of the art neural prosthetics research.
Polymers constitute a fundamental component of modern materials science and technology and they also play very important roles in biological systems. The course will give a broad understanding of the science and technology of the many different types of polymer that may be encountered in convergence science and technology research and applications. Key polymer concepts such as classification schemes, dispersity and isomerism, glass formation, rubber elasticity, persistence length and random coil dynamics will be explained in the first half of the course, while the second half will consider a selected set of examples relevant for nanotechnology in some depth, in particular block-copolymers, elastomers and soft lithography, Ionic polymers (polyelectrolytes), polymer fibers as well as the three key biopolymers: cellulose, proteins and nucleic acids. The course connects to the course Nanotechnology by self-assembly as well as to the course Soft Matter Physics, the key concepts of which apply to many polymers and polymer solutions.

Seminar in Nanoscience and technology 1

이 과목은 학생들에게 나노과학기술 분야 인프라현황과 주요 이슈에 대한 이해를 돕기 위한 세미나 형태로 진행된다. 이 세미나의 주요 주제는 나노과학, 생명과학, 나노소자, 그리고 나노 소재 등 다양한 분야가 된다. 이 세미나의 연사는 여러 관계 연구기관과 산업체에서 초청되어 진행된다.

This course is to provide students current states of nano technology research and engineering. Subject of the seminar will vary from nano science, bioscience, nanodevice, and nano materials. The speaker will be invited from various research institutes and industries.

Seminar in Nanoscience and technology 2

이 과목은 학생들에게 나노과학기술 분야 인프라현황과 주요 이슈에 대한 이해를 돕기 위한 세미나 형태로 진행된다. 이 세미나의 주요 주제는 나노과학, 생명과학, 나노소자, 그리고 나노소재 등 다양한 분야가 된다. 이 세미나의 연사는 여러 관계 연구기관과 산업체에서 초청되어 진행된다.

This course is to provide students current states of nano technology research and engineering. Subject of the seminar will vary from nano science, bioscience, nanodevice, and nano materials. The speaker will be invited from various research institutes and industries.

Topics in Nanobiosystem

나노융합학과 석박사 과정 학생들의 공통과목으로 나노과학기술의 특수분야에 대한 주제를 선정하여 나노융합학과에서의 필요에 따라 운영한다.

This course is common course for the master’s and doctor’s course students. The subject of this course will be a specific area of nano technology depending on the current issues and interest. This course is run depending on the necessity of nano technology curriculum.
engineering; scaffolds in tissue engineering; biomaterials for soft and hard tissue regeneration or replacement; and nanoparticle-based drug delivery systems. This course also includes the state of the art biomaterial-related studies from recent publications.

Nanomedicine involves the development and application of materials and devices to study biological processes and to treat disease at the level of single molecules and atoms. Through the study and treatment of disease at the molecular level, this exciting new field of nanotechnology and medicine is offering unique capabilities in disease diagnosis and management. This course offers a survey of timely concepts in the rapidly emerging nanomedicine. We will introduce basic principles underlying nanomedicine and review how nanomedicine is redefining clinical research in areas such as diagnostic imaging agents, nanomaterial-based drug delivery, and nanoscale proteomics. Students will be expected to gain a broad understanding of concepts and applications of nanomedicine, as well as an opportunity to be trained to prepare creative concepts in nanomedicine to a focused clinical area of their choice, through writing a research grant proposal.
The course provides the basic understanding of human information behavior, one of the fundamental theories in information science. Information Behavior is the totality of human behavior in relation to sources and channels of information, including both active and passive information seeking, and information use. This course will analyze popular web services with HIB models and theories.

This course is an introductory course on information retrieval in a modern world – how to produce, archive, manage, and search/retrieve information. In particular, we focus on issues at hand such as Big Data, Scalability, and Cloud Computing, and how to make use of them in real-world applications.

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Introduction to Modern Information Retrieval

This course provides the basic understanding of human information behavior, one of the fundamental theories in information science. Information Behavior is the totality of human behavior in relation to sources and channels of information, including both active and passive information seeking, and information use. This course will analyze popular web services with HIB models and theories.

Human Information Behavior Research Methods

This course introduces various research methods analyzing human information seeking behavior, especially usability analysis and user experience analysis. In the course, the ways of collecting data, designing usability test experiments and interpreting the data are taught.
to Music Information Retrieval is to teach students the fundamental theory and the algorithm design techniques to build the MIR systems that may answer the above questions. Students will learn various topics from digital audio signal processing to machine learning algorithms, and design their own MIR systems or algorithms as the final project.

Music Information Retrieval Systems

This course aims to prepare students to develop the Music Information Retrieval Systems to actually create the system that may answer the above questions. I'd like to extract the guitar part only from my mp3s. How do I search for music? I don't want the songs recommended by my online music service. Can computer recommend songs I really like? can learn from data. Some of the main topics include supervised learning, support vector machine, unsupervised clustering, and recommender system for information retrieval.

Entreprenurial Mindset

This class deals with machine learning in the area of information studies. Machine learning is a branch of Artificial Intelligence, where it concerns systems and techniques that can learn from data. Some of the main topics include supervised learning, support vector machine, unsupervised learning, clustering, and recommender system for information studies.

Dissertation Research

- 1095 -
explore topics on social computing including how and why social computing works, what insight we can get out of all the data people leave behind. During the coursework, students will learn to program in Python, the mathematical techniques for mining the web, and skills for working with web APIs for data collection. The course will offer students a hands-on experience on how to apply the various web-mining techniques in real applications.

Seminar in Information Studies

This is a seminar course that helps students understand research status and issues in the digital contents and information studies areas. The primary topics of this seminar include user experience, human computer interaction, music and audio convergence, social data, system data, game and contents. Speakers are invited from academia, research institutes, and industry of related fields.

Research Topics in Human Computer Interaction

This is a seminar course that will cover seminal work published in recent top-tier research conferences in the field of Human Computer Interaction. Topics include interactive systems, interaction techniques, the design and evaluation of user interfaces, computer-supported cooperative work (CSCW), multimodal interfaces, design and evaluation methods, ubiquitous and context-aware computing, social computing, and mobile interfaces.

Statistical Analysis for Information Studies

This course deals with the current issues in information studies. The main focus can be adjusted each year. The students will learn the theory and practice of HCI according to the lecturer or student's needs in every semester.

Human Computer Interaction Research

This course deals with the current issues in game and contents area. Thus, the theme of the lecture may be different according to the lecturer or student's needs in every semester.

Data Analysis for Information Studies

This course covers advanced research topics related to data analysis – study and discussion of recent papers and technologies, data analysis projects that result in internationally presentable outcomes, and invited talks and in-depth discussions. The main focus can be adjusted each year.
Advanced Research Project in Data Science

This course is for advanced students with research data and research topic. Relevant knowledge in literature is studied, and each student’s study progress is shared with the entire class for an accelerated learning.

Auditory Perception and Cognition

This course covers how sound is generated and transmitted to our brain through the auditory pathway, following the auditory signal as it is transformed and encoded to neural code that our brain can understand. In particular, we will introduce how important attributes in sound and music such as frequency, pitch, rhythm, and harmony are perceived and interpreted by our brain, and how we can measure these activities through experimental paradigms. Finally, we aim to build a real-world system that can be applied to audio/music/auditory perception through the final project.

User Experience

User Experience is a sub area of Human-computer interaction. UX designs 1) sequence and 2) touchpoints between Information system and user. The course covers; definition, history, components, and best practices of User Experience. UX design methods will be introduced and practiced. Term mission is students exercise on contemporary IT system's UX.

Neural Networks for Information Convergence Studies

This course focuses on neural networks that is a core technology of the modern artificial intelligence. The main study topics include feedforward networks, regularization, optimization, CNN, RNN, and some of the recent research problems. Students are required to complete a final project.
Theory and Practice in Intelligent Convergence Systems

This course defines intelligent convergence systems from the theoretical perspectives and teaches core subfields including electric and electronic systems, software, intelligence algorithms and sensors and actuators. This courses is collectively taught by three or more lecturers and students are assigned and conduct one or more nontrivial term projects.

In this course, students apply the knowledge learned from the course “Lecture and Practice in Intelligent Convergence Systems” to the design and of the hardware and software systems. It includes the design of the mechanical platform, systems and microprocessor-based digital hardware systems design. Specifically, the lecture topics include memory controllers, input/output devices, system buses and communication interfaces. This courses also teaches students low-level system programming such as assembly programming and device driver writing. Students are offered one or more term projects related to microprocessor-based digital system design.

Dynamics and Control of Robot-Environment Interaction

This course covers topics related to operating complex high-DOF robots in human environment. The areas will include dynamics & control of robots with task redundancy, human-like robots, haptic interaction with physical or virtual robots, Robot cooperation, Bilateral teleoperation, Grasping, and Planning.

Computer Interconnection Networks

This course covers topics in interconnection network architecture and design including network topology, routing, flow control, deadlock and deadlock avoidance, congestion control, and router architecture in modern computer systems. We will examine applications of networks to on-chip networks, parallel computer interconnect, shared memory interconnects, data center networks, and switching fabric in Internet routers.
493.613

Mathematics for Intelligent Systems

This course deals with mathematics for theory and implementation of intelligent systems. Students will learn graduate-level applied mathematics, which are foundations for computer systems, robotics, and system theory. The purpose of this course is for students to learn concepts of important mathematical tools and practical applications rather than rigorous proofs of mathematical theories.

493.701

Topics in Intelligent Convergence Systems

This course deals with various core technology and theory in the intelligent convergence systems area. The covered topics include intelligent convergence systems applications such as intelligent automotive systems, to core areas such as embedded software and digital systems, to advanced areas such as cognitive science and intelligent algorithms, and base areas such as computer vision. This course may be given as a series of lectures by the instructor, a series of presentations by students, or the mixture of both. Students may be assigned a term project or a term paper. Grades are given as Pass/Fail.

493.702

Seminars in Intelligent Systems

This is a seminar course that helps students understand research status and current issues in intelligent systems areas. The primary topics of this seminar include robotics, computer hardware systems, and computer software systems. Speakers are invited from academia, research institutes, and industry of related fields.

493.803

Dissertation Research

This course is designed for students who are conducting dissertation research in intelligent systems. The purpose of this course is for students to conduct independent research in intelligent systems and to prepare for their dissertation. Students will work closely with their advisors to define research problems, conduct independent research, and prepare their dissertation. Grades are given as Pass/Fail.

M2681.000100

Pattern Recognition for Intelligent Systems

In this course, we study pattern recognition algorithms for intelligent systems. Pattern recognition, which is essential in developing intelligent systems, is a field of study that encompasses the subjects such as optical character recognition, fingerprint recognition, face recognition, voice recognition and so on. Depending on the problems to be solved, pattern recognition problems can be divided into classification, regression and clustering problems. In this course, representative algorithms for each problem are studied and intelligent systems that uses pattern recognition techniques are implemented in a term project.

M0000.005300

Intelligent Computer Vision

This course is designed for students who are conducting research in intelligent systems. Computer vision is an essential area of research for intelligent systems, whose final objective is to let the computers mimic the functionality of human visual information processing. To this end, in computer vision, we deal with various algorithms which enable computers to automatically understand scenes by analysing still or moving pictures from sensors such as cameras.

In this course, representative computer vision algorithms are studied and intelligent systems that use computer vision techniques are implemented in a term project.
게 과정에서 고려해야 할 신뢰성, 에너지 효율성 등의 요소를 세세히 살펴봄으로써 학생들의 디지털 시스템 설계에 대한 이해를 높인다.

CMOS fabrication technology has developed continuously in the last few decades, and it has been one of the main thrusts behind recent advances in high performance and mobile systems. This course introduces various digital integrated circuit design techniques required for practical digital system design using nanometer-scale fabrication process. In addition, key metrics in hardware design including reliability and energy efficiency are covered.

이 강의에서는 VLSI 설계 분야의 최근 연구 동향을 소개하고, 효율적인 설계를 위한 고급 설계 기법을 다룬다. 구체적으로 디지털 회로의 잡음, 배선, 저전력 설계 등의 주제를 다루며 각 활용 영역에서 사용되는 다양한 회로 구조를 소개한다.

This course introduces current VLSI design trends and advanced design techniques for energy-efficient systems. Important design issues including noise, interconnect, low power circuit are covered in detail and various circuit topologies for different applications are introduced as well.

데이터센터 구조의 융합적 접근 (A Holistic Approach to Datacenter Architecture)

데이터센터 구조의 융합적 접근 (A Holistic Approach to Datacenter Architecture)은 모바일, 클라우드 컴퓨팅이 보편화되면서 대부분의 대용량 자료들이 데이터센터에서 수집, 처리, 보관되고 있다. 본 강의에서는 융합적 시각에서 이러한 데이터센터를 하나의 컴퓨터로 접근하여, 전달, 인산, 저장 기능이 구현되는 원리와 예시를 학습하며, 보편적인 문제들인 소프트웨어 하드웨어 구성을, 확장성, 총소유비용 및 신뢰성 문제를 다룬다.

As mobile and clouding computing becomes more popular, most large-scale data are acquired, processed, and stored at datacenters. This class approaches a datacenter as a computer, through which we study the principles and practices of their communication, computation, and storage aspects of datacenters, as well as HW/SW components, scalability, total cost of ownership, and reliability.

Precision medicine is the direction of medical care that provides optimized treatment for each patient according to different characteristics of each patient. Theranostics, a combination of diagnosis and therapy, is a concept that involves performing a specific imaging diagnosis and a targeted treatment using a probe that is well-targeted to a specific target of a disease. This enables us to customize the treatment according to the degree and nature of the disease of each patient and is one of the major parts of precision medicine. This lecture aims to understand the concepts of theranostics and its clinical applications, as well as to develop convergence research skills for developing new theranostic methods.
Nano Technology and Biomedical Sciences

The subject of this class is the effects of radiations on human body and studying protection concepts of diseases will be studied for the applications of nanotechnologies. The applications of nanoparticle technologies in medical imaging and radiation protection will be learned. Also several methodologies of biological sciences will be studied. Principles of medical image processing as well as common inference using medical images are also discussed. Specific topics include dynamic image processing and statistical image processing or dynamic image processing and statistical image processing. This course deals with medical image processing in the fields of radiation imaging including X-ray, CT (computed tomography), gamma camera, SPECT (single photon emission tomography), PET (positron emission tomography) and Compton camera for tomographic imaging. This course also include industrial areas such as airport security (X-ray) and cargo and vehicle X-ray inspection system.

Radiation Protection and Shielding

This course will introduce the fundamental principles of radiation protection, radiation sources, and the biological effects due to radiation. The necessity or radiation protection will be discussed through radiation accidents. The radiation shielding for the storage of radiation isotope will be designed by students as a practice. The radiation shielding for the storage facility and transportation device of radiation isotope will be better understanding. The radiation shielding for the storage of radiation isotope will be designed by students as a practice. The radiation shielding for the storage facility and transportation device of radiation isotope will be designed by students as a practice.

Advanced Radiation Imaging Devices

This course will introduce the fundamental principles of radiation protection, radiation sources, and the biological effects due to radiation. The necessity or radiation protection will be discussed through radiation accidents. The radiation shielding for the storage of radiation isotope will be designed by students as a practice. The radiation shielding for the storage facility and transportation device of radiation isotope will be designed by students as a practice. The radiation shielding for the storage facility and transportation device of radiation isotope will be designed by students as a practice.
of this technology can be understood.

495D.612 Field Learning in Advanced Convergent Medical Imaging Science

...image-guided interventions require a source of images, real-time display linked to the intervention and patient, and target definition in the context of real 3D space of the patient combined with virtual image space. Preoperative or intraoperative images are used during a procedure to guide the physician to a target. This class presents the basic components of image guidance for medical procedures, such as tracking technologies, visualization, augmented reality, image registration, image segmentation, and image acquisition.

In addition, recent trends in safety management and quality assurance of advanced radiological imaging equipments are discussed. Each student is expected to participate an experiment for evaluating equipment characterization and quality assessment.

495D.613 Image-guided Interventions

...the surgical robot in the operating room presents technological and clinical breakthroughs in developing new surgical techniques to improve the quality and outcome of surgery. This class covers technologies, algorithms, and medical image data to enhance and improve the capabilities of surgical robotics. This also includes the clinical applications of surgical robotics in several subdisciplines of surgery including urology, cardiology, neurosurgery, pediatric surgery, and general surgery as well as telesurgery.

495D.702 Seminars in Advanced Medical Image Processing 2

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495D.803  3-3-0  802.2019A  3-3-0  802.2021A  3-3-0

**Dissertation Research**

Suzuki, and Pehrson, authors of the study, provide a comprehensive review of the biological and molecular aspects involved in the radiation response of biological systems. The study focuses on understanding the molecular and cellular mechanisms underlying radiation-induced damage and repair processes. The authors emphasize the importance of interdisciplinary approaches, combining experimental evidence with computational modeling, to elucidate the complex interplay between radiation and biological systems. The implications of these findings for radiation therapy and cancer research are also discussed.

**Radiation Biology**

Radiation biology is a field that examines the effects of ionizing radiation on living organisms, from the molecular to the population level. This course covers the fundamental principles of radiation interactions with matter, including the nature of radiation, its sources, and its behavior in different materials. Students will learn about the effects of radiation on biological systems, including the genotoxic and nongenotoxic effects, and the mechanisms of radiation-induced cell death and repair. The course also explores the application of radiation biology principles in medical and industrial settings, including radiation therapy, radiation imaging, and radiation protection.

**Medical Image Processing**

This course provides an in-depth understanding of medical imaging techniques and their applications in modern healthcare. Students will learn about the physics and mathematics underlying medical image acquisition, including the principles of digital image processing, and the use of algorithms for image enhancement, registration, and segmentation. The course covers a range of imaging modalities, including X-ray, CT, MRI, PET, and SPECT, and explores the challenges and limitations of each technique. The course also includes a hands-on component, where students will apply their knowledge to real-world medical imaging problems.

**Special Lecture for 3 Dimensional Medical Imaging**

This lecture focuses on the latest developments in 3D medical imaging, with an emphasis on the role of 3D imaging in clinical applications. The lecture covers the principles of 3D imaging, including volume rendering, surface rendering, and virtual endoscopy, and explores the advantages and limitations of each technique. The lecture also includes case studies of 3D imaging applications in various clinical settings, such as oncology, cardiology, and neurology.

**Dissertation Research**

The dissertation research involves the study of radiation-induced genetic damage and its repair mechanisms in mammalian cells. The research is based on a collaboration with the Radiation Biology Laboratory at the University of California, San Francisco. The study aims to elucidate the molecular pathways involved in the repair of DNA double-strand breaks induced by ionizing radiation, with a focus on the role of the DNA repair protein RAD51. The study employs a combination of cellular assays, biochemical analyses, and computational modeling to understand the molecular mechanisms of radiation-induced DNA damage and repair.

**Radiation Physics**

The course on radiation physics covers the fundamental principles of radiation physics and their applications in radiation biology and medicine. The course begins with an introduction to the nature of radiation, including its sources, properties, and interactions with matter. The course then explores the basic principles of radiation biology, including the effects of radiation on living systems, the mechanisms of radiation-induced cell death and repair, and the implications of radiation biology for medical and industrial applications. The course also includes a hands-on component, where students will apply their knowledge to real-world radiation physics problems.

**Medical Image Processing**

The course on medical image processing covers the principles and applications of medical image processing, with a focus on the latest developments in 3D imaging and image registration. The course begins with an introduction to the fundamentals of medical image processing, including the principles of digital image processing, and the use of algorithms for image enhancement, registration, and segmentation. The course then explores the principles and applications of 3D imaging, including volume rendering, surface rendering, and virtual endoscopy. The course also includes a hands-on component, where students will apply their knowledge to real-world medical imaging problems.
Introduction to Biomedical Radiation Convergence Sciences

This lecture aims to provide basic understanding of complex biosystems, principles and techniques how to construct computational models of biosystems and apply to analysis of multidimensional biomedical images.

Practicum in Clinical Radiation Therapy

This course provides students clinical knowledge and experience by attending the entire processes of radiation treatment. Students will be involved in some parts of radiation treatment such as planning and simulation. They will learn how to operate treatment machines and simulators. They will study specific protocols for different cancer treatments. The procedure of radiation therapy (diagnosis, simulation, computed tomography, immobilization technique, treatment planning, treatment) will be understood. And they will study characteristic of radiation equipment design. Monte Carlo radiation transport, the basic application of radiation imaging devices using the Monte Carlo method.

Monte Carlo Application of Radiation

Monte Carlo method is variously applied in all aspects of radiation medicine. It can calculate more effective and exact in radiation dose calculation, scatter radiation trace, radiation equipment design. Monte Carlo radiation transport extend application as essential method in modern radiation medical research. Students learn to solve the radiation medical physics problems. This course covers the theory and techniques of the Monte Carlo method with a special emphasis on radiation transport applications in medicine. The course will give the student a grounding in the basic principles of the method and in the variance reduction techniques that are used in modern Monte Carlo transport computer codes. In addition, the student will gain experience writing Monte Carlo computer solutions to a variety of problem types and with running MCNP, Penelope, EGS4 codes.

Topics in Medical Radiation Physics

This weekly-based seminar is held by invited speakers from various specialties in radiation medicine and provides students clinical knowledge of the medical radiation physics by presenting the subject of radiation physics. Students also have an opportunity to review papers relevant to the latest technologies and academic trend on medical radiation physics. They can share important information through an open discussion with an instructor. There are research subjects in diagnosis radiation, radiation treatment and nuclear medicine which students are interested in. A seminar is held by presenting a thesis including the methodological approaches, research work and analysis method. Also, students

Monte Carlo Application of Radiation

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can have a ability for a presentation.

805.701

Introduction to Radiological Sciences

The radiation physics will be extended and specialized through the advances of medical science. For this reason, this course will discuss different forms of radiations and radioactivities. Furthermore, a basic knowledge with physical analysis and the quantum theory about the principle of radiation occurrence will be acquired to apply to applications for analysis and the quantum theory about the principle of radiation dose quantification. Especially, the course covers various methodologies of radiation dose quantification, which are used to evaluate medical imaging quality, are noise, uniformity, high- or low- contrast resolution, CNR, etc. The Definitions and units of noise, uniformity, high- or low- contrast resolution, CNR, which are used to evaluate medical imaging quality, are covered. Students will also acquire the knowledge about necessity and utilization of PACS technology in modern medicine.

M2682.000400

Fundamentals of Medical Imaging

Role of Radiation Technology in New drug Development

Radiation technology has played diverse roles in new drug development. In the preclinical and clinical stages of new drug development, use of radio-labeled materials can facilitate the elucidation of the absorption, distribution, metabolism, and excretion (ADME), mass balance, pharmacokinetic and pharmacodynamic profiles. This course intends to provide an overview of the various uses, possibilities, pitfalls and the ways to overcome them, and future prospects of radiation technology for students planning to pursue a career in new drug development.
Introduction to Convergent Systems Clinical Pharmacology

Systems approach is an intentional move from a traditional reductionistic perspective of biology to a systems-level, beyond descriptions of single molecules and their functions, to a systems-level, by understanding of systems clinical pharmacology, particularly in the action of a drug. This course intends to provide a basic understanding of the human body in terms of the parallel evolution in enabling platform technologies and the whole picture. Systems clinical pharmacology reflects beyond descriptions of single molecules and their functions, to a systems-level, by understanding of not only the individual scientific disciplines, but a capability to synthesize the knowledge from different disciplines, which still has a very low likelihood of success. However, well-developed new health technology is indispensable for greatly advancing health of the humankind, which can also create a huge value, not only financially, but also scientifically. Therefore, it is important to understand the whole processes of new health technology development and to make a sound decision at every step based on the understanding. This course intends to provide an overview of the various steps, scientific disciplines, decision-making principles of new health technology development process for students planning to pursue a career in this area.

Molecular Imaging as a Convergence Science

Molecular imaging is the visualization, characterization, and measurement of biological processes at the molecular and cellular levels in humans and other living systems. As an emerging technology, the molecular imaging is essential to investigate biology and medicine today. In this lecture, students will be provided with the concept of the molecular imaging followed by its applications using various imaging modalities such as PET, SPECT, CT, MRI, optical imaging and ultrasound imaging, etc. Especially, this should be a chance for converging multiple subjects such as Medicine, Pharmacology, Chemistry, Biology, Engineering, Physics and Mathematics because the molecular imaging is highly inter-disciplinary science.

Consultation for New Health Technology Development

Consultation for new health technology development is a focused multidisciplinary professional activity, which requires a deep understanding of not only the individual scientific disciplines, but a capability to synthesize the knowledge from the perspective of regulatory approval by the health authorities. The course will help students gain knowledge, hands-on skills, and experience for effective consultation for new health technology development using actual cases in the real world.
Understanding physiology and pathophysiology for Convergence Research

Convergence research in various disciplines is essential to promote human health and to develop efficient diagnosis and treatment of diseases. This lecture covers the basic physiology and pathophysiology of the human body, which are necessary for conducting convergence research for the biomedical application. Based on the understanding of physiology and pathophysiology, we intend to develop the ability to plan and perform a convergence research that is likely to be used in future clinical practices.

Theranostics and Precision Medicine

Precision medicine is the direction of medical care that provides optimized treatment for each patient according to different characteristics of each patient. Theranostics, a combination of diagnosis and therapy, is a concept that involves performing a specific imaging diagnosis and a targeted treatment using a probe that is well-targeted to a specific target of a disease. This enables us to customize the treatment according to the degree and nature of the disease of each patient and is one of the major parts of precision medicine. This lecture aims to understand the concepts of theranostics and its clinical applications, as well as to develop convergence research skills for developing new theranostic methods.
Ion channels and membrane potentials

Ion channels are plasma proteins present in all types of cells. Ion channels determine membrane potential in nerve and muscle cells, contraction of muscle cells, and secretion in epithelial cells. Ion channels control intracellular Ca²⁺, thus affecting cell signals.

In this lecture, ion channel genes are introduced along with their structures, biophysical properties and physiological effects, thereby affecting cell signals.

Clinical Proteomics

Clinical Proteomics

This course is designed to cover the problems involved with administration of drugs; through analyzing and solving such problems, students will understand solving techniques using drug delivery system and build on knowledge to create new technologies. Drugs to be dealt with in this course refer to small chemical drug, protein, gene and cells used in the treatment of diseases. For protein drugs, students will learn about drug delivery systems using chemically/physically combined technologies, manipulative technologies, formulation and device technologies. For polysaccharide drugs, students will learn about non-invasive delivery using chemical derivatives, and for genetic drugs, viral or non-viral vector systems. Furthermore, students will learn about cell delivery technology using the DNA manipulative cell technology, as well as protein delivery technology that makes use of cell technology, as well as protein delivery technology that makes use of cell technology.
examples from developmental biology, cancer, metabolomics and proteomics.

Specific Class Topics:
- Biochemistry with emphasis on the current proteomics and genomics in medical and pharmaceutical sciences
- Predictive Medicine, Systems Medicine and Personalized Medicine
- Systems Biology (Network Biology)

In recent years, there has been a growing interest from industry and universities on translational research. This emerging bi-directional discipline, when established in conjunction with systems biology, maximizes the efficient investigation of the biology of disease in order to develop improved therapies.

494.604 면역생물학 3-3-0

Immunobiology

면역계는 병원균에 의한 감염으로부터 체계를 보호하는 역할을 담당하며, 이러한 감염에 대한 보호적인 기능과 대비되는 악역, 자가 면역, 항가식, 거부, 항암 면역 등의 면역 반응을 일으킨다. 본 강좌에서는 앞부분에 면역 세포와 면역 기관 그리고 면역계의 다양한 면역자들을 소개함으로써 면역학에 대한 개념을 간략화하고 정리하고자한다. 이를 바탕으로 면역계가 어떻게 외부 환경과 자가 항암을 구분하여 인식하고, 병원균이 침입하였을 때 면역 세포가 어떻게 활성화되어 병원균을 제거할 수 있는지에 대해 자세히 알아보고자 한다. 본 강좌의 후반부에서는 면역계가 병원균에 의한 감염을 막는 보호적인 기능뿐만 아니라 악역, 자가 면역, 항가식 거부 등의 면역 반응을 일으키는 기전에 대해서도 살펴보고자 한다. 또한 이러한 면역계의 전반에 대한 이해를 바탕으로 다양한 면역계를 조절하여 면역 환경의 발병을 막고, 감염 질환 및 암에 대한 백신을 개발할 수 있는지에 대해 논의하고자 한다.

The immune system exists to protect the host from infection, and its evolutionary history must have been shaped largely by this challenge. Other aspects of immunology, such as allergy, autoimmunity, graft rejection, and immunity to tumors are treated as variations on this basic protective function in which the nature of the antigen is the major variable.

The first part of the lecture summarizes our understanding of immunology in conceptual terms and introduces the main players: the cells, tissues, and molecules of the immune system. The middle part of the lecture deal with three main players: the cells, tissues, and molecules of the immune system. The middle part of the lecture deal with three main players: the cells, tissues, and molecules of the immune system.

494.609 임상시험을 위한 생체 분자영상 3-3-0

In vivo Molecular Imaging for Clinical Trials

이 강좌에서는 PET, SPECT, MRI, MRS, CT 그리고 광학발광 양상을 이용한 생체분자영상의 기반을 이루고 있는 개념을 소개하고 이 생체분자영상법과 새로운 약제이용약제의 효능을 평가하는데 어떻게 사용될 수 있는지, 그리고 Tc-99m표지자 DG, GP, adenosine, guanine, nitroimidazole, annexin-V, VEGFR, taxol, gemcitabine, aripic, celebrex 등을 평가하는데 어떻게 식별할 수 있는지에 대해 논의하고자 한다.

This course is intended to provide students with the core concepts of in vivo molecular imaging including PET, SPECT, MRI, MRS, CT and optical or bioluminescence imaging as well as radiotomimmunology. It will be discussed in detail how to apply these methodology to conduct clinical trials using new radiopharmaceuticals such as Tc-99m labeled DG, GP, adenosine, guanine, nitroimidazole, annexin-V, VEGFR, taxol, gemcitabine, aripic or celebrex.

494.612 발암기전의 분자생물학 3-3-0

Molecular Mechanisms of Carcinogenesis

본 강좌는 수감생물로 하여금 단단하게 발암과정과 관련된 세포 내 생화학적 기전과 관련 최신연구 동향을 습득하게 한다. 또한 발암과정에 연관된 세포내 핵심 신호전달 물질들을 타깃으로 하는 표적치료제들의 작용 기전을 심층적으로 탐구한다.

This course is intended to provide students with the comprehensive overview of the biochemical and molecular mechanisms of multi-stage carcinogenesis and cutting-edge research related to this subject. Students will learn about the major signal transducing molecules implicated in carcinogenesis and the current anticancer and chemopreventive strategies targeting these molecules.

494.613 약물생체재료 3-3-0

Biomedical Materials

암물질재료와의 및 의료용구를 바탕하여 질병치료에 사용되는 생체재료를 학습함으로써 의약학에서 필요로 하는 기능을 이해하고 이를 증강할 수 있는 주요기반을 마련하는데 있다.

Including a drug delivery system sacrifice and the medical treatment tool and is used in disease treatment the organism material which is prepares the knowledge base this and stud-
ies with the medicine crane to understand a material role and a function will be able to apply.

494.614 Pathophysiology of Human Diseases

The purpose of this course is to provide a basis for understanding pathophysiologic mechanisms of human diseases. This course will focus on pathophysiology of common human disease such as cancer, cardiovascular disease and metabolic diseases.

494.615 Molecular Imaging for Drug Discovery

This course will promote learning cutting-edge knowledge regarding the application of molecular imaging to the field of drug discovery for evaluation of drug delivery system, efficacy or mechanism of action of tentative new drug and biospecimen. Theses research techniques are important for mentoring students for preparing for graduate study for thesis.

494.616 Regenerative Medicine and Molecular Imaging

This course will promote learning the application of molecular imaging technology to the field of regenerative medicine such as how to monitor whereabouts of stem/iPS cells, their in vivo behavior, proliferation, homing and differentiation.etc.

494.617 Molecular Tumor Biology

This class aims to understand the basic concept of tumors in terms of molecular medicine. You will study the molecular mechanism of tumor virus, and link the roles of various oncogenes (Src, Myc, Growth factors) and tumor suppressors (p53, Rb) to cellular signaling, cell cycle, and gene regulation.

494.618 Immune System Disorder

Recent advances in genomic and proteomic technologies have led a huge increase in the generation of detail genomic and proteomic data more than ever. The have been considerable efforts to disseminate and comprehend the data in the given biological conditions. The objective of this course is to introduce students to the emerging field of integrated genomics and proteomics studies in biomedical research. The topics to be discussed the current the current developments of genome sequencing and proteome techniques. The
course will also emphasize a special interest on novel annotation fields, such as that of phenotypes, and highlights the recent efforts focused on the integrating annotations. During the term, seminar speakers, with expertise in an area relevant to the subject area of the course, are invited as guest lecturers.

M0000.005100 과학논문작성기법 3-3-0

The method for writing of scientific paper

According to the principles of writing, the logical structure, and the form of scientific paper, and how to cite other researchers results while writing a paper in English or Korean. And this lecture also contains the science ethics, such as plagiarism and self-plagiarism, the determination method for the content of solid and non-solid thesis, and the introduction of the writing journal articles and dissertations for students.

M0000.011200 방사성의약품학 개론 3-3-0

Introduction of Radiopharmaceutical Sciences

Radiopharmaceutical is a pharmaceutical which is labeled by radioisotope, and has been used for diagnosis or therapy of certain diseases. This class will cover the introduction of radiopharmaceutical and its'production method, and application, and also the method for diagnosis or therapy of certain diseases using radiopharmaceuticals. And this class will contain the synthesis and radiolabeling method for radiopharmaceuticals, and quality control of radiopharmaceuticals.

M1605.000200 최근 오믹스 연구 특론 3-3-0

Topics of Current OMICS Research

The advent of genomics and proteomics technologies have facilitated basic, clinical, and translational research. The purpose of this course is to expose students to a broad range of current research topics in OMICS-based research and related fields. More specifically providing students with key tools and frameworks that have been implemented to various basic, clinical, translational research. This course consists of seminars, which will be presented by eminent researchers in the field.
Mathematical Cryptography

Digital forensic deals with digital evidence which consists of digital documents and data. Since these are digitally saved as disguised or encrypted files, knowledge on cryptography is essential to analyze and recover them. To this end, we first study mathematical bases for modern cryptography, which include elementary number theory, discrete mathematics, and probability. After that, we introduce basic concept of cryptography, various existing crypto-systems and their encryption/decryption algorithms, complexity, security, strengths and weaknesses. We discuss symmetric-key cryptography, public-key cryptography, hash functions, and digital signature schemes to name a few.

496.504 디지털 포렌식 3-3-0

Introduction to Digital Forensics

This course is an introduction to digital forensics. This course includes computer and networking concepts, legal issues involving digital forensics, digital forensic procedures, digital forensics tools, digital evidence collection, and digital evidence analysis technologies.

496.502 컴퓨터학 3-3-0

Introduction to Computer Science

Computer and software systems are designed, how the mathematical concept is realized by electrical engineers, and principles of software construction.

496.501 수리암호 3-3-0

Introduction to Software and System Security

This subject aims at researching the theories and practices of the preservation, identification and analysis of computer based evidence stored in the form of magnetically encoded information. This course includes computer and networking concepts, legal issues involving digital forensics, digital forensic procedures, digital forensics tools, digital evidence collection, and digital evidence analysis technologies.
cally encoded information on various devices and media. And This course offers special lectures of the related field experts on digital forensics tools, digital forensic procedures, digital forensic analysis, information security, cyber crimes, and legal issues involving digital forensics.

496.701 Anti-Forensics

Digital forensics is a process of detecting, analyzing, and presenting digital evidence for legal purposes. This course deals with methods of cryptanalysis necessary to analyze encrypted digital evidences in the process of digital forensics. Since integrity is essential for digital data to be accepted as evidence in court, this course covers cryptographic tools for data integrity. Under the cloud computing environment a variety of cryptosystems equipped with new functional properties is being developed rapidly. Thus this course helps students prepare for digital forensics of new cryptographic technology.

496.702 Mathematical Information Sciences

The aim of this course is to grasp the state of art in fields such as mathematics, computer science, law, and sociology which are related to digital forensics. The course will consist of lectures by faculty members and external specialists in the fields.

496.703 Topics in Digital Forensics

This course offers special lectures of the related field experts on digital forensics tools, digital forensic procedures, digital forensic analysis, information security, cyber crimes, and legal issues involving digital forensics.

496.803 Dissertation Research

Research and Seminar for thesis writing

M0000.006200 Law on Information Protection

This subject aims at researching the theories and practices in the field of laws on information protection. The digital evidence can violate individual’s right of privacy, which need to make a compromise with protection of information. This subject deals with several legal issues related to the conflict of two public interests.
Graduate School of
International Agricultural Technology
Research is important to discover new finding or concept. Research results should be documented and published without fabrication, falsification and plagiarism. Indeed, research experiments with animal or human derived tissue or cells are subject to the observance of the related research ethics. This course is intended to give practical information for ethical issues in research associated with an approval from IACUC and/or IRB.

M2868.000200 실험통계학 3-3-0

Experimental Statistics

The course presents the basic theory of economic development with an emphasis on international agricultural development. It also discusses issues of recent agricultural cooperation in the context of MDGs, Post-2015 development agenda, aid effectiveness, development effectiveness, aid for trade, untied aid, public and private cooperation so that students become more familiar with international agricultural development. Korea’s experience of agricultural investment in foreign country will be discussed for understanding Korea’s food security issues in the global society.

M2868.000500 국제농산물 가공학 3-3-0

Applied Agricultural Food Processing in International Agriculture

In order to develop present livestock industry being future-sustainable, in which pursues harmonization between productivity and conservation of natural environment, it is inevitable to establish concrete plans for realization of eco-friendly livestock industry. To incubate competent human resources who could draw future-development of livestock industry, this course will be proceeded by professors in livestock production technology track with collaborative lectures, and deal with issues such as importance of environmental conservation, definition, policies, social systems, research and technology development, and international cases for realization of eco-friendly livestock industry.

M2868.000600 종자생명공학특강 3-3-0

Topics in Seed Biotechnology

Understanding of agricultural and food processing industry related to the developmental foreign countries and discuss the direction and application of technology trends related. This subject supports educational opportunities related to food systems, sustainability, food processing, food safety and industrialization. These subject teaches practical, hands-on techniques in diversified agriculture ranging from vegetable, fruit and berry production to dairy herd management to technical skills such as meat-cutting and welding.
of animal feeds, students will learn various techniques and how to monitor carefully the complex process of feed manufacturing.

M2867.000200 단위동물 사료가치평가학 3-2-2

Feed Evaluation for Monogastric Animals

본 교과목은 학생들에게 단위동물 사료내 이용가능한 영양소 함량을 정확하게 평가할 수 있도록 도와 줄니다. 최근 여러 가지 사료가치 평가 방법에서 이루어진 기술혁신을 소개하고 이 가운데는 in-vitro 소화율, 아미노산 생체이용율, 내생아미노산 손실 등의 측정방법을 소개하고 있습니다. 또한 경제동물, 특히 단위동물에게 이용 가능한 원료사료 내 에너지함량을 정확하게 측정하여 사료배합비 산정에 적용하도록 돕고 있습니다.

This course is designed to enable students to evaluate accurately the available nutrient content of animal feeds. Several recent technical innovations are also introduced by new assays for determining in-vitro digestibility, bio-available amino acids, endogenous amino acid losses. Energy value of raw feed ingredients for monogastric animals will be presented by advanced feed evaluation sciences and technologies for further understanding and application for the accurate formulation of mixed diets.

M2868.000800 유가공 및 낙농미생물학 특강 3-3-0

Topics in Dairy Technology and Microbiology

To introduce the current agricultural technologies and strategies at local, national, and global levels to increase productivity in agricultural area. It includes an introduction to co-friendly farmland development, agricultural watershed management, agricultural water supply, integrated water resource management, facilities for agricultural productions, and sustainable agriculture. Students acquire techniques, agricultural policy, and development plan considering country characteristics in income level, climate, social and environmental conditions.

M2868.006700 대학원논문연구 3-3-0

Dissertation Research

This course introduces the basic theories and practices in molecular genetics, biochemistry and molecular physiology. Through this, students will be able to develop genetically modified crops and excellent biotech seeds of the future.

M2868.000900 프로바이오틱스와 장내생물학 특강 3-3-0

Topics in Probiotics and Microbiota

Bio-Animal Feed Science & Technology

본 교과목은 학생들에게 경제동물 사료가치 평가학을 이해할 수 있도록 도와 줄입니다. 이에 앞서 기초학문의 개념을 바탕으로 단위동물 사료가치 평가학의 주요 주제와 그 효과를 강의하고자 한다. 특히 단위동물 사료가치 평가학은 학생들에게 단위동물 사료가치 평가학의 주요 주제와 그 효과를 강의하고자 한다.

This course is designed to transfer the main practical aspects of feed science and technology to students. This course includes introductory practical aspects of feed formulating, production, quality and safety control of animal feeds. In order to increase the feeding, handling and palatability value

M2867.000100 바이오사료공학 3-0-6

Bio-Animal Feed Science & Technology

본 교과목은 경제동물 사료가치 평가학의 핵심 주제에 접목시킬 수 있도록 탐구한다. 경제동물 사료가치 평가학에서는 다양한 사료가 측정방법을 소개하고, 이를 여러 국가에 적용할 수 있는 방안에 대해 소개하는 과목이다. 국가별 소득수준 및 기상기후, 특성 등 다양한 사료가 측정방법을 소개하고, 이를 여러 국가에 적용할 수 있는 방안에 대해 소개하는 과목이다. 국가별 소득수준 및 기상기후, 특성 등 다양한 사료가 측정방법을 소개하고, 이를 여러 국가에 적용할 수 있는 방안에 대해 소개하는 과목이다.
gut; the importance of the microbial balance in the human health; the concept, selection criteria, and production technology of probiotic strains. In addition, the mechanisms of cross-talk between host cell and microbial cell in the gut will be lectured.

**M2868.001000 유제품의 기능성학 특강 3-3-0**

Topics in Functionalities of Dairy Products

Milk is called an almost perfect food due to its nutritional value, not only the absolute amount of nutrients but also the balance among them. There are some important functional ingredients in milk, which are showing some health promoting effects upon ingestion. There are several milk components such as oligosaccharide with bifidogenic factor, milk peptide with blood pressure lowering effect, CPP with enhancement of calcium absorption, and lactoferrin with antibacterial activity. There are several milk components which are showing some health promoting effects upon ingestion. There are several milk components such as oligosaccharide with bifidogenic factor, milk peptide with blood pressure lowering effect, CPP with enhancement of calcium absorption, and lactoferrin with antibacterial activity. This course will cover the types of functional ingredients in milk, the underlying mechanisms of the functionality, and technological aspects on the development of functional dairy products.

**M2868.001100 반추가축 영양소 분배학 3-2-2**

Nutrient Partitioning of Ruminants

Grassland has always played an important role in agricultural development by extending man’s food supply to area where crops cannot be grown for direct human consumption. Grassland includes both pastureland and rangeland that is where crops cannot be grown for direct human consumption. This course will deal with pasture ecology in relation to climate and provides the management techniques of improving pasture condition and production of pasture and duration.
Forage Production and Utilization

Forage has important meaning as fundamental nutrient source of ruminants. Within a particular community or area of the world, the basic forage production resources may be quite similar on many farm. Yet, there are many differences in the levels of production, efficiency, and profitability of forage/livestock programs. Actually, many factors influence the success of forage production and utilization. There is no one plan that fits all forage production and utilization situation. Prior to making forage plantings, many factors need to be considered, including; soil, topography, availability of capital, labor.

This course intends to give an overview of various grasses species using whole world and increment of understanding currently and processing techniques, providing a current and forage livestock market.

Biotechnology Application in Livestock Industry

'Biotechnology' is an applicable study to develop more economical and efficient ways for production of valuable bio-resources which contribute in human life by using the veiled rules under the mechanism of life. In this aspect, the aims of this course is learning of various knowledges in biotechnology field such as genetic recombination technique and unimel cell culture technique for production and purification of functional proteins on the basis of molecular biology and cell biology, and also exploring the methodologies to improve productivity of livestock industry and to develop highly valuable stock farm products by application of the biotechnology.
will have knowledge for disease control and preventive strategy.

M2868,006200 경제동물산업기술 인턴십 3-0-6

Internship in Livestock Industry and Biotechnology

경제동물산업기술 관련 정부 및 민간기관으로부터 필요한 연구 자료를 수집하고 해당 기관에서 인턴십을 통하여 전환조직기술의 실무경험을 습득하도록 한다.

Research materials from private and government institutions will be given to students through an internship program. This will expose the students in a practical experience in eco-friendly livestock technology.

M2868,007000 유기공산 삽습 3-0-6

Practice on Dairy Industry

유기공산기술혁신, 소재기술 개발 동향을 비롯으로, 유가공산 업 발전과 미래 제품 개발 동향에 대하여 강의 하고자 한다. 개발된 기술의 이론을 바탕으로 우유생산, 살균, 간질, 건조, 발효, 녹색, 위생관리, 품질관리, 가공, 비료 등의 유가공 산업 현장에 이해할 수 있는 실습을 통해 습득함으로 한다. 이 실습을 통하여 유가공공정 중에 필요한 유산균, 탄력성, 품질, 미생물의 변화를 체계적으로 경험하게 되고, 습득한 지식을 활용하여 연구주제를 설정하고, 연구기술을 획득하는 방법을 교육하고 실습한다.

This lecture will introduce development trends of milk processing industry and prospective products in the near future, based upon innovative technologies of milk processing industry and development trends of ingredient technologies. Along with the theory of developed technologies, this course will help students to understand industries of milk processing by including laboratory exercises commonly used for milk production, sterilization, homogenization, drying, concentration, fermentation, aging, hygiene management, storage technologies, and microbes management, etc. The laboratory works will enable students to experience systematically the changes of milk composition, characteristics, flavor, and microbes profile through the milk processing, which eventually guides students to design the research theme and to obtain the appropriate research technologies.

M2868,001900 유전자변형 모델동물학 3-3-0

Genetically Engineered Animal Model

Recently, genetically engineered animal models were used to study human diseases, as they closely resemble human biology. This course will introduce the basic concept of genetically engineered animals (rodent, pig, and non-human primate) in the biomedical field, including their potential applications in xenotransplantation. This course aims to provide an overview of the applications of genetically engineered animals in new drug development, efficacy evaluation, and the ethical implications of using genetically modified domestic animals and small animals in biomedical research.

M2868,002000 국제 예방수의학 3-3-0

Global Preventive Veterinary Medicine

The course aims to introduce students to the principles and practice of prevention and control of diseases in livestock, focusing on the development of strategies to reduce the risk of disease transmission. The course will cover topics such as disease surveillance, disease control and prevention, disease eradication, and the economic impact of animal diseases.

M2868,007100 축산소재개발특강 3-3-0

Topics in development of Animal biomaterials

This course will introduce students to the concept of animal biomaterials and their application in the development of new materials for medical and industrial purposes. The course will cover topics such as the biological and mechanical properties of animal tissues, the processing of animal biomaterials, and the application of animal biomaterials in the development of new materials for medical and industrial purposes.
as a future-sustainable business, promotion of its productivity and stable supply of highly qualified and functional livestock products trusted by consumers are important issues. The aim of this lecture is to raise human resources who possess capability to develop and utilize functional biomaterials by learning not only basic knowledge about digestive physiology and nutritional metabolism of major nutrients (carbohydrates, lipids, and proteins) and microorganism resources as important bioresources in livestock industry, but also the newest research trends and associated technologies through the review of international case studies.

**M2868,007200**
**Case studies in Animal Biotechnology**

Biotechnology is an applied science which pursue production of useful bioresources by efficient way with application of the rule of biology. The livestock science is corresponding with the biotechnology in the aspect that its goal is also to develop technologies which enable efficient production of useful livestock products. Recently, various efforts have been made to improve productivity and to develop highly valuable livestock products by combination of conventional livestock science with biotechnology. The aim of this lecture is to raise human resources who possess future vision in livestock industry fields by learning the newest research trends and associated technologies about application of biotechnology in livestock industry through the review of international research papers and case studies.

**M2868,007300**
**Design and methodology of experiments with ruminant**

Forage is essential feed for herbivores and approximately 5.6 million tons are being used every year. But about one million ton of forage was imported from oversea. The self-sufficiency of high quality forage was below 45% due to the decrement the production bases and utilization of rice straw. The course will deal with methodology of forage production research to find ways of applying advanced concepts in production systems under differing environmental conditions within countries. Students will study the differences in feed resources and low cost of production system employed in developing countries compared to developed countries.

**M2868,007400**
**Seminar on tropical ruminants feed management**

Developed countries are in general, have severe constraints on feed availability. In addition to poor nutrition, adverse climate and stresses are also general high, particularly in those countries situated in the tropics. These contracts are likely to affect and often remove any advantages of advanced and innovative feeding strategy and its practical application has failed to produce the expected outcomes because there has been little recognition of practical condition of ruminant in developing country. Therefore, great need is for research to find ways of applying advanced concepts in production systems under differing environmental conditions within countries. Students will study the differences in feed resources and low cost of production system employed in developing countries compared to developed countries.
Forage is edible parts of plant that provide feed for ruminant. The functions of forage are nutrients supply, rumen development, preventing the metabolic disorder and promotion of salivary secretion of ruminant. Every year, approximately 560 million tons of forage are being used in Korea. But, forage production bases are vulnerable, pasture and upland are decreased gradually. This course intends to give an overview of the various species and characteristics of forage. The course will deal with forage production, processing and utilization technology, providing a deeper understanding of forage for students planning to pursue forage studies.

Topics in Poultry Industry

- Poultry Genomics and Breeding
- Middle size laboratory animal model

Poultry is the domesticated birds such as chicken, duck and quails and also the primary protein resource as a food source consuming both their meat and eggs. There are more chickens in the world than any other species of bird and quails are usually used as source consuming both their meat and eggs. There are more chickens in the world than any other species of bird and quails are usually used as source consuming both their meat and eggs.

Middle size animal such as pig, dog and nonhuman primates have advantage due to its high genetic similarity with human being than rodents. So midsize animals are widely used for human disease with genetic disorder. Student will learn about characters of middle size animal for animal experiment design with middle size laboratory animal model. The aim of this course is understanding the rodent model for cancer, metabolism, immune disease and other diseases.
M2868.008300 Applied Animal Nutrition

Applied Animal Nutrition

Comparative physiology of digestion among animal species will be provided. The unique physiological mechanisms for optimized digestion of each species will be presented by the diversity among them. Physiological changes and requirements on digestion efficiency will be explored. Overall domestic species will provide background and examples of different physiology of digestion for each stage of growth.

M2867.003000 Topics in Livestock Industry and Biotechnology

Topics in Livestock Industry and Biotechnology

This course is designed to provide students with an opportunity to learn specific aspects of animal nutrition and to promote in-depth application of the different nutritional aspects including digestive physiology and metabolism of domestic animals in (semi)-tropical areas. Nutrient requirements for different aspects of monogastric animal production will be explored. The unique physiological mechanisms for each species will be presented by the experts in each livestock industry. Through this course, students will understand the current technologies based on the animal farm field.

M2867.000800 Topics in Regulatory Toxicology

Topics in Regulatory Toxicology

This course is designed to provide students with an opportunity to learn specific aspects of animal nutrition and to promote in-depth application of the different nutritional aspects including digestive physiology and metabolism of domestic animals in (semi)-tropical areas. Nutrient requirements for different aspects of monogastric animal production will be explored. The unique physiological mechanisms for each species will be presented by the experts in each livestock industry. Through this course, students will understand the current technologies based on the animal farm field.
and in vitro maturation, fertilization, and development of oocytes/embryos, and 2) the recent research trends such as pre-implantation genetic diagnosis, somatic cell cloning, embryonic stem cell and cytoplasmic replacement. This provides basic knowledge and prospects for students who want to major in reproductive physiology.

**M2867.002000** 세포분화특강 3-3-0

**Topics in Cellular Differentiation**

본 교과목은 세포의 분화 발생에 대한 이론을 기초로 해체성 및 나이성 세포의 근본적 치료법과 가축의 재배열식 환경을 위한 이론적 근거를 제시하고 있다. 이 강의는 유전자의 전사적 조절에 기반한 지방, 근육, 간, 체장, 혈관, 조직, 혈액 및 염증의 주요 세포 및 조직의 분화과정을 이해하고, 유전자학 및 약물학의 제어를 통한 세포생물학의 연구기술을 살펴본다. 이를 통하여 학부 과정 중 습득한 세포생물학 및 발병학을 심화하고, 재생생물학을 전공하고자 하는 학생들에게 응용 기술과 전략을 제시한다.

This course is based on the understanding of the differentiation and development of cells and suggests the fundamental role of the treatment of degenerative and intractable human diseases and the rationale for improving the economic traits of livestock. This lecture aims to understand the differentiation process of major cells and tissues such as fat, muscle, liver, pancreas, blood vessels, blood cells, and cancer cells based on the gene regulatory circuits and to overview the research trends in pharmacological and genetic control of the processes. This deepens cell and developmental biology acquired during undergraduate courses and presents applied knowledge and prospect to students who want to major in regenerative biology.

**M2867.003200** 세포간 생물정보교환 3-3-0

**Intercellular Communication**

본 교과목은 최근 질병 바이오마커 및 질환치료제로서 그 가치를 높게 평가받고 있는 미세소포에 의한 세포간 신호전달을 학습하는 것을 목표로 한다. 구체적으로, 인체 모든 세포는 특정 환경에서 미세소포를 방출하여 조직이나 장기에 직접적인 영향을 미칠 뿐만 아니라, 다양한 질환치료제로서 임상학적 적용가능성이 있음을 밝혀지고 있다. 이에 본 강의에서는 미세소포의 종류와 기능, 구성성분과 역할, 그리고 의학 및 생물정보학의 응용방향에 대하여 학습하고자 한다.

This course is to understand the biology of extracellular vesicles (EVs), which have been an increasing interest in various scientific communities because of their potential role in disease biomarker and therapeutics. More specifically, most of human cells release EVs in certain physiological conditions and contributes to changing the biology of nearby or remote organs in various mechanisms. Also, the possibility of EVs as novel therapeutic measurement is being increased. In this class several topics including the types and function of EVs, their composition and kinetics, and future application in medicine and livestock industries will be covered.

**M2867.003300** 영장류실험동물학 3-3-0

**Laboratory Nonhuman Primate Biology**

본 교과목은 인간 질환 발생 기전을 규명하고 각종 치료법 연구 목적의 실험 모델로 사용하고 있는 영장류의 특징과 적용범위를 습득하는 것을 목표로 한다. 영장류는 최근 다양한 바이오의료 기술 개발 연구가 활발히 진행되면서 임상적 적용을 위한 최상의 원동 모델로 인정받고 있으며 그 수요는 계속 증가함으로 예상되고 있다. 이에 본 강의에서는 실험동물 영장류의 기본 특징을 이해하며 다양한 분야에서 사용되는 영장류 실험의 개념을 익히는 것을 목표로 한다.

This course is to understand the biology of nonhuman primates (NHPs), which is currently being used in various research areas including identifying the mechanism of disease pathophysiology and developing therapeutics. More importantly, the number of NHPs is reported to be increased due to the recent progress in novel biomedical studies. Accordingly, this class will be setup to provide students with various aspects of the traits of NHPs and their role in current biomedical studies.
Topics in Industrial Fermentation of International Agricultural Foods and Practice

The subject will include various aspect of production technology, microbiology, and chemistry (including the compositional chemistry, flavor chemistry, and chemistry of aging) of various fermented and distilled beverages and foods. Based on the fundamental information about food materials and fermentation process, students will develop new subjects related with food industry and prepare proposal for research thereof.

Special Issues on Bio Food Industry and Practice I

Sustainable land and livestock agriculture is the largest single industry on the planet, contributing to the livelihood of billions of people. This class will cover the latest research and advances in sustainable land and livestock agriculture, including topics such as integrated crop and livestock systems, sustainable livestock production, and sustainable land management.

Special Issues on Bio Food Industry and Practice II

This lecture will give on innovative issues on convergence agro-food industrial technology. This class will include lectures and exercises commonly used in basic and applied research in food enzymology. Regular discussions of recent peer-reviewed papers dealing with major classes of enzymes related with carbohydrate metabolism will also be included. Based on the fundamental information about carbohydrates and related enzymes, students will develop new subjects related with food industry and prepare proposal for research thereof.

Topics in Functionality of International Agricultural Products

The course will cover topics such as food chemistry, food microbiology, nutrition, food processing, and food engineering. Students will be introduced to the latest research and developments in these fields and will be encouraged to think creatively and critically about how to apply this knowledge to real-world problems.
The course focuses on the vast array of applications in food biotechnology. Lectures will cover the fundamentals of bacterial genetics and techniques for the application of food industry as well as the role of microbiology in foods, agriculture, and the environment. The theory, practice, and the importance of food biotechnology in these areas are explored through microbiology, enzymology and carbohydrate biotechnology. Course objectives are introducing the student to new era of biotechnology, familiarizing the student of the scale-up process. At the end of lecture students will have a basic understanding of the scientific method, will have the opportunity to practice thinking critically and analytically and reason logically using current information and past experiences. Students will gain experience in effective communication skills by practicing, listening, reading, writing and speaking clearly.

M2868.006300 바이오식품산업 인턴십 3-0-6

Internship in Bio-Food Industry

바이오식품산업 관련 정부 및 민간기관으로부터 필요한 연구자료를 수집하고 해당 기관에서 인턴십을 통하여 바이오식품산업의 산업경향을 습득하도록 한다.

Research materials from private and government institutions will be given to students through an internship program. This will expose the students in a practical experience.

M2868.006900 축산·식품 산업 현장의 이해 Ⅱ 3-3-0

Current Issues and Perspectives on Livestock·Foods Industry Ⅱ

본 강좌는 학생들에게 다양한 식품, 축산생명공학 분야의 간접 경험을 할 수 있도록 하며, 현장에서 실제로 적용하고 적용하기 위한 준비를 위한 강좌이다. 본 강좌는 식품, 축산산업현장의 다양한 전문가들을 초청하고, 현장실습을 통하여 직접, 간접체험을 많이 할 수 있도록 구성될 것이다. 학생들은 본 강좌를 통하여 식품, 축산생명공학분야의 국내외 경향을 파악할 수 있고, 이는 미래의 산업 경향을 예측하는데 있어서 핵심적인 역할을 할 수 있도록 도와진다. 본 강좌의 내용은 식품, 축산생명공학분야의 커리어를 위한 준비과정, 이 분야의 현장 교육 내용과 현장에서 필요한 준비 사항, 인터뷰 스킬, 그리고 식품, 축산생명공학 산업과 유통 분야에서의 미래 경향에 대한 전문가들의 경험을 많이 듣고 있다. 학생들은 강의 중에 식품, 축산 생명공학분야의 최신의 이슈에 대한 볼 수 있는 구두 발표를 통하여 팀과의 소통의 기술도 습득할 것이다.

This course is intended to prepare students for careers in livestock·foods biotechnology. The course will feature speakers from the livestock·foods biotechnology industry and field trips to livestock·foods biotechnology laboratories. Students will learn research of domestic and international livestock·foods biotechnology companies and identify local and national trends in livestock·foods biotechnology employment. The potential topics will include overview of careers and career paths in livestock·foods biotechnology, overview of livestock·foods biotechnology industry and education in the region, job search and interviewing skills, current and future trends in livestock·foods biotechnology industry and employment. Short oral presentations of 5-8 minutes will be required of all students and will be given during a class period. Students will pick a livestock·foods biotechnology topic and discuss specific issues related to the topic.

M2868.008400 식품 생물리학 특강 3-3-0

Topics in Food Biophysics

식품과 생물공정에 수반되는 다양한 생물리학적 현상의 원리와 생물고분자의 물리화학적 특성을 이해하고 분석하기 위한 원리와 방법을 다룬다. 분자영역, 고분자 용액, 수력학, 유변학, 확산, 표면현상, 식품 분산체 등에 대한 주요 원리를 바탕하여 분광법, 동적광산란, 시추자결합법, 등온적정량법 등 다양한 생물리학적 분석방법의 원리와 적용방법에 대한 내용을 소개한다.

This course is designed to provide fundamental understanding on the biophysical phenomena occurring during food and biological processes. The course will introduce key principles on molecular thermodynamics, polymer solution, hydrodynamics, rheology, diffusion, surface phenomena, food dispersion system, etc., as well as important biophysical methodologies, such as spectrophotometry, dynamic light scattering, differential scanning calorimetry, isothermal titration calorimetry, etc.

M2868.008500 식품 인캡슐레이션 3-3-0

Food Encapsulation

식품산업과 농업 등에서 상용화되었거나 연구되고 있는 다양한 나노, 마이크로, 매크로 인캡슐레이션 기술의 원리와 응용범위를 실습을 들어 소개하고, 인캡슐레이션 기술을 이용한 식품 기능성 소재의 안정화 및 고부가화를 통하여 새로운 형태의 건강 저항력, 소비자 맞춤형 식품을 다자이방하고 즐길 수 있는 식문화를 이루어 가는 전략에 대하여 토의한다.

This course attempts to illustrate various aspects of nano-, micro-, and macro-encapsulation technologies in food and agricultural industries using practical examples. These examples will provide an appreciation for the delicate art of designing encapsulated food ingredients and the enormous challenges in incorporating them into food structure for designing high-value added, consumer-demand food products.

M2867.001000 식품 플로이드학 3-3-0

Food Colloid Science

식품 다중계를 구성하는 플로이드에 대한 이해는 식품의 맛, 조직감, 유통기한 등의 조건뿐만 아니라 특수성을 가진 새로운 식품 구조개발에 필수적이다. 본 교과목에서는 플로이드의 특성과 응용에 게제에서 바이오플로이드 및 입자와 이러한 연관성을 갖는 것 몬스터시스템 특성, 표면현상, 플로이드 상호작용, 액체 분산 시스템 특성 등에 관한 물리화학, 소재공학 및 연성과학의 기본 개념을 이해하여 소개한다.

Understanding of food colloids comprising multiphase food systems is important to control of the taste, texture, and shelf-life of existing foods, and to formulate new products of high functionalities. This course is designed to introduce how the properties of colloidal systems are related to the interactions between the constituent macromolecules and particles, both in bulk solution and at interfaces using the fundamental concepts of physical chemistry, material science and soft matter physics on dispersed systems, surface phenomena, colloidal interactions, and liquid dispersions.
Topics in Food Biogels

Understanding of food biogels comprising the basis of food structure is important in food processing, preservation, and new product development. This course is designed to introduce the fundamental relationship between viscoelastic properties and microstructure of food biogels and its applications to food industry using physicochemical principles on the formation and stabilization of not only common networked biogels but also gel particulates, so-called microgels and nanogels.

Topics in Food Industrial Microbiology

This course is designated to understand and apply various food industry microbial production processes used in the food industry. This course will cover basic concepts of molecular microbiology, biotechnology and biochemistry found in food industry microbial production processes as well as the latest research topics in microbial metabolic engineering, genome engineering, and synthetic biology. In addition, we will introduce production of medicinal food materials harnessing food industrial microbes, and utilization of food microbes as probiotics for controlling the intestinal environment.
중자생명기술
M2867.000500 식물군동방어기작특강 3-3-0

Topics in Plant Defense Mechanisms against Insects

식물은 고착 생물로서 다양한 환경 및 생물 스트레스로부터 생존하기 위해 여러 전략을 발전시켰다. 이 교과목은 공통에 대한 식물의 다양한 생존 전략을 살펴보는 것을 내용으로 한다. 식물에 노출된, 호르몬, 신호 전달, 이차대사물질 등을 얻어내면서, 공통 적응성과 관련된 식물 공학을 연구하는 학생에게 식물 공학에서 기각에 대한 이해도를 높이시기 바란다.

Since plants are sessile organisms, they have developed special strategy to survive from abiotic and biotic stresses. This course will deal with various categories of genetics for a deeper understanding of plant defense mechanisms against insects for students planning to pursue plant engineering against insects.

M2867.000600 작물유전학특강 3-3-0

Topics in Crop Genetics

유전학은 생명의 유전 현상과 유전자 다양성을 다루는 분야로 전화 과정에서 유전자 기능과 역할을 탐구하고 유전체와 대량의 생물 정보를 연구하는 학문이다. 이 교과목에서는 유전학의 다양한 분야를 살펴보며, 유전체학의 이해를 높이고, 유전학적 통합 및 생물학적 통합을 위한 학습의 기여를 하고자 한다.

Genetics is the study of heredity and genetic diversity in living organisms. Moreover, modern genetics has expanded beyond inheritance to study the function and role of individual genes during evolution and investigate the whole genome and high-throughput biological data. This course will deal with various categories of genetics for a deeper understanding and introduce the impact of genetic knowledge on agriculture, particularly research trends and prospects of crop improvement through techniques of genetic engineering.

M2867.000700 작물RNA생물학특강 3-3-0

Topics in RNA Biology of Crops

RNA생물학은 생명 현상 조절의 중추적인 역할을 하는 세포 내 다양한 RNA의 존재, 생합성 과정, 조절 기전 및 역할을 다루는 학문 분야이다. 본 강의에서는 비러 RNA생물학의 다양한 분야를 살펴보며, 학생들의 이해를 높이고, 특히 생명공학 기법을 통한 작물의 품종 개발 연구를 진행할 수 있도록 준비하고자 한다.

RNA biology is the study of diverse RNA species, biosynthetic process, regulatory mechanism and role which play pivotal roles in controlling biological phenomena. This course will deal with various categories of RNA biology for a deeper understanding and introduce its possibilities of application and prospects for crop improvement in agriculture.

M2868.003300 국제작물학과학 최신이슈 3-3-0

International Issues in Crop Science

급변하는 세계기후와 기학구조적으로 자가하는 인구증가에 따라 세계 식량문제는 현재 적절한 가중 큰 문제이다. 본 수업은 인구의 증가와 기후변화, 산업화에 따른 경제적 감소에 따른 새로운 작물개발연구의 필요성에 대해 소개하는 교과목으로서 작물과학과 관련된 내용을 기초로 진행한다. 최신기술을 이용한 작물연구 및 기술이 연구에 대한 국제정세, 기후변화에 대한 채간 형별 작물 재배 및 개발, 생태학적 돌파소에 대해 학습한다.

Learning the cultivation models and being aware of latest technologies applied around the globe are necessary for students studying crop science. This course will introduce crop-related science, international affairs, climate change and recent developments in cropping patterns.

M2868.003400 국제농업시스템생물학 3-3-0

Global Agricultural System Biology

본 수업은 인구 증가와 기후 변화에 대한 세계 정세를 다루며, 생물학, 분자생물학 등 이론을 바탕으로 생명공학 작물 개발 연구주제를 정하고 이에 따른 실습을 통하여 생명공학 작물개발 연구방법을 익히도록 하는 목적의 실습과목으로 중산생명과학에 관련된 연구에 필요한 여러 가지 실험방법, 관련기술을 익히고 습득하여 실제로 연구를 수행할 수 있도록 연구계획을 세우고 이를 바탕으로 연구실에서 직접 실험을 진행한다.

한국작물과학, 생화학, 분자생물학 등 이론을 바탕으로 생명공학 작물 개발 연구주제를 정하고 이에 따른 실습을 통하여 생명공학 작물개발 연구방법을 익히도록 하는 목적의 실습과목으로 중산생명공학에 관련된 연구에 필요한 여러 가지 실험방법, 관련기술을 익히고 습득하여 실제로 연구를 수행할 수 있도록 연구계획을 세우고 이를 바탕으로 연구실에서 직접 실험을 진행한다.

Understand experimental designs and methods in seed biotechnology using state-of-the-art technology. Learn and apply unique modes of research for the development of genetically modified crops.

M2868.003500 중산생명공학연구 방법론 I 3-0-6

Seed Biotechnology Research Methods I

본 수업은 인구 증가와 기후 변화에 대한 세계 정세를 다루며, 생물학, 분자생물학 등 이론을 바탕으로 생명공학 작물 개발 연구주제를 정하고 이에 따른 실습을 통하여 생명공학 작물개발 연구방법을 익히도록 하는 목적의 실습과목으로 중산생명공학에 관련된 연구에 필요한 여러 가지 실험방법, 관련기술을 익히고 습득하여 실제로 연구를 수행할 수 있도록 연구계획을 세우고 이를 바탕으로 연구실에서 직접 실험을 진행한다.

Understand experimental designs and methods in seed biotechnology using state-of-the-art technology. Learn and apply unique modes of research for the development of genetically modified crops.

M2868.003600 중산생명공학연구 방법론 II 3-0-6

Seed Biotechnology Research Methods II

본 수업은 인구 증가와 기후 변화에 대한 세계 정세를 다루며, 생물학, 분자생물학 등 이론을 바탕으로 생명공학 작물 개발 연구주제를 정하고 이에 따른 실습을 통하여 생명공학 작물개발 연구방법을 익히도록 하는 목적의 실습과목으로 중산생명공학에 관련된 연구에 필요한 여러 가지 실험방법, 관련기술을 익히고 습득하여 실제로 연구를 수행할 수 있도록 연구계획을 세우고 이를 바탕으로 연구실에서 직접 실험을 진행한다.

Understand experimental designs and methods in seed biotechnology using state-of-the-art technology. Learn and apply unique modes of research for the development of genetically modified crops.
Crop Ecology and Physiology

Students will learn and understand basic concepts and principles in seed biotechnology research, including plant growth hormones, flowering, and fruiting specifically. This course will also discuss about optics, physiology, dormancy, nutritional physiology, metabolism, climate change. This course intends to discuss the relevance of the course and how it can be applied on the cultivation of crops.

Recent Advances in Molecular Breeding

This course is designed to provide students with a comprehensive understanding of recent developments in molecular breeding technology. Students will gain knowledge on the Omics technology in agriculture and advances in genomics, including DNA replication, gene structure, transcriptional regulation and protein synthesis.

Seminar on Seed Biotechnology I

This seminar focuses on the latest research topics and prospective studies in seed biotechnology. Students will be introduced to the latest research on seeds and plants, including the latest research on crops and seed physiology.

Seminar on Seed Biotechnology II

The seminar will cover the latest research in seed biotechnology and industrialization through presentation and discussion. Students will study recent technologies and theories for their research paper through active discussion and presentation.

Internship in Global Seed Biotechnology

This internship is designed to provide students with practical experience in the global seed biotechnology industry. Students will work with industry professionals to develop and implement research programs.

Topics in Crop Molecular Biology

This course deals with DNA replication, gene structure, transcriptional regulation and protein synthesis. Students will gain knowledge on the latest research in molecular biology and the latest research in molecular biology which is the basis of crop genetic engineering.

Topics in Molecular Plant-Microbe Interactions

This course is designed to give an overview of various aspects of molecular biology and pathology of plant microbes and plant defense mechanisms. This course intends to give an overview of various aspects of molecular biology and pathology of plant microbes and plant defense mechanisms.
Virus diseases cause severe damage to crop productivity. Currently, prevention of virus spread based on rapid diagnosis is the best way to control virus diseases because no chemicals have been developed for control of virus diseases. This course intends to give an overview of molecular and pathological characteristics of plant hosts. Practical training consists of survey and collection of virus-infected samples from crop fields, isolation and identification of causal viruses, and pathological and molecular genetic characterization of identified viruses.

**M2867.001800** 
**Topics in Crop Biochemistry**

This course covers the basic concepts of biochemistry, structure and function of biomolecules, mechanisms of biological reactions, and introduces the latest research in biochemistry. In particular, this course helps students understand physicochemical characteristics and metabolism of biomolecules as well as modes of action of biomolecules in crops.

**M2867.002700** 
**Crop Pathogenic Microbiology**

This course is to give an overview of crop cultivation by growing various crops for oneself in an experimental field and visiting agricultural fields. In addition, this course seeks to understand the ecological relationship of crops with biotic environmental factors such as light, temperature, soil, and water and biotic environmental factors such as pathogens and insects is very important. This course intends to learn various biotic and abiotic environmental factors that affect on seed germination and the early growth and development stages of crops and experience agricultural practices required to increase crop productivity in the early stages.

**M2867.003600** 
**Crop Agroecology and Disease Monitoring Practice II**

This course is to give an overview of crop cultivation by growing various crops for oneself in an experimental field and visiting agricultural fields. In addition, this course seeks to understand the ecological relationship of crops with biotic environmental factors such as light, temperature, soil, and water and biotic environmental factors such as pathogens and insects is very important. This course intends to learn various biotic and abiotic environmental factors that affect on seed germination and the early growth and development stages of crops and experience agricultural practices required to increase crop productivity in the early stages.

**M2867.003900** 
**Topics in Protein Biochemistry of Crops**

This course is to give an overview of crop cultivation by growing various crops for oneself in an experimental field and visiting agricultural fields. In addition, this course seeks to understand the ecological relationship of crops with biotic environmental factors such as light, temperature, soil, and water and biotic environmental factors such as pathogens and insects is very important. This course intends to learn various biotic and abiotic environmental factors that affect on seed germination and the early growth and development stages of crops and experience agricultural practices required to increase crop productivity in the early stages.
This course deals with the physico-chemical properties of proteins, protein expression and purification, protein structure and function, protein-protein interactions, post-translational modifications and proteomics, and also introduce the latest research trends and experimental techniques. Throughout the course, this aims to acquire background knowledge for research trends and experimental techniques. In particular, this deals with various regulatory mechanisms on crop proteins by post-translational modifications and also introduce the latest techniques. In particular, this deals with various regulatory mechanisms on crop proteins by post-translational modifications and also introduce the latest techniques.

M2868.004400 국제농업용수관리공학 3-2-2

International Irrigation and Drainage Systems Design

This course provides students with an understanding of principles and processes necessary to effectively manage water resources through drainage and irrigation systems as well as basic concepts of soil, water, plants, and their interaction. In this course, students will apply appropriate techniques and analysis to the effective design of both irrigation and drainage systems for agricultural and urban water resource management.
age systems. Students will also design, test, and analyze agricultural irrigation and drainage systems and their components.

In addition, both conventional and alternative approaches to effectively manage agricultural water resources through well-designed irrigation and drainage systems will be addressed.

**M2868.004500** 国際農村水系管理論理

**International Agricultural Watershed Management Engineering**

게 내 농촌유역관리공학은 농촌유역의 환경에 영향을 미치거나 영향을 받는 모든 자연환경, 토지용량계획, 기후변화 등을 통합적으로 고려하여 농촌유역환경 문제를 해결하기 위하여 정기적으로 지속가능한 방안을 공학적, 사회적, 경제적 요소를 고려하여 마련하는 학문 학문으로 농촌의 생물다양성, 생물의 환경에 대한 관리, 화학, 생물학적 현상을 이해하도록 한다. 농업 및 농촌에서의 지속가능한 간편한 유역환경관리와 계획에 필요한 과학 원리, 수학적 이론, 사회경제적 이론에 관한 기초 지식과 응용각식을 습득함으로서 향후 농촌유역유역관리 관련 분야에서 주요한 역할을 할 수 있도록 배우게 한다.

In this course, students can acquire the knowledge and specific skills necessary for the sustainable watershed management. The key contents covered in this course include 1) the introduction to the concept of watershed management, 2) the sustainable watershed approach & watershed management practices, 3) integrated watershed management, 4) watershed modeling, 5) social aspects of watershed management, 6) use of modern techniques in watershed management, 7) management of water quality, 8) storm water and flood/drought management, 9) water conservation and remediation, 10) watershed management policies and decision making.

**M2868.004600** 기후변화와 농촌공학 이슈

**Climate Change and Rural Engineering Issues**

지구온난화 및 국제적 기후변화로 국토의 기후변동성이 심화되고 국토목적 수급이 불안정해지고 있다. 이에 기후변화에 따른 농업분야 위기 극복을 위한 정책적인 체계적 대응 시스템의 구축, 탄소배출량 모니터링 및 저감, 기후변화에 적응하는 농업 대응기 슬 개방, 기후변화에 대응하는 신 소득원의 창출 등에 대한 국가별 기구변화에 대한 대응방안과 농업기반시설 운영전략 등의 대책 강화한다. 이를 통합하여 기후변화와 자연재해 속에서도 안정적인 식량 공급이 가능할 수 있도록 농업분야의 마스터플랜을 개발하기 위한 역량을 강화하고자 한다.

International crop supply and demand have been unstable due to global warming and climate change. For climate change mitigation and adaptation, an in-depth discussion with the focus on the operating strategy of agricultural infrastructure will be presented in this course including policy response on agricultural strategy, monitoring and reduction system for carbon emission, technical counterpart against climate change. Students can strengthen their capabilities for developing a masterplan on agricultural field for stable crop supply against climate change.
This course introduces the basic research concepts and their application in conducting the effective research for International Agricultural Engineering. In addition, this course will be designed to help students make the correct decisions for their own research proposals with understanding how to find the solution by using the best research design or methodology. This course will present how to effectively use practical skills by means of presenting and writing research methodology and attending the research project.

This seminar course provides how to present new thoughts and write dissertation for students in international agricultural engineering track. The purpose of this course is to develop practical skills by means of presenting and writing know-how based on research ethic. Students can understand a major field of agricultural engineering in terms of relative industries and research experiences. From topic presentation and mutual debate, students investigate research results, improvement plan, and future study related to own researches.
.cell walls - cellulose, hemicellulose, lignin, and extractive natural products.

M2867.001500 바이오매스 활용 기술특강 3-2-2

Topics in Application Technology of Biomass

본 교과목에서는 다양한 바이오매스 자원의 생성에 관한 특성과 이들의 의용가치에 기여하는 기술 및 산업적 적용 분야에 대하여 강의한다. 바이오매스 자원의 생성 특성 및 화학적 특성에서부터 탄수화물화학, 고분자화학, 기능성화학의 분야에 이르러 탐구하고, 자연 재생자원의 미생물생산 세포로스바이오매스의 생합성, 기초적인 바이오메트릭 기전과 세포로스/가실렌에 기반한 바이오소화학 기술에 관한 토론한다. 또한 최근 발표 논문들을 중심으로 한 세미나를 통해 바이오매스의 산업적 활용 분야에 대한 최근 지식을 갈warts한 기회를 제공한다.

This course deals with recently promising technologies for industrial application of biomass. We review the formation features of biomass, carbohydrate and polymer chemistry as well as instrumental analysis. This course also deals with the mutual relationship between cellulotic biomass and microorganism in nature, fundamental conversion technologies of biofuel and bio-materials from cellulose and lignin. In addition, students are required to present intensive seminars for obtaining the latest knowledges in the fields of industrial applications of biomass.

국제농업개발협력

M2868.008700 바이오매스 소재특성론 3-3-0

Topics on plant biomass characteristics

본 강좌에서는 바이오매스 자원의 바이오연료 변환공정 이해하기 위하여 자구상에 다양하게 존재하는 식물성 바이오매스의 조직 특성과 화학적 특성에 관하여 강의한다. 식물성 바이오매스의 조직특성 분야에서는 식물 분류학적 특성에 의거하여 단녀석 및 단녀석 식물 세포벽을 구성하는 세포조직의 특성에 관하여 살펴본다. 화학 특성 분야에서는 바이오매스 세포벽을 구성하는 주요 화학적 성분(셀룰로스, 헥시셀룰로스, 리그닌, 수질성분의 세포 내에서의 생성과정, 이들 화학구조 특성 및 반응성과 주요 활용 분야에 관하여 강의한다.

This lecture deals with general anatomical and chemical features of diverse plant biomasses to understand the biofuel conversion technologies as well as biofuel properties produced from biomass resources. In the section of cellular tissue of plant biomass structure as well as morphological differences of cell tissues will be studied between perennial as well as annual plant species by means of diverse microscopic references. During chemistry section biosynthesis, feature of chemical structure, chemical reactivity and essential application potentials of main components of plant biomass
for international trade policy in agriculture such as tariff, quotas, sanitary and phyto-sanitary(SPS) and other non-tariff measures. Also, “Aid for Trade” which is quite popular recently in development area will be discussed in the context of aid effectiveness in developing countries.

M2868.005800 동남아 지역경제론 3-3-0

Regional Studies on Southeast Asia

본 과목은 개발도상국 중 한국의 개발협력이 가장 활발한 동남아시아를 대상으로 농업정책, 개발, 무역, 투자, 공공 행정 이슈 등 동남아 지역경제에 대한 다양한 주제를 논의하고 각 주제에 대하여 발표 및 토론을 벌행하는 과목이다. 학생들은 동남아시아에 대한 다양한 이슈를 상호 논의함으로써 지역간구에 대한 관심을 높이게 된다. 또한 동남아에서 농업개발책임을 이취하는 것은 다양한 사례에 대한 정보를 상호 공유할 것이다. This course will provides important agricultural development issues especially for developing countries, Southeast Asia, through presentations and interactive discussions. Aid effectiveness, agricultural development and economic growth, foreign direct investment and economic growth, sustainable development, green growth, inclusive growth, aid for trade are discussed throughout the course. In addition, students are supposed to learn best practices of agricultural development in Southeast Asia countries where international projects on agricultural development had been made.

M2868.005900 국제농업정책 세미나 3-3-0

A Seminar on International Agricultural Policy

한 국가의 농업정책은 국내뿐만 아니라 국제적인 환경변화에 따라 영향을 받는다. 특히, 글로벌화된 오늘날의 국제사회에서는 농업 관련 다양한 사안(예: FAO, IFAD, OIE, IPPC, Codex 등)의 규범이 국내 농업정책에도 큰 영향력을 미치고 있는 실정이다. 이에 따라 농업 생산, R&D 등 기술, 농산물 무역, 동물보건, 식품보건, 식품안전기준(SPS), 동물복지, 유전자변형식품, 식량안보, 환경, 기후변화, 식량안보기본공約(MDGs)를 위한 개발협력 강화 등 농업의 다양한 부문에서 국제적인 농업정책 또는 규범에 대한 이해와 국제 농업을 진정하는 학생들에게 가장 기초적이고도 필요한 과목이 될 수 있다. 본 과목은 수학생들로 하여금 이러한 글로벌화된 농업정책에 대한 기초적인 이해를 높여야 하는데 기여하고자 한다.

Agricultural Policy is affected by not only domestic factors but also international environment such as agricultural production, marketing, trade, Sanitary and Phyto-Sanitary, animal welfare, GMOs, food security, poverty reduction in Millennium Development Goals, sustainable development in Post-MDGs, and etc. Also, policy impacts driven by international agricultural organizations are getting stronger than before. Thus, it is essential for students majoring in international agriculture to have a better understanding of international agricultural policies in the context of global society.

M2868.006000 국제농업개발협력 인턴십 3-0-6

Internship in International Agricultural Development and Cooperation

국제농업개발협력 관련 정부 및 민간기관으로부터 필요한 연구
Experimental Method for Measuring Effectiveness of Aid

This is an advanced course focusing on research methodology for measuring effectiveness of international agricultural program. Randomized evaluation is one representative experimental methodology in favor of responding to specific issues such as farmers' profit increases in fertilizer usage rates. Designing and running randomized evaluation requires students to deal with designing good questionnaires, getting primary data, and analyzing data using SAS, Stata, R, Ms Excel, and GAMS.

International Agricultural and Forest Development Policy Analysis

This course is focusing on learning research methodology for analyzing international agricultural and forest development policies. Students will learn various analysis methods such as content analysis, legal analysis, discourse analysis, policy instrument analysis, policy arrangement analysis, stakeholder analysis, strategy analysis, media analysis, policy integration analysis and so on. Students will understand strength and weakness of the analysis methods and analyze the cases of international agricultural and forest development policies using the learned methods. This course ultimately aims at enhancing students’ capacities for analyzing international agricultural and forest development policies.
공학전문대학원
Graduate School of Engineering Practice
Knowledge at the level of "general chemistry" is required.
The subjects. Topics include most essential parts of physical concepts which are necessary for graduate students to take core courses successfully and to enhance their understanding of industrial fields will be included during practice and projects.

This course will provide the fundamental chemical concepts which are necessary for graduate students to take core courses successfully and to enhance their understanding of the subjects. Topics include most essential parts of physical chemistry, organic chemistry, inorganic material chemistry and analytical chemistry. In addition, the various application areas related to each chemistry course will be introduced.

Knowledge at the level of "calculus" is required.

This course introduces methods for mathematical approach case study of representative problems appearing in the industrial fields. And the basic modeling techniques for inducing mathematical formulas will be taught. The main topics are linear algebra, differential equations, several variable calculus, Fourier/Laplace transforms. The students will learn and practice not only analytical solution techniques but also various problem solving methods using computer, programming and software.

Case study of representative problems appearing in the industrial fields will be included during practice and projects. Knowledge at the level of "calculus" is required.

Project Management I

This course is an introductory class that investigates fundamental approaches and issues involved in project management. This course is much more complex and challenging than steady state management. Thus, Engineering Project Management (EPM) is more complex and challenging than steady-state management. This course is an introductory class that investigates fundamental approaches and issues involved in project management. This course is a required class that will introduce students to the basic ideas and techniques on smart industrial systems.

Engineering Project Management II

This course is an introductory class that investigates fundamental approaches and issues involved in project management. This course is much more complex and challenging than steady state management. Thus, Engineering Project Management (EPM) is more complex and challenging than steady-state management. This course is an introductory class that investigates fundamental approaches and issues involved in project management. This course is a required class that will introduce students to the basic ideas and techniques on smart industrial systems.

Management of Engineering Projects

This course is an introductory class that investigates fundamental approaches and issues involved in project management. This course is much more complex and challenging than steady state management. Thus, Engineering Project Management (EPM) is more complex and challenging than steady-state management. This course is an introductory class that investigates fundamental approaches and issues involved in project management. This course is a required class that will introduce students to the basic ideas and techniques on smart industrial systems.

Project management is to teach students the basic ideas and techniques on smart industrial systems. The subject of this course is to teach students the basic ideas and techniques on smart industrial systems. The subject of this course is to teach students the basic ideas and techniques on smart industrial systems.
The purpose of this course is to offer deliver in-depth knowledge on project contracts, financing, supply chain management, life cycle cost analysis, integrated project management, state-of-the-art technology applications that are required for successful project delivery. The pre-requisites of this course is Engineering Project Management I that introduces fundamental concepts of Engineering Project Management. This course also discusses practical real-world project management best practices on each subject and lessons learned to promote professionalism for engineering managers.

This course aims to help students build up the ability to make advanced decisions based on enormous data collected in industrial practice. First we will look into the way how industrial data is collected and accumulated focusing on ERP(Enterprise Resource Planning) or SCM(Supply Chain Management). Then the skills to analyze, and optimize industrial practice based on these data. In order to build students’ ability to become independent analysts, one study module consists of discussion, presentation, and question/answer session with professors.

The objective of this course is to increase the student’s ability to forecast future emerging technologies based on quantitative analysis for technology demand. The student taking this course will learn statistics and econometrics to analyze consumer preference for future technologies. For example, among the various new technologies, the students will analyze how future demands for each technology are changed depending on its technological characteristics, market circumstances, and consumer preference by using econometrics (i.e., time-series model, contingent valuation method, discrete choice model, and others). In addition, students will apply the econometric models for specific industries to derive future emerging technologies and learn how to effectively deal with the changes in advance.

In this course, various methods for complex system modeling, which are used to reduce actual development time and cost for cutting-edge systems with ever-increasing complexity, are introduced. Students will learn various modeling techniques and pros/cons of each modeling methodology using a simulation software. Students will also learn how define an overall model concept, couple conceptual models into appropriate sub-models, create detailed model, integrate the total system model and to verify the final model. Also, using the system model constructed, students will learn various analysis techniques using numerous examples. Students will implement learned material through semester-long course projects, such as manufacturing system, transportation system, or other complex system modeling.

In this course, architecture design and modeling methodologies for efficiently creating concepts and detailed design for various complex engineering systems which are backbone of today’s society. Students will learn systematic methodologies to compose system mission statements, functional requirements, sub-function allocation, system form definition.
공학전문대학원(Graduate School of Engineering Practice)

M2866.001300 응용공학특론 3-3-0

Special Topics in Engineering Practice

본 과목에서는 산업계의 이슈에서 익숙해지고 있는 기술 트렌드 및 향후 차세대를 이끌어갈 수 있는 미래 기술에 대한 지식들을 공학전문대학원 학생들에게 신속하고 지속적으로 전달하고 이를 통하여 학생들의 최신 기술에 대한 인식을 높이려고 한다. 학생들은 여러 과학 분야 및 참학 동향 분야에 이르는 청년 기술들에 대하여 해당 분야의 전문적인 지식을 가진 교수들의 강의를 통해 습득하고 이를 기술에 대한 응용실제 및 현제 적용 사례들에 대해서 학습한다. 또한 학생들은 최신 기술들의 이해도를 높이기 위하여 과제 프로젝트 및 과제들을 수행한다.

In this course, the objective is to transfer knowledge of current technology trends from various facets of industry and transfer knowledge of potential future technology which can lead the future to students, enhancing their awareness. Students will learn cutting-edge technologies in various engineering and interdisciplinary areas through lectures from faculties who are subject matter experts, and will also learn about their current application. Additionally, students will carry out various projects and assignments to enhance their understanding of current technologies.

M2866.001400 응용공학프로젝트연구 I 3-3-0

Project Research in Engineering Practice I

본 과목은 공학전문대학원 학생들의 연구능력을 향상시키기 위해 개발 프로젝트 관련 연구를 독립적으로 수행할 수 있는 능력을 기르기 위해 관련 분야의 전문가인 지도교수의 지도하에 연구 수행에 관련된 교육을 받을 수 있는 전공 필수 프로젝트 지도과목 중 첫 번째 과목이다. 학생들은 관련 분야의 논문, 최신 기술에 대한 동향 등 여러 종류의 문헌 검토를 통하여 관련 분야에서 존재하는 연구 결과들을 파악하고 이에 관한 학생들의 주제를 정한 후 전체 연구 프로젝트의 목표 및 문제를 설정한다. 지도교수는 관련 분야 및 분야에 대해 존재하는 다양한 연구 동향에 대한 지식들을 학생들에게 전달하며 학생들의 개발 프로젝트 정의 형성과정을 지도하고 검토한다.

This course is the first course in series of project research courses in the Graduate School of Engineering Practice. In this course, students continue with their research project identified and defined in the Project Research in Engineering Practice I. Based on problem solving methodologies published in many different disciplines, students propose a new problem solving methodology, and to prove its validity, apply it on individual project example. Faculty advisor examines validity of problem solving methodology and underlying assumptions proposed by the students, and evaluates the progress through mid-term review and the end-of-semester review.

M2866.001600 응용공학프로젝트연구 II 3-3-0

Project Research in Engineering Practice II

본 과목은 공학전문대학원 학생들의 연구능력 향상시키기 개발 프로젝트 관련 연구를 독립적으로 수행할 수 있도록 교육시키는 전공 필수 프로젝트 지도과목 중 세 번째 과목이다. 학생들은 응용공학프로젝트연구 I에서 정의된 문제를 응용공학프로젝트연구 II에서 제시된 문제 해결방법론을 폼아웃 연구프로그램을 프로젝트 리포트의 형태로 정리하고 이를 종합연구의 일부 인 심층적 결과물로 제시한다. 지도교수 및 심층적심사위원들은 학생의 심사 심체를 학기 중간 심사와 학기말 심사를 통하여 평가하고 이에 의한 증빙조건 충족여부를 판단한다.

This course is the second course in series of project research courses in the Graduate School of Engineering Practice. In this course, students continue with their research project identified and defined in the Project Research in Engineering Practice II. Based on problem solving methodologies published in many different disciplines, students propose a new problem solving methodology, and to prove its validity, apply it on individual project example. Faculty advisor examines validity of problem solving methodology and underlying assumptions proposed by the students, and evaluates the progress through mid-term review and the end-of-semester review.

M2866.001700 마이크로그리드 운영과 제어 3-3-0

Microgrid Operation and Control

본 과목에서는 전력시스템의 중요한 구성단위로 연구되고 있는 마이크로그리드의 특성과 운영 및 제어법에 대해 학습한다. 마이크로그리드를 구성하는 요소인 신재생에너지, 인버터/컨버터, 에너지저장장치, 전기차등기의 기술적 특성을 학습하고, 이러한 구성 요소들의 동작을 고려한 마이크로그리드 구조와 운영체계를 학습한다. 또한 마이크로그리드의 두 가지 운전모드인 상위제어
In this course, students learn the key factors causing the recent fundamental changes in the electric power industry and the future of the electric power industry due to such changes. At first, students will learn about the structure of the domestic and overseas electric power industry including the operating procedures of electric power markets and systems. In addition, students will learn the trends of the factors triggering new electric energy biz, such as increasing penetration of renewable energy sources, introduction of electric vehicles, and emergence of Energy-prosumers. Further, students will also learn the relevant technologies and their use cases for appropriately addressing such trends in the new electric energy biz. Finally, students will learn about the international agreement on climate change as well as the policy and regulation related to the new electric energy biz in each country.
leaders in each field and they will transfer specific knowl-
dge and know-how to students. In addition, student also
systematically learn a idea generation method and com municat-
ing/presenting method. This course also provides the op-
portunity to learn about the production management system
via factory visits.

M2866.002800 다공학적 프로젝트 전략 3 - 3 - 0
Problem solving strategies of multi-
engineering Project

프로젝트 수행에 있어서 가장 중요한 것은 문제의 정의를 통한
모델링과 주어진 모델을 풀 수 있는 공학적 방법론의 개발이 할
수 있을 것입니다. 우리나라의 경제에 대국의 대열에 올리는데 산업경쟁력을
확보하는 과정에는 기술적인 난제를 해결하였던 다양한 공학적 프로젝트들의 경험을
축적되어 있습니다. 본 과목은 우리나라의 산업
성장을 선도하는데 있어 중요한 역할을 했던 공학적 프로젝트 케
이스들을 발굴하여 설계적인 사례연구를 통해 프로젝트 수행 방법
론에 대해 인구한 것을 목표로 한다. 수업은 현장의 프로젝트
리더급의 직접 경험을 통한 사례발표를 기반으로 다양한 공학적
문제해결 기법을 공부하고 학생들의 흥미를 품게 하여 Creative
Thinking 방법론을 학습하는 형태로 진행될 것이다.

Project modeling based problem define and finding en-
ingineering method to solve the model are key factors in
Project. Korean industries had many good project experiences
in solving engineering problems. By the success of these
projects, Korea becomes one of global leading countries in
many industries. In this class, we will study the real cases
of various projects which gave us global competitiveness in
technology and industry power. The field project leaders
will introduce their experiences in successful projects and students
will discuss problem solving methods based on creative
thinking.

M2866.002900 공학자를 위한 인공지능시스템 설계
Artificial Intelligence System Design for
Engineers

인공지능 알고리즘은 현재 물체인식, 음성인식, 반복 등 많은
분야에서 그 응용을 널리가고 있다. 최근 가장 우수한 성능을 보
이는 신경망 알고리즘은 매우 많은 계산을 필요로 한다. 본 과목
에서는 인공지능 알고리즘을 실제 시스템에서 구현하는 방법론을 다
룬다. 이를 위해서는 인공지능 알고리즘 수준에서의 최적화와 더
불어 시스템 구현에 대한 이해가 필요하다. 대상 시스템으로 고성
능 GPU 랜덤 내장형 시스템 또는 하드웨어를 이용한 구
현을 다룬다. 본 과목에서는 전반부에서 인공지능 알고리즘을 주
두하고 후반부에서 시스템 구현 및 최적화를 다룬다.

Artificial intelligence algorithms are currently being ap-
plied in many fields such as object recognition, speech rec-
ognition, and translation. Recently, neural network algorithms
show the best performance in many applications, but they re-
quire a lot of computation. This course deals with the im-
plementation of artificial intelligence algorithms in real
systems. To do this, it is necessary to understand the system
implementation along with optimization at the algorithm
level. It deals with the implementation using embedded sys-
tems or hardware as well as high performance GPU as the
target systems. This course covers the artificial intelligence
algorithms in the first part, and system implementation and
optimization in the latter part.
M2866,003000  전력기술의 이해 3-3-0

Understanding Electricity Market

This course is intended to offer a basic knowledge of electrical energy economy and how to use large magnetic field for electric apparatus and their applications.

M2866,003200  전기전자회로의 국제 및 실험 3-2-2

Principles and Experiments of Electrical and Electronic Circuits

The course introduces the principles of operational amplifiers and their applications.

M2866,003100  전력기술의 원리 3-3-0

Principles of Electric Power Technology

This course introduces the principles of electrical power economics and technologies.
자율로봇은 사람의 개입이 없이 목표를 달성하기 위해 주변 환경을 파악하고 계획을 세워 실행하는 시스템이다. 이를 위해 자율로봇은 사람과 같이 감각기, 재 ולה, 구성요소를 갖추고 있다. 특히 자율로봇의 경우 개인기반된 외부 신호와 내부 상태를 목표를 달성할 수 있는 최적의 계획 수립과 실행으로 이어지는 자율로봇의 핵심 요소이다. 본 강의에서는 자율로봇기술에 필요한 요소인공간, 인지, 판단, 계획 알고리즘에 대해 소개하고 과제와 프로젝트를 통해 실습해 보게 된다. 대표적인 자율로봇인 자율주행자동차의 사례와 관련 저층 알고리즘을 중심적으로 다룬다.

An autonomous robot is a system that perceives its surrounding environment, makes a plan and executes the plan to achieve the goal without human intervention. For this purpose, autonomous robots have sensors, intelligence, and actuators. In particular, the intelligence is a key element of an autonomous robot that links external signals received from the senses and internal states to optimal planning and execution. In this course, we introduce mapping, localization, perception, and planning algorithms for autonomous robots. This course focuses on examples of autonomous driving vehicles, that are representative autonomous robots, and related intelligent algorithms.

M2866.003700 자율로봇지능 3-3-0

Autonomous Robot Intelligence

M2866.004000 고급화학공정설계 3-3-0

Advanced Chemical Process Design

한국의 화학공업은 공정 중심에서 제품 중심으로 빠르게 변화하고 있다. 지금까지는 공정기초설계를 구입하여 상업화하는데 집중해 왔으나 다른 빠른 추적자들로 인해 더 이상 이런 방법으로 경쟁력 유지하는 것이 어렵게 되었다. 이러한 상황에서 새로운 제품을 개발하고 제조기능설계를 거쳐 스케일업을 통해 상업 생산에 이르는 일련의 과정을 거치야 한다. 이러한 맥락에서 본 강좌에서는 제품개발 과정설계, 설계, 과학, 환경, 재활용, 상업생산 설계 및 운전 등 스케일업에 필요한 지식을 습득하기 위한 개론에 대해 강의가 이루어진다. 특히 공정모사를 통해 스케일업 이론을 실제화하는 시스템을 볼 수 있게 된다. 특히, 공정 장치 설계에는 제 장치를 설계하고 주로 화학반응스케일업 기법에 대해서도 살펴 볼 것이다.

The Korean chemical industry has lost its competitiveness due to fast followers of emerging countries. They have learned from us what we have done, which is going to direct EPC (engineering, procurement, and construction) after obtaining basic design package. Hence, conventional proc-
ess-oriented works should be changed to product-oriented works. A newly developed products in the laboratory needs to be commercialized through our own scale-up process. For this reason, a chemical engineer has to have the capability and capacity to do such a basic engineering work. In this course, a basic theory on scale-up from a laboratory product development, bench plant, pilot plant to commercial plant will be taught. Especially, the practice on the scale-up will be conducted using the mathematical modeling technique such as Aspen plus and Hysis. Also the equipments for the chemical process will be briefly reviewed and the chemical reaction reactor scale-up will be further taught.

M2866.004000 Process Safety Engineering

This course aims at realizing ideas using digital fabrication machines. Students learn by practicing 3D modeling tools, 3D printers, computer controlled cutting machines, and industrial robotic arms. In the class, a micro-controller will be fabricated directly with electronic components along with making a mock-up and dynamic parts. Students will design and fabricate prototypes during one semester using various digital fabrication techniques learned through class.

M2902.000000 Global Project Management for Engineers

This course is designed to increase global project management competitiveness for creating value through sustainable engineering project of the graduate students at Seoul

Global Project Management for Engineers

The objective of the course is to provide engineering practitioners with an understanding of different innovation methods and practical skills for new product and service development and process improvement. Topics include opportunity finding and problem definition, five innovation frameworks, ideation techniques based on internal and external knowledge, prototyping and idea evaluation. Ideation techniques to be covered in this course include advanced brainstorming methods, lateral thinking, inductive data analyses, separation techniques, function modeling and bio-inspired design. This course places much emphasis on providing students with actual problem solving experience and in-class discussion activities so as to facilitate “learning by doing.”
National University. As technological integration and engineering project complexity increase, so does engineering project lead times. To stay competitive global companies have sought to shorten the engineering project times of new business by managing engineering project development efforts effectively by using different project management tools and standards. In this course, three important aspects of global project management are taught: 1. The theory, methods and quantitative tools used to effectively plan, organize, and control global projects; 2. Efficient management methods and standards revealed through practice and research; 3. hands-on, practical global project management knowledge from on-site situations. To achieve this, we will use a global projects, programmes and portfolios management framework and standards in which the project excellence broken into individual competence baseline (ICB), organisational competence Baseline (OCB) and learning from old and current global project case studies. Within the global standards, you will learn the methodologies and tools necessary for each aspect of the competency as well as the theories upon which these are built. By the end of the term you will be able to adapt and apply the competency to effectively manage a global projects in an Engineering organization.