

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Language and Culture	Course Number	021818001
Major / School Year	Dept. of English Language and Literature / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of English Language & Literature / 김성은	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[15-113:금(2)(3)(4)]
Office hours		lecture room	

[1] Outline / Purpose

본 수업은 언어와 문화 간의 상호작용을 탐구하며, 언어가 문화적 정체성과 행동에 미치는 영향을 이해하는 것을 목적으로 함. 학생들은 다양한 문화적 관점에서 언어의 의미와 기능을 학습하고 이를 통해 글로벌 사고를 확장할 수 있음.

[2] Course Learning Outcomes

언어와 문화의 관계를 이해하고 주요 개념을 학습.
 특정 언어와 문화 간 상호작용을 분석하며 비판적 사고력을 기름.
 현대 언어와 문화 이슈를 탐구하고 실질적인 해결 방안을 제시하는 능력을 개발.

[3] Class Delivery Method

수업은 강의와 토론, 발표, 프로젝트를 중심으로 진행.

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

① Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

· 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
 · 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Claire Kramsch	Publisher	Oxford University Press	Textbook	Language and Culture	Issued year	
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	

[Reference books]

(1)	Author	엄정호, 안태형, 김민진, 박주형, 오가현	Publisher	한국문화사	Textbook	언어와 문화	Issued year	
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	
(4)	Author		Publisher		Textbook		Issued year	
(5)	Author		Publisher		Textbook		Issued year	

[Other books]

*교재는 참고이며, 제작한 슬라이드로 수업 예정임

[6] Weekly lesson plans

First week	Course introduction Chapter 1. The relationship of language and culture
Second week	Chapter 1. The relationship of language and culture
Third week	Chapter 2. Meaning as sign
Fourth week	Chapter 3. Meaning as action
Fifth week	Chapter 3. Meaning as action 과제(1) 제출일
Sixth week	Chapter 4. Spoken language, oral culture
Seventh week	Chapter 4. Spoken language, oral culture 중간고사를 위한 Review
Eighth week	중간고사
Ninth week	Chapter 5. Print language, literate culture
Tenth week	Chapter 5. Print language, literate culture
Eleventh week	Chapter 6. Language and cultural identity 과제(2) 제출일
Twelfth week	Chapter 6. Language and cultural identity
Thirteenth week	Chapter 7. Current issues
Fourteenth week	Chapter 7. Current issues 기말고사를 위한 Review 최종과제(3) 제출일
Fifteenth week	기말고사
Sixteenth week	보강주간

[7] Assignments

The first assignment	assignment	언어와 문화의 상호작용 분석	submission date	2025-04-04 Fri
	purpose	언어와 문화의 상호작용을 탐구하며 특정 사례를 통해 언어가 문화에 미치는 영향을 이해		
	procedure & notice	-하나의 언어와 그 언어의 문화적 특징(예: 의례, 관습, 사고방식)을 분석하여 발표 자료 제작. -5분 발표 형식으로 정리하고, 발표 시 동료 학생들과 토론. -발표 자료는 시각적 요소(이미지, 도표 등)를 포함하여 이해를 돕도록 구성.		
	references	주교재 Chapter 1, 관련 문화 사례 논문 또는 기사		
The second assignment	assignment	문화적 정체성과 언어의 관계 탐구	submission date	2025-05-16 Fri
	purpose	특정 집단의 문화적 정체성과 언어 간의 관계를 탐구하며, 이를 통해 정체성이 언어에 어떻게 반영되는지 이해		
	procedure & notice	-특정 문화권(예: 원주민 언어, 이민자 사회)의 언어 사용이 그들의 정체성을 어떻게 표현하는지 사례 연구. -사례를 바탕으로 보고서를 작성(3-4페이지)하고, 조별로 토론. -언어와 정체성 간의 상관관계를 시각적으로 표현.		
	references	주교재 Chapter 6, 학술 자료 또는 다큐멘터리		
The third assignment	assignment	현재의 언어와 문화 이슈 탐구 및 해결 방안 제시	submission date	2025-06-13 Fri
	purpose	언어와 관련된 현대적 문제를 탐구하고, 이를 해결하기 위한 문화적 접근법 제안		
		-언어와 관련된 현재 이슈(예: 언어 소멸, 다국어 정책, 디지털 시대의 언어 변화)를 선정.		

	procedure & notice	-문제의 배경, 현재 상황, 그리고 해결 방안을 포함한 10분 프레젠테이션 준비. -제안된 해결 방안에 대한 동료 학생들의 피드백을 반영하여 최종 보고서 제출 (3~5페이지).
	references	주교재 Chapter 7, 뉴스 기사 또는 최근 학술 논문

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Seminar in English Novel	Course Number	021846001
Major / School Year	Dept. of English Language and Literature / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of English Language & Literature / 하인혜	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[15-113:목(2)(3)(4)]
Office hours		lecture room	

[1] Outline / Purpose

This seminar navigates the literary landscape that has lately been reshaped by the emergence of artificial intelligence. With a focus on Jeanette Winterson's *The Stone Gods* (2009), Ian McEwan's *Machines Like Me* (2019), and Kazuo Ishiguro's *Klara and the Sun* (2021), we will explore several key aspects of posthumanism, robot rights, and, more generally, our entanglements with cybernetics, cyborgs, or robots. As these novels reimagine and contest the increasingly complicated boundaries between human and machine, throughout the semester we are going to call into question what constitutes consciousness, agency, sympathy, and any other emotional depth.

These readings will enable us to think about the following questions:

- o How to redefine human identity through the lens of artificial beings
- o The role of memory, emotion, and perception in constructing (or simulating) personhood and selfhood
- o Ethical dilemmas surrounding AI autonomy, free will, and the limits of human responsibility
- o Questions of kinship

[2] Course Learning Outcomes

- o Students will acquire critical vocabularies related to posthumanist thinking and nuanced understanding of posthumanism
- o Students will engage in seminar discussions, theoretical reflections, and a final research project exploring the intersections of literature, technology, and philosophy.
- o Students will examine and explicate narrative strategies and relevant literary techniques
- o Students will understand the ever-evolving genealogy of AI literature in the context of the 2020s

[3] Class Delivery Method

Lecture, presentation, and discussion

(a) Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

(b) Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

(a) Percentage of grade evaluation

Exam	Attendance	Assignment
10 %	20 %	70 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Publisher	Nan A. Talese	Textbook	Machines Like Me	Issued year	
(2)	Author	Publisher	Vintage	Textbook	Klara and the Sun	Issued year	
(3)	Author	Publisher	Mariner	Textbook	The Stone Gods	Issued year	

[Reference books]

(1)	Author	Publisher		Textbook		Issued year	
(2)	Author	Publisher		Textbook		Issued year	
(3)	Author	Publisher		Textbook		Issued year	

(4)	Author		Publisher		Textbook		Issued year	
(5)	Author		Publisher		Textbook		Issued year	

[Other books]

[6] Weekly lesson plans

First week	Introduction to Seminar Reading: Haraway
Second week	The Stone Gods (1)
Third week	The Stone Gods (2)
Fourth week	The Stone Gods (3)
Fifth week	Machines Like Me (1)
Sixth week	Machines Like Me (2)
Seventh week	Machines Like Me (3)
Eighth week	Machines Like Me (4)
Ninth week	Midterm Essay Due & Mock-Conference
Tenth week	Klara and the Sun (1)
Eleventh week	Klara and the Sun (2)
Twelfth week	Klara and the Sun (3)
Thirteenth week	Klara and the Sun (4)
Fourteenth week	Writing Workshop: Comparative Analysis
Fifteenth week	Student Presentation: Final Paper
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Modern English and American Drama	Course Number	020636001
Major / School Year	Dept. of English Language and Literature / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of English Language & Literature / 황승현	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number	0328358124	A weekday / class /	[15-317:월(6)(7)(8)]
Office hours	By Appointment @ STARinU	lecture room	

[1] Outline / Purpose

This seminar class explores modern American and British drama, emphasizing themes of social change, identity, morality, and human resilience.

Through critical engagement with influential drama works, students will analyze the evolving roles of drama in reflecting and challenging societal norms.

[2] Course Learning Outcomes

- Examine the social, cultural, and historical contexts of modern drama.
- Analyze the narrative and thematic structures of significant plays.
- Understanding the contributions of playwrights in shaping modern theater.
- develop critical insights into performance, character development, and audience interaction.

[3] Class Delivery Method

- reading and discussion

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

- class participation
- final paper proposal/ paper
- final paper presentation

① Percentage of grade evaluation

Exam	Attendance	Assignment
0 %	20 %	80 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year

[Reference books]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year
(4)	Author	Publisher	Textbook	Issued year
(5)	Author	Publisher	Textbook	Issued year

[Other books]

[6] Weekly lesson plans

First week	Introduction to Modern Drama –"The Birth of Modern Drama" –"What is Modern Drama?"
Second week	Foundations of Dramatic Theory and Performance Readings Scheduling Discussion Leading
Third week	Gender Roles and Social Change 1 A Doll's House by Henrik Ibsen
Fourth week	Gender Roles and Social Change 2 The Welkin by Lucy Kirkwood
Fifth week	Identity and Transformation 1 Pygmalion by George Bernard Shaw
Sixth week	Identity and Transformation 2 The Curious Incident of the Dog in the Night-Time by Simon Stephens
Seventh week	Morality and Society The Good Person of Szechwan by Bertolt Brecht
Eighth week	Final Paper Proposal Due
Ninth week	Makeup Class The Children by Lucy Kirkwood
Tenth week	Absurdity and Existentialism Rosencrantz and Guildenstern are Dead by Tom Stoppard
Eleventh week	Mystery and Psychological Tension The Mousetrap by Agatha Christie
Twelfth week	Final Paper Presentation
Thirteenth week	Mystery and Psychological Tension The Nether by Jennifer Haley
Fourteenth week	Memory and Aging Half Life by John Mighton
Fifteenth week	Final Paper Due
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Development Policy and Administration	Course Number	1002280001
Major / School Year	Dept. of Public Administration / 전학년	completion division / Grade evaluation	/
Department/Professor	Dept. of Public Administration / 타오	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number	0328358337	A weekday / class / lecture room	[13-404:목(0f1)(0f2)(0f3)]
Office hours	Wednesdays 9:30-13:00		

[1] Outline / Purpose

This is a course designed to introduce students to the world of development policy and administration. In public administration, this field is often tied to comparative administration, but with a focus on the developing world. South Korea is in a unique position with regard to this topic, because it has transitioned from a developing to a developed country. It has used this fact to leverage its position in international organizations and to argue that its model of development is something that can be shared with other countries that are trying to develop now.

[2] Course Learning Outcomes

The course will focus on three areas: 1) economic growth and the institutions that are necessary for such development; 2) political institutions that promote stability over time so that countries might develop; and 3) civil society and its role in providing stability for development and growth. All three will be presented as theories, cases, and with critiques. This course is not presenting a magic bullet, because no such thing exists. Development of institutions and economies is hard work and requires a great deal of good will and trust in order to be successful. By the end of the course, students should have a firm grasp of the current approaches being taken by countries around the world to develop, and the pitfalls that exist in those approaches.

[3] Class Delivery Method

This will be a seminar where discussion is encouraged. Since many students come from the developing world, these topics will hit close to home, and that is a resource that we can call upon to enrich the theoretical discussions. There will be a presentation of theory by the professor, and then each student will be called upon to discuss the theory and provide examples of how it might apply to their own experience.

@ Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
50 %	50 %	0 %	0 %	0 %	0 %	0 %	0 %

⑥ Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
30 %	0 %	50 %	0 %	0 %	0 %	0 %	20 %

[4] Grading Policies

Students will have three assignments on which they will be graded: 1) an exam the 5th week (March 31st) to check and see how well students are comprehending the material. The exam will be on line and will take approximately 1 and a half hours; 2) a short theoretical paper where a student chooses a theoretical frame (economic, political, social) and offers an explanation and a critique of that frame (due the 9th week of class (April 28th); and 3) a presentation of a case analysis of a particular program being carried out in a developing country to determine how successful it has been in addressing the development problem it was meant to address (The last week of class, (June 9th). Each assignment will be worth 20% of the total grade. There will also be an in-class exercise conducted to assess how well a development organization is equipped to deal with a particular problem of development.

@ Percentage of grade evaluation

Exam	Attendance	Assignment
20 %	20 %	60 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year

[Reference books]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year
(4)	Author	Publisher	Textbook	Issued year

(5)	Author		Publisher		Textbook		Issued year	
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[Other books]

Readings assigned in class and posted on the eLearning site.

[6] Weekly lesson plans

First week	Week 1--On line, because Monday is a holiday. Get ready to Zoom! The history of international development policy and development administration
Second week	Week 2--Strategies for development: what do donor states want? How will they get what they need?
Third week	Week 3--What do recipient states want? How do they get what they need?
Fourth week	Week 4
Fifth week	Week 5 First test
Sixth week	Week 6
Seventh week	Week 7
Eighth week	Week 8
Ninth week	Week 9 Theory paper DUE
Tenth week	Week 10
Eleventh week	Week 11 In class exercise
Twelfth week	Week 12
Thirteenth week	Week 13
Fourteenth week	Week 14
Fifteenth week	Week 15 Presentations
Sixteenth week	

[7] Assignments

The first assignment	assignment	Test	submission date	2025-03-31 Mon
	purpose	To assess comprehension levels		
	procedure & notice	Test will be given online--students will have one and half hours to log on, download the test, complete, and email it back to the professor.		
	references	Class materials and discussions Weeks 1-4		
The second assignment	assignment	Theoretical critique paper	submission date	2025-04-28 Mon
	purpose	To assess students' comprehension of theory		
	procedure & notice	The assignment will be distributed to students during the 7th week. Papers will be no more than 7 pages (typed, double-spaced).		
	references	Class materials Weeks 5-8.		
The third assignment	assignment	Presentation	submission date	2025-06-09 Mon
	purpose	To assess student's ability to analyze the success/failure of a development project.		
	procedure & notice	Students will provide a 15-minute analysis of a development project being carried out in a country of their choice.		
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Seminar in Urban Policy	Course Number	230636001
Major / School Year	Dept. of Public Administration / 전학년	completion division / Grade evaluation	/
Department/Professor	Dept. of Public Administration / 타오	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number	0328358337	A weekday / class /	[13-404:월(01)(02)(03)]
Office hours		lecture room	

[1] Outline / Purpose

This course is designed for students of public administration who are interested in urban policy and development. In 2007, the world hit an important milestone: half of the world's population lived in cities, and half in rural areas. According to the UN's latest figures from 2017, that number has increased to 55%, and is projected to increase to 65% by 2050. Understanding what makes cities and urban areas work well in the present will be crucial to good governance in the future.

[2] Course Learning Outcomes

The literature on urban policy is vast, but falls into three general areas: 1) national urban policy, where nation-states lay out a specific plan or vision for urbanization, common in the developing world; 2) local government policy, which lays out how cities govern themselves (e.g. provide services, plan infrastructure, set up governing processes); and 3) global cities/urban policy, where cities, especially mega-cities (those with populations of 5 million or more) create their own ecosystems of trade, politics, and infrastructure. Students will have a common core of readings that span these areas, but each student will choose an area on which to concentrate. Which area you choose will be your focus for your research paper. Students are encouraged to go over the list of contents on the eLearning site to see if there is a topical area that strikes you as interesting. Then your job will be to find two cities that you think exemplify the area that interests you, and then explain why these cities fit into that category, and then compare the two to figure out how both fit, even when they are different.

[3] Class Delivery Method

There will be one test in the 7th week of the semester to make sure that students are understanding the core readings and lectures.

The final paper will be a comparative case study. Topics will need to be chosen no later than the third week of the semester (March 17th).

㉠ Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
50 %	50 %	0 %	0 %	0 %	0 %	0 %	0 %

㉡ Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	70 %	0 %	30 %	0 %	0 %	0 %

[4] Grading Policies

㉠ Percentage of grade evaluation

Exam	Attendance	Assignment
30 %	20 %	50 %

· 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
· 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	JCR	Publisher	European Commission	Textbook	Atlas of the Human Planet	Issued year	2016
(2)	Author	Stijn Oosterlynck, Gert Verschraegen and Ronald van Kempen	Publisher	Policy Press, Bristol, UK	Textbook	Divercities	Issued year	2019
(3)	Author	Meredith Woo-Cumings	Publisher	Cornell University	Textbook	The Developmental State	Issued year	1999

[Reference books]

(1)	Author		Publisher		Textbook		Issued year	
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	
(4)	Author		Publisher		Textbook		Issued year	

(5)	Author		Publisher		Textbook		Issued year	
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[Other books]

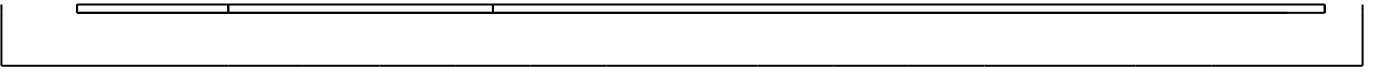
Students will also be engaged in a comparative case study, which is a type of research design and analysis. For these purposes, there will be additional readings from Charles Ragin's *The Comparative Method* (1987) and Robert Yin's *Qualitative Research from Start to Finish* to help you with your research papers.

[6] Weekly lesson plans

First week	Introduction: What is a city? What are urban policies?
Second week	The history of cities versus the history of urbanization. Rural versus urban versus "the wilds".
Third week	Cities as political entities. Research topics DUE.
Fourth week	Cities as subjects of national social and economic development
Fifth week	Cities as global economic hubs.
Sixth week	Policy + Urban does not always equal Urban + Policy.
Seventh week	Check-in with exam.
Eighth week	Check-out with exam--going over performance, possible issues, and the map of the second half of the semester.
Ninth week	Cities as environmental disasters.
Tenth week	Cities as environmental saviors.
Eleventh week	Cities as networks.
Twelfth week	Practicing what you preach--looking inside the city for clues to broader social issues.
Thirteenth week	Cities as governance leaders.
Fourteenth week	Cities as innovators.
Fifteenth week	Projects due--Presentations due.
Sixteenth week	

[7] Assignments

The first assignment	assignment	First (and only) exam	submission date	2025-04-14 Mon
	purpose	To assess understanding		
	procedure & notice	The exam will be provided on-line, and students will be given a 24-hour window to complete the exam and upload answers to eLearning.		
	references			
The second assignment	assignment	Research paper topic	submission date	2025-03-17 Mon
	purpose	To determine the viability of students' proposed research		
	procedure & notice	Feedback will be given on the proposed topic. Students are recommended to provide a topic and a reason why this interests you.		
	references			
The third assignment	assignment	Final paper and presentation	submission date	2025-06-09 Mon
	purpose	To assess research skills		
	procedure & notice	Papers should be between 20 - 25 pages and should comprise a research topic (see Second Project above), a literature review on that topic, and a proposed research design (how will you investigate the topic in a way that adds to the research already done?)		
	references			



Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Comparative Public Administration	Course Number	230602001
Major / School Year	Dept. of Public Administration / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of Public Administration / 제시 캠벨	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[13-404:수(0f1)(0f2)(0f3)]
Office hours		lecture room	

[1] Outline / Purpose

Comparative public administration explores the dimensions, conditions, and consequences of variations in administrative phenomena from a comparative perspective. It has long been regarded as a key method for advancing scientific knowledge in the field of public administration. This graduate-level course is designed to familiarize students with key principles and theories in comparative public administration while providing opportunities to explore how comparative research is conducted in practice. The course also includes a significant practical component, culminating in the production of an empirical comparative public administration study as the main project for the class.

[2] Course Learning Outcomes

By the end of the course, students will:

1. Develop a strong and detailed understanding of core issues in public administration, as well as the contextual factors that influence and result from these issues.
2. Gain a solid foundation for reading and interpreting empirical research in comparative public administration, including the ability to analyze statistical tables.
3. Acquire practical experience in analyzing comparative public administration data using a widely used statistical software package.

[3] Class Delivery Method

The course topics and outline will be prepared in advance by the professor. However, students are encouraged to actively participate in each class, including through assigned presentations of the course material. Additionally, as the class includes a practical component, students will use their personal laptops for data analysis activities. Two examinations will be conducted to reinforce the learning materials.

㉠ Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

㉡ Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

㉠ Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year

[Reference books]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year
(4)	Author	Publisher	Textbook	Issued year
(5)	Author	Publisher	Textbook	Issued year

[Other books]

[6] Weekly lesson plans

First week	1. Introduction to the course – Size, scope, and role of contemporary government
Second week	2. Merit system – Weber and the foundations of bureaucratic quality
Third week	3. Practical: Introduction to the R statistical software and cross-national datasets
Fourth week	4. Patronage bureaucracy – Risks and the trade-off between responsiveness and competency
Fifth week	5. Representative bureaucracy – Passive, active, and symbolic representation
Sixth week	6. Practical: Presentations of student research project proposals
Seventh week	7. Government performance 1 – Characteristics of bureaucracy and the quality of public services
Eighth week	8. Government performance 2 – Citizen satisfaction with government and public services
Ninth week	9. Midterm examinations
Tenth week	10. Public service delivery – The logic and scope of the New Public Management model
Eleventh week	11. Compensation of public servants – Money, motivation, and the public service ethic
Twelfth week	12. Public participation and co-production – Levels of citizen involvement and their impact on policy quality
Thirteenth week	13. Corruption – Principal-agent and collective action models
Fourteenth week	14. Practical: Presentations of student final projects
Fifteenth week	15. Final examinations
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Statistical Methods for Urban Studies	Course Number	1001788001
Major / School Year	Dept. of Urban Planning and Policy / 전학년	completion division / Grade evaluation	/
Department/Professor	Dept. of Urban Policy and Administration / 김현우	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[28-405:화(8B-9)(011-2A)]
Office hours		lecture room	

[1] Outline / Purpose

This course introduces the primary statistics paradigm to assess and analyze urban problems with an emphasis on analytical tools and perspectives. The course consists of three parts, which are: 1) basic statistics, 2) machine learning, and 3) final project. Students will individually investigate diverse statistic tools and apply in real world situations.

[2] Course Learning Outcomes

- Develop critical analytical capacity to address upcoming urban challenges.
- Understand the basic commands of STATA and Python.

[3] Class Delivery Method

Students need a basic knowledge on statistics (linear algebra: took a prerequisite course). Rather than learning the theory or math foundations, this course requires students to individually learn the usage of ML and present the logic and basic understanding of various regression and ML tools every week. They need to apply these tools for the final project.

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

- Attendance: 20%
- Assignments and Final Project: 60%
- Final Exam: 20%

① Percentage of grade evaluation

Exam	Attendance	Assignment
20 %	20 %	60 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year

[Reference books]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year
(4)	Author	Publisher	Textbook	Issued year
(5)	Author	Publisher	Textbook	Issued year

[Other books]

[6] Weekly lesson plans

First week	Class overview
Second week	Urban data sources Python basics
Third week	Data description and visualization
Fourth week	Linear regression 1
Fifth week	Linear regression 2
Sixth week	Linear regression 3
Seventh week	Urban application in linear regressions
Eighth week	Mid-term Assignment
Ninth week	Supervised learning 1
Tenth week	Supervised learning 2
Eleventh week	Supervised learning 3
Twelfth week	Unsupervised learning 1
Thirteenth week	Unsupervised learning 2
Fourteenth week	Work session
Fifteenth week	Final project presentation
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Quantitative Management Model Analysis	Course Number	510833001
Major / School Year	Dept. of Business Administration / 전학년	completion division /Grade evaluation	/
Department/Professor	Division of Business Administration / 김태호	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number	0328358733	A weekday / class /	[14-102:화(2)(3)(4)]
Office hours	Mon. 13:00~15:00	lecture room	

[1] Outline / Purpose

This lecture instructed in English gives the knowledge of the concept of , the models of, the approaches to , and software for economical efficiency of decision making units.
No specific text book is selected but preliminary produced materials by professor are used.

[2] Course Learning Outcomes

Graduate students can evaluate the efficiency of Decision making Units in their own academic area and analyze the affecting factors on efficiency through various evaluation models.

[3] Class Delivery Method

Offline Lecture (45%), Metaverse-based lectures (55%)

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
60 %	20 %	0 %	20 %	0 %	0 %	0 %	0 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
40 %	0 %	20 %	0 %	0 %	0 %	40 %	0 %

[4] Grading Policies

If students will be able to show reasonable performance in classroom, they will obtain good grade.

① Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	J. Shapiro	Publisher	Thompson	Textbook	Modeling the supply chain 2nd edition	Issued year	2007
(2)	Author	G. Gachon	Publisher	Working paper of The Wharton School of Business & University of Pennsylvania	Textbook	Supply Chain Coordination with Contracts	Issued year	2002
(3)	Author		Publisher		Textbook		Issued year	

[Reference books]

(1)	Author	윤석철	Publisher	경문사	Textbook	계량적 세계관과 사고체계	Issued year	2002
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	
(4)	Author		Publisher		Textbook		Issued year	
(5)	Author		Publisher		Textbook		Issued year	

[Other books]

[6] Weekly lesson plans

First week	Ice-breaking and introduction of professor and students
Second week	Introduction of economical efficiency I
Third week	Introduction of economical efficiency II
Fourth week	Fundamentals of economical efficiency I
Fifth week	Fundamentals of economical efficiency II
Sixth week	Fundamentals of economical efficiency III
Seventh week	Models of economical efficiency I
Eighth week	Models of economical efficiency II
Ninth week	Models of economical efficiency III
Tenth week	Post-analysis of economical efficiency I
Eleventh week	Post-analysis of economical efficiency II
Twelfth week	Post-analysis of economical efficiency III
Thirteenth week	Software engineering for economic efficiency evaluation I
Fourteenth week	Software engineering for economic efficiency evaluation II
Fifteenth week	Final
Sixteenth week	Final Exam

[7] Assignments

The first assignment	assignment	couple practical assignments of	submission date	2025-06-10 Tue
	purpose	한학기 동안 배운 방법론들을 실제 기업 활동의 문제에 적용해 보고 결과를 해석하는 능력을 배양		
	procedure & notice	2인 1조로 해서 한 학기동안 데이터를 수집하고 방법론을 적용해서 문제를 풀고 결과를 해석한 후 기말에 presentation을 하고 리포트를 제출한다.		
	references			
The second assignment	assignment	Monthly problem solvings	submission date	
	purpose	각 계량 경영 모형에 해당하는 문제를 풀이해서 각 모형에 대한 이해를 증진한다.		
	procedure & notice	개별 과제로 매월 제시되는 문제를 풀어서 리포트를 제출한다.		
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Consumer Behavior	Course Number	510604001
Major / School Year	Dept. of Business Administration / 전학년	completion division /Grade evaluation	/
Department/Professor	Division of Business Administration / 김영균	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[14-102:화(7)(8)(9)]
Office hours		lecture room	

[1] Outline / Purpose

The course introduces a wide range of behavioral concepts, and explores the strategic implications of customer behavior for marketers. The course challenges students to explore the realities and implications of buyer behavior in traditional and e-commerce markets. Key to the course is demonstrating how an understanding of buyer behavior can help to improve strategic decision making.

[2] Course Learning Outcomes

- To gain an understanding of the theories and concepts of buyer behavior
- To apply buyer behavior concepts to what customers do in "the real world"
- To improve skills in the research and analysis of customer segments, demand, and market potential
- To utilize knowledge of buyer behavior to enhance strategic decision making

[3] Class Delivery Method

To accomplish these objectives, the course material will be presented, and evaluations done through (1) Videos and Lectures, (2) In-class discussions/team assignments(depending on the number of students), (3) Case analysis, (4) Two Exams and (5) a short research paper. The lectures will tend to supplement and advance the required readings, in-class discussions, and case analysis.

It is the responsibility of the student to do the required readings and assignments prior to the class meeting.

Active participation is great part of your grade. You will get extra points by participating class action including

- (1) asking questions, (2) answering questions raised by the instructor, (3) responding to other students comments, etc.
- (4) Bringing relevant articles or other materials to class that illustrate some of the things you have learned in the course. These articles or materials must be accompanied by a short, professionally written, summary (less than one page). Be sure to put your name in the top, right-hand corner, last name first.

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
70 %	20 %	%	%	10 %	%	%	%

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
30 %	%	40 %	%	30 %	%	%	%

[4] Grading Policies

mid,final exam 60%
 presentation 20%
 participation 20%

① Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Kardes, Cronley and Cline	Publisher	cengage learning	Textbook	consumer behavior	Issued year	2015
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	

[Reference books]

(1)	Author		Publisher		Textbook		Issued year	
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	
(4)	Author		Publisher		Textbook		Issued year	

(5)	Author		Publisher		Textbook		Issued year	
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[Other books]

[6] Weekly lesson plans

First week	Marketing concept
Second week	Understanding consumer behavior
Third week	Segmentation and positioning
Fourth week	Consumer perception
Fifth week	Learning and memory
Sixth week	Automatic Information Processing
Seventh week	Motivation and emotion
Eighth week	Mid term exam
Ninth week	Attitude formation and change
Tenth week	Consumer decision making process
Eleventh week	Product Consideration, evaluation, and choice
Twelfth week	Behavioral Decision Theory
Thirteenth week	Self concept and personality
Fourteenth week	Social influences and behavioral compliances
Fifteenth week	Culture and values
Sixteenth week	Final exam

[7] Assignments

The first assignment	assignment	Individual presentation	submission date	
	purpose	Improving communication skill		
	procedure & notice			
	references	Thesis		
The second assignment	assignment	Individual project	submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Statistical Methods	Course Number	510509001
Major / School Year	Dept. of Business Administration / 전학년	completion division /Grade evaluation	/
Department/Professor	Division of Business Administration / 김태호	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[14-102:월(2)(3)(4)]
Office hours		lecture room	

[1] Outline / Purpose

1. Understanding the objective of Statistics
2. Understanding the fundamentals of Statistics
3. Understanding the various statistical methods which will be used for graduate research

[2] Course Learning Outcomes

Students can select and implement the appropriate statistical methods to their research problem.

[3] Class Delivery Method

1. Offline lecture of theory
2. Computer-aided statistical software lecture

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
60 %	0 %	0 %	40 %	0 %	0 %	0 %	0 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
60 %	0 %	0 %	0 %	0 %	0 %	40 %	0 %

[4] Grading Policies

- 20% of punctuality
- 60% of correctness
- 20% of sincerity

① Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Publisher		Textbook	Issued year
(1)	Hogg, McKean, and Craig	Pearson-Prentice Hall	Introduction to Mathematical Statistics		2005
(2)	Lind, Marchal, and Wathen	McGraw-Hill	Statistical Techniques in Business and Economics		2024
(3)					

[Reference books]

(1)	Author	Publisher		Textbook	Issued year
(1)					
(2)					
(3)					
(4)					
(5)					

[Other books]

[6] Weekly lesson plans

First week	Introduction to statistics
Second week	Data collection
Third week	Visualization of collected data
Fourth week	Description of collected data
Fifth week	Random variable and PDF
Sixth week	Estimation and inference
Seventh week	One population estimation and inference
Eighth week	Two population estimation and Inference I
Ninth week	Two population estimation and Inference II
Tenth week	ANOVA
Eleventh week	Correlation analysis
Twelfth week	Regression analysis I
Thirteenth week	Regression analysis II
Fourteenth week	Non-parametrics
Fifteenth week	Bootstrapping
Sixteenth week	

[7] Assignments

The first assignment	assignment	Application of each statistical method to problem	submission date	
	purpose	To use statistical methods for research		
	procedure & notice	1. A statistical question is given to students after learning each statistical method 2. Students should solve the question by using a software 3. Submit a report to professor.		
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Entertainment Case Study Seminar	Course Number	1002954001
Major / School Year	Dept. of Tourism, Convention, and Entertainment / 전학년	completion division /Grade evaluation	/
Department/Professor	Division of International Trade / 박영은	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number	0328358539	A weekday / class /	[14-205:월(1)(2)(3)]
Office hours		lecture room	

[1] Outline / Purpose

글로벌 시대, 한류로 인한 문화콘텐츠의 중요성이 부각되는 시대, 그리고 N개의 스크린 (여러개의 스크린)을 통해 다양한 문화콘텐츠가 쏟아지는 시대를 맞아, 글로벌 한류 및 문화콘텐츠 (엔터테인먼트 전반) 시장의 이해에 대한 수요가 급격히 증가하고 있다. 또한, 전 세계적으로 확산된 코로나 19 바이러스(COVID-19)는, 그동안 꾸준히 지속된 우리 사회의 디지털 전환속도를 급격하게 바꿔놓았다. 이로 인해, 대면방식과 물리적 거래를 기반으로 했던 국제무역환경은 비대면 및 디지털 전달 등의 거래 방식을 비롯하여, 무역 거래의 대상 자체도 유형재화 중심에서 문화콘텐츠 같은 무형의 제품으로 영역이 확장되었다. 이 강좌는 디지털 무역시대에 더욱 확장되고 있는 문화콘텐츠 (더 나아가 엔터테인먼트) 산업에 대한 이해를 기반으로, 4차 산업혁명 의 핵심인 AI와 엔터테인먼트와 관련된 다양한 사례를 살펴보는 것을 목적으로 한다.

[2] Course Learning Outcomes

4차 산업혁명의 핵심인 AI, 그리고 엔터테인먼트와 관련된 다양한 사례들을 찾아보고 분석한뒤, 학습자 개별적인 논문을 완성하는 것을 목표로 한다.

[3] Class Delivery Method

한국의 엔터테인먼트 산업은 최근 몇 년 동안 급격한 성장을 이루어 내고 있다. 이러한 시기적 중요성을 가지고, 본 교과목은 먼저 학습자 개인의 관심에 기반하여 다양한 AI 및 엔터테인먼트 사례들을 살펴보고, 분석해본다. 이를 통해, 학습자 개인이 개별적인 엔터테인먼트 사례연구를 개발하여 학술대회 발표 혹은 저널에 게재하는 것을 최종적인 목표로 삼는다.

㉔ Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

㉕ Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

㉔ Percentage of grade evaluation

Exam	Attendance	Assignment
0 %	20 %	80 %

· 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
· 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Publisher	커뮤니케이션북스	Textbook	엔터테인먼트 경영전략	Issued year
(2)	Author	Publisher	커뮤니케이션북스	Textbook	엔터테인먼트 경영학	Issued year
(3)	Author	Publisher	커뮤니케이션북스	Textbook	K-콘텐츠, 엔터테인먼트 기업의 성공 전략	Issued year

[Reference books]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year
(4)	Author	Publisher	Textbook	Issued year
(5)	Author	Publisher	Textbook	Issued year

[Other books]

[6] Weekly lesson plans

First week	강의 오리엔테이션
Second week	Business House & Future Career 연구방법론 (Case Study) 설명
Third week	글로벌 한류의 기본, 엔터테인먼트 산업의 기초
Fourth week	(9시부터 개별적으로) 경영전략 관련 온라인 동영상 수업 + (10시부터) 시와 엔터테인먼트를 다룬 사례 분석1
Fifth week	(9시부터 개별적으로) 경영전략 관련 온라인 동영상 수업 + (10시부터) 시와 엔터테인먼트를 다룬 사례 분석2
Sixth week	(9시부터 개별적으로) 경영전략 관련 온라인 동영상 수업 + (10시부터) 시와 엔터테인먼트를 다룬 사례 분석3
Seventh week	(9시부터 개별적으로) 경영전략 관련 온라인 동영상 수업 + (10시부터) 시와 엔터테인먼트를 다룬 사례 분석4
Eighth week	개인별 연구계획서 발표 및 교수 피드백
Ninth week	개인별 논문 작성 1
Tenth week	개인별 논문 작성 2
Eleventh week	개인별 논문 작성 3
Twelfth week	학회발표 및 저널 게재 준비 1
Thirteenth week	학회발표 및 저널 게재 준비 2
Fourteenth week	개인별 사례논문 최종 프리젠테이션
Fifteenth week	개인별 사례논문 최종제출
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Advanced Mathematical physics	Course Number	120603001
Major / School Year	Dept. of Physics / 전학년	completion division / Grade evaluation	/
Department/Professor	Dept. of Physics / 엠후 도르츠	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[05-202:수(1-2A)(2B-3)]
Office hours		lecture room	

[1] Outline / Purpose

Mathematical physics refers to development of mathematical methods for application to problems in physics. This course provides the details of mathematical apparatus, and some derivations and proofs for the mathematical formulations of physical theories.

[2] Course Learning Outcomes

To acquire a comprehensive knowledge on mathematical concepts which will be used as a tool for the subsequent physics courses.

[3] Class Delivery Method

Most lectures with board notes and ppt slides as a supplementary

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
%	%	%	%	%	%	%	%

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
%	%	%	%	%	%	%	%

[4] Grading Policies

① Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	G. B. Arfken, H.J. Weber, and F. E. Harris	Publisher	Elsevier LLC	Textbook	Mathematical Methods for Physicists: A comprehensive guide	Issued year	2012
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	

[Reference books]

(1)	Author		Publisher		Textbook		Issued year	
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	
(4)	Author		Publisher		Textbook		Issued year	
(5)	Author		Publisher		Textbook		Issued year	

[Other books]

[6] Weekly lesson plans

First week	Introduction
Second week	Eigenvalue Problems
Third week	Eigenvalue Problems
Fourth week	Ordinary Differential Equations
Fifth week	Ordinary Differential Equations
Sixth week	Partial Differential Equations
Seventh week	Partial Differential Equations
Eighth week	Midterm
Ninth week	Green function
Tenth week	Gamma function
Eleventh week	Bessel functions and Legendre functions
Twelfth week	Angular momentum and More special functions
Thirteenth week	Fourier series
Fourteenth week	Integral transforms and Integral equations
Fifteenth week	Final exam
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Special Topics in Photoelectronics Physics	Course Number	120610001
Major / School Year	Dept. of Physics / 전학년	completion division / Grade evaluation	/
Department/Professor	Dept. of Physics / 이진호	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[05-202:금(2)(3)(4)]
Office hours		lecture room	

[1] Outline / Purpose

This course aims to understand the electrical and optical characteristics in relation to the basic properties and electronic structures of hybrid materials including organic electronic materials, halide perovskites, and quantum dots, which are the main materials of next-generation electronics. Furthermore, it enhances the application ability to electronic device development by deeply covering various optical applications and device physics through photoelectrical property control. This course requires basic knowledge of semiconductor materials, and can enhance the learning effect by linking with solid-state physics, electronic physics, etc.

[2] Course Learning Outcomes

The aim of this course is to provide undergraduate students in physics, materials engineering, and electronic engineering with basic theoretical background education for working as professional researchers in the optoelectronics industry and research institutes. It cultivates the ability to apply basic scientific and engineering knowledge and theories necessary for understanding optoelectronics, and the ability to investigate and analyze the latest technology trends related to optoelectronics. In particular, it is to conduct actual experiments.

[3] Class Delivery Method

The principle is to conduct face-to-face lectures based on the lecture plan. The teaching materials will be composed based on the main and supplementary textbooks, but various literature and papers will be additionally extracted to compose the teaching materials. In order to increase the participation rate in the study, the teaching materials will be distributed in advance and the classes will be conducted.

@ Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

⑥ Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

@ Percentage of grade evaluation

Exam	Attendance	Assignment
70 %	20 %	10 %

· 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
 · 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Publisher	Textbook	Issued year
(1)	Georges Hadziioannou	Wiley-VCH	Semiconducting Polymers	2007
(2)	Nam-Gyu Park	Springer	Organic-Inorganic Halide Perovskite Photovoltaics	2016
(3)	GERASIMOS KONSTANTATOS	Cambridge University Press	Colloidal Quantum Dot Optoelectronics and Photovoltaics	2013

[Reference books]

(1)	Author	Publisher	Textbook	Issued year
(1)				
(2)				
(3)				
(4)				
(5)				

[Other books]

[6] Weekly lesson plans

First week	Introduction
Second week	Saturated polymer, Semiconducting/metallic polymer, Polyethylene vs. Polyacetylene
Third week	1 Bonding, SP3 hybridization, Bandgap, Electronic structure, Conjugated polymer
Fourth week	Conducting polymer, Metallic transport in polyaniline, Photo-induced charge transfer,
Fifth week	Type of exciton, Stokes shift, Jablonski diagram, Franck and Condon effect, Polaron
Sixth week	Bulk heterojunction, Percolation threshold, Voltage losses, Excitonic processes, optical properties of solids, Kramers-Kronig relations
Seventh week	Paper review
Eighth week	Mid-term exam
Ninth week	Molecular orientation, GIWAXS, Molecular packing
Tenth week	Hybrid perovskite materials, Tolerance factor, Ion migration, defect, Defect diffusion, activation energy, defect migration, density of states
Eleventh week	Grain boundary, Electronic structure, Ferroelectric properties, Absorption coefficient
Twelfth week	Perovskite-based electronics, Operational mechanism of perovskite solar cells
Thirteenth week	Quantum dot-based light emitting diodes, Exciton Bohr radius, Quantum confinement, Bandgap tuning, Energy transfer
Fourteenth week	Paper review
Fifteenth week	Final exam
Sixteenth week	Supplementary lectures if necessary

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Two-Phase Flow		Course Number	310805001		
Major / School Year	Dept. of Mechanical Engineering / 전학년		completion division /Grade evaluation	/		
Department/Professor	Dept. of Mechanical Engineering / 안호선		Grades/Lecture/ Practice	3	/	3 / 0
Phone Number			A weekday / class /	[08-203:금(2)(3)(4)]		
Office hours			lecture room			

[1] Outline / Purpose

Understanding two-phase flow and cultivating problem solving ability in actual field

[2] Course Learning Outcomes

Understanding two-phase flow and cultivating problem solving ability in power plant and engineering

[3] Class Delivery Method

Lecture

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
100 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
50 %	0 %	50 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

① Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Carey	Publisher	Wiley	Textbook	Two phase flow	Issued year
(2)	Author		Publisher		Textbook		Issued year
(3)	Author		Publisher		Textbook		Issued year

[Reference books]

(1)	Author		Publisher		Textbook		Issued year
(2)	Author		Publisher		Textbook		Issued year
(3)	Author		Publisher		Textbook		Issued year
(4)	Author		Publisher		Textbook		Issued year
(5)	Author		Publisher		Textbook		Issued year

[Other books]

[6] Weekly lesson plans

First week	Introduction
Second week	Mathematics for two phase flow
Third week	Basic model for analysis of two phase flow 1
Fourth week	Basic model for analysis of two phase flow 2
Fifth week	Basic model for analysis of two phase flow 3
Sixth week	Basic model for analysis of two phase flow 4
Seventh week	Quiz 1
Eighth week	Phase change basic 1
Ninth week	Phase change basic 2
Tenth week	Phase change boiling 1
Eleventh week	Phase change boiling 2
Twelfth week	Quiz 2
Thirteenth week	Phase change condensation 1
Fourteenth week	Phase change condensation 2
Fifteenth week	Final Exam
Sixteenth week	.

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Advanced Solid Mechanics	Course Number	1003084001
Major / School Year	Dept. of Mechanical Engineering / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of Mechanical Engineering / 박형범	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[08-203:월(4)(5)(6)]
Office hours		lecture room	

[1] Outline / Purpose

This course offers foundational knowledge for understanding, analyzing, and designing structures with a perspective of mechanical engineering. While the primary emphasis is on mechanical/aerospace applications, the theoretical framework and most practical examples are equally applicable to other fields of structural analysis. The course is divided into two main sections. The first covers three-dimensional elasticity theory in detail, introducing key concepts such as stress and strain, equilibrium, compatibility conditions, elastic constitutive laws, and anisotropic materials. The second section explores classical analytical methods for solving boundary value problems in isotropic linear elasticity, focusing on practical scenarios involving plane strain, plane stress, and torsion. The course then progresses to the analysis of structural components with increasing complexity, including simple beam theory, the combined effects of bending, shear, and torsion in thin-walled shell beams, and buckling phenomena.

[2] Course Learning Outcomes

The ability of formulation of mathematical models to evaluate the stress and deformations of mechanical structures.

[3] Class Delivery Method

Offline class with lecture notes

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

Mid/Final assignments without exams.

① Percentage of grade evaluation

Exam	Attendance	Assignment
0 %	20 %	80 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	O.A. Bauchau, J.I. Craig	Publisher	Springer	Textbook	Solid mechanics and its applications	Issued year
(2)	Author		Publisher		Textbook		Issued year
(3)	Author		Publisher		Textbook		Issued year

[Reference books]

(1)	Author		Publisher		Textbook		Issued year
(2)	Author		Publisher		Textbook		Issued year
(3)	Author		Publisher		Textbook		Issued year
(4)	Author		Publisher		Textbook		Issued year
(5)	Author		Publisher		Textbook		Issued year

[Other books]

[6] Weekly lesson plans

First week	Introduction
Second week	Preliminary mathematics
Third week	Module 1 – Stress and Equilibrium
Fourth week	Module 1 – Stress and Equilibrium
Fifth week	Module 2 – Kinematics of deformation and Strain
Sixth week	Module 2 – Kinematics of deformation and Strain
Seventh week	Module 3 – Constitutive Equations
Eighth week	Midterm assignment
Ninth week	Module 3 – Constitutive Equations
Tenth week	Module 4 – Boundary value problems in linear elasticity
Eleventh week	Module 4 – Boundary value problems in linear elasticity
Twelfth week	Module 5 – Material failure
Thirteenth week	Module 6 – Torsion
Fourteenth week	Module 6 – Torsion
Fifteenth week	Final assignment
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Kinematic Synthesis of Mechanism	Course Number	310839001
Major / School Year	Dept. of Mechanical Engineering / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of Mechanical Engineering / 김형근	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[08-203:화(5)(6)(7)]
Office hours		lecture room	

[1] Outline / Purpose

In this course, students will learn the contents of decision-making, path planning, and control theory for the operation of unmanned vehicles.

[2] Course Learning Outcomes

Fundamental theories and practical applications of decision-making, path-planning, and nonlinear control methodologies

[3] Class Delivery Method

Offline class (with recording)

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

① Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year

[Reference books]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year
(4)	Author	Publisher	Textbook	Issued year
(5)	Author	Publisher	Textbook	Issued year

[Other books]

[6] Weekly lesson plans

First week	TBD
Second week	TBD
Third week	TBD
Fourth week	TBD
Fifth week	TBD
Sixth week	TBD
Seventh week	TBD
Eighth week	TBD
Ninth week	TBD
Tenth week	TBD
Eleventh week	TBD
Twelfth week	TBD
Thirteenth week	TBD
Fourteenth week	TBD
Fifteenth week	TBD
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Fuel Cell Technology	Course Number	310878001
Major / School Year	Dept. of Mechanical Engineering / 전학년	completion division / Grade evaluation	/
Department/Professor	Dept. of Mechanical Engineering / 김상문	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[08-203:수(6)(7)(8)]
Office hours		lecture room	

[1] Outline / Purpose

Learning the basic principles of electrochemical energy conversion while being exposed to relevant topics in materials science, thermodynamics, and fluid mechanics.

[2] Course Learning Outcomes

Fuel cells provide one of the most efficient means for converting the chemical energy stored in a fuel to electrical energy. Fuel cells offer improved energy efficiency and reduced pollution compared to heat engines. While composed of no (or very few) moving parts, a complete fuel cell system amounts to a small chemical plant for the production of power. This course introduces students to the fundamental aspects of fuel cell systems, with emphasis placed on proton exchange membrane (PEM) and solid oxide fuel cells (SOFC). Students will learn the basic principles of electrochemical energy conversion while being exposed to relevant topics in materials science, thermodynamics, and fluid mechanics.

[3] Class Delivery Method

Lecture, Discussion, Seminar

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

① Percentage of grade evaluation

Exam	Attendance	Assignment
70 %	20 %	10 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

No.	Author	Publisher	Textbook	Issued year
(1)	R. O'Hayre, S. W. Cha, W. Collela, F. B. Prinz	Wiley	Fuel Cell Fundamentals	2016
(2)				
(3)				

[Reference books]

No.	Author	Publisher	Textbook	Issued year
(1)				
(2)				
(3)				
(4)				
(5)				

[Other books]

[6] Weekly lesson plans

First week	Introduction
Second week	Fuel Cell Thermodynamics I
Third week	Fuel Cell Thermodynamics II
Fourth week	Fuel Cell Kinetics I
Fifth week	Fuel Cell Kinetics II
Sixth week	Fuel Cell Charge Transport I
Seventh week	Fuel Cell Charge Transport II
Eighth week	Midterm Exam
Ninth week	Fuel Cell Mass Transport I
Tenth week	Fuel Cell Mass Transport II
Eleventh week	Fuel Cell Modeling I
Twelfth week	Fuel Cell Modeling II
Thirteenth week	Fuel Cell Characterization I
Fourteenth week	Fuel Cell Characterization II
Fifteenth week	Final Exam
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Experimental Stress Analysis	Course Number	310632001
Major / School Year	Dept. of Mechanical Engineering / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of Mechanical Engineering / 전태성	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[08-203:수(3)(4)(5)]
Office hours		lecture room	

[1] Outline / Purpose

This course aims to provide an advanced understanding of the fundamental principles of residual stresses and their measurements, which are of significant importance for most industrial applications including mechanical, civil, construction and aeronautical engineering.

[2] Course Learning Outcomes

1. To understand the fundamental principle of residual stresses
2. To convey an experimental background to measure residual stresses in engineering components
3. To discuss the importance of residual stress measurement in practice

[3] Class Delivery Method

This lecture course will be in English.
The course materials will be provided using ppt/pdf slides.

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
20 %	20 %	60 %	0 %	0 %	0 %	0 %	0 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
20 %	0 %	80 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

Midterm Exam: 30%
Final Exam: 30%
Presentation: 20%
Attendance: 20%

① Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학칙시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Gary S. Schajer	Publisher	Wiley	Textbook	Practical Residual Stress Measurement Methods	Issued year	2013
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	

[Reference books]

(1)	Author		Publisher		Textbook		Issued year	
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	
(4)	Author		Publisher		Textbook		Issued year	
(5)	Author		Publisher		Textbook		Issued year	

[Other books]

[6] Weekly lesson plans

First week	Introduction
Second week	Overview of Residual stresses and Their Measurement
Third week	Hole Drilling and Ring Coring
Fourth week	Deep Hole Drilling
Fifth week	The Slitting Method
Sixth week	The Contour Method
Seventh week	Applied and Residual Stress Determination using X-ray Diffraction
Eighth week	Midterm Exam
Ninth week	Synchrotron X-ray Diffraction I
Tenth week	Synchrotron X-ray Diffraction II
Eleventh week	Neutron Diffraction I
Twelfth week	Neutron Diffraction II
Thirteenth week	Magnetic Methods
Fourteenth week	Ultrasonics
Fifteenth week	Final Exam
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Advanced System Operation	Course Number	320613001
Major / School Year	Dept. of Electrical Engineering / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of Electrical Engineering / 서재완	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number	0328358434	A weekday / class /	[08-112:화(2)(3)(4)]
Office hours		lecture room	

[1] Outline / Purpose

재생에너지원의 증가와 제어가능한 화력 발전기들의 감축으로 인해 전력계통의 운용의 복잡도는 급격하게 증가하고 있다. 본 과목에서는 복잡도가 높아지는 미래 전력계통의 운용을 위한 신기술과 이론들을 학습한다.

[2] Course Learning Outcomes

- 전력계통 운용의 이해
- 전력계통 운용의 문제점 파악
- 미래 전력계통 운용을 위한 기술의 이해

[3] Class Delivery Method

- 전력계통 운용 학습
- 관련 연구 동향 조사 및 발표
- 토론

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
40 %	40 %	20 %	0 %	0 %	0 %	0 %	0 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

① Percentage of grade evaluation

Exam	Attendance	Assignment
30 %	20 %	50 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Kundur	Publisher	McGraw-Hill Companies	Textbook	Power System Stability and Control	Issued year	
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	

[Reference books]

(1)	Author		Publisher		Textbook		Issued year	
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	
(4)	Author		Publisher		Textbook		Issued year	
(5)	Author		Publisher		Textbook		Issued year	

[Other books]

[6] Weekly lesson plans

First week	전력계통 운용 개요 1
Second week	전력계통 운용 개요 2
Third week	전력계통 운용의 문제점 1
Fourth week	전력계통 운용의 문제점 2
Fifth week	전력계통 운용을 위한 신기술 소개 1
Sixth week	전력계통 운용을 위한 신기술 소개 2
Seventh week	전력계통 운용 연구 동향
Eighth week	전력계통 운용 연구 동향
Ninth week	전력계통 운용 연구 동향
Tenth week	전력계통 운용 연구 동향
Eleventh week	전력계통 운용 연구 동향
Twelfth week	전력계통 운용 연구 동향
Thirteenth week	전력계통 운용 연구 동향
Fourteenth week	전력계통 운용 연구 동향
Fifteenth week	기말고사
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Design of Future Mobility Drive Circuit	Course Number	1003053001
Major / School Year	Dept. of Electrical Engineering / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of Electrical Engineering / 최현규	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[08-112:목(2)(3)(4)]
Office hours		lecture room	

[1] Outline / Purpose

모터 구동을 위한 시뮬레이션 및 회로 제작을 위한 기본 지식을 함양한다. Matlab 및 PSpice, CAD 등의 회로 관련 시뮬레이션, 제작 툴에 대해 알아보고 상호 토론 또는 조별 활동을 통해 모터 드라이브를 위한 기본적인 인버터 제작을 학습한다.

[2] Course Learning Outcomes

학습자가 본 강의 수강 이후 이론 학습 및 실습을 통해 간단한 모터 드라이브 구동 회로 제작이 가능하도록 기술을 함양함을 목표로 한다.

[3] Class Delivery Method

강의 및 실습 (조별 활동)

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

① Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year

[Reference books]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year
(4)	Author	Publisher	Textbook	Issued year
(5)	Author	Publisher	Textbook	Issued year

[Other books]

[6] Weekly lesson plans

First week	모터 드라이브 구성 (1)
Second week	모터 드라이브 구성 (2)
Third week	기존 인버터 회로 분석 (1)
Fourth week	기존 인버터 회로 분석 (2)
Fifth week	기존 인버터 회로 분석 (3)
Sixth week	기존 인버터 회로 분석 (4)
Seventh week	전력 전자 시뮬레이션 모델 개발 (Matlab 및 Plecs) - (1)
Eighth week	전력 전자 시뮬레이션 모델 개발 (Matlab 및 Plecs) - (2)
Ninth week	전력 전자 시뮬레이션 모델 개발 (Matlab 및 Plecs) - (3)
Tenth week	회로 설계 (KiCad) - (1)
Eleventh week	회로 설계 (KiCad) - (2)
Twelfth week	회로 설계 (KiCad) - (3)
Thirteenth week	회로 설계 (KiCad) - (4)
Fourteenth week	회로 설계 (KiCad) - (5)
Fifteenth week	테스트 검증
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Engineering of Neo-conceptual Energies	Course Number	1001904001
Major / School Year	Dept. of Electrical Engineering / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of Electrical Engineering / 김준동	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[08-438:월(011)(012)(013)]
Office hours			

[1] Outline / Purpose

To understand transparent energy devices and applications.
(Prerequisite classes)

[2] Course Learning Outcomes

Intensive understanding of transparent energy topics and preparing a scientific journal paper.

[3] Class Delivery Method

Seminar and report

To register this class, please discuss your possibility with the lecturer (Professor Joondong Kim, joonkim@inu.ac.kr)

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
%	%	%	%	%	%	%	%

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
%	%	%	%	%	%	%	%

[4] Grading Policies

① Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Publisher	Textbook	To be assigned (Research papers)	Issued year
(2)	Author	Publisher	Textbook		Issued year
(3)	Author	Publisher	Textbook		Issued year

[Reference books]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year
(4)	Author	Publisher	Textbook	Issued year
(5)	Author	Publisher	Textbook	Issued year

[Other books]

[6] Weekly lesson plans

First week	Transparent energy basics-1
Second week	Transparent energy basics-2
Third week	Transparent energy basics-3
Fourth week	Special topic-1
Fifth week	Special topic-2
Sixth week	Special topic-3
Seventh week	Special topic-4
Eighth week	Midterm exam
Ninth week	Transparent energy device-1
Tenth week	Transparent energy device-2
Eleventh week	Transparent energy device-3
Twelfth week	Transparent energy device-4
Thirteenth week	Special topic-5
Fourteenth week	Special topic-6
Fifteenth week	Special topic-7
Sixteenth week	Final exam

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Advanced of Electric and Electronic Materials	Course Number	320606001
Major / School Year	Dept. of Electrical Engineering / 전학년	completion division / Grade evaluation	/
Department/Professor	Dept. of Electrical Engineering / 윤주형	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[08-112:수(6)(7)(8)]
Office hours		lecture room	

[1] Outline / Purpose

This course offers a description of how the electronic, optical and magnetic properties of materials originate from their electronic and molecular structure and how these properties can be designed for particular applications- chemical, optical and electrical sensors, data storage, solar cells, transistors and other devices. It also offers theoretical background of the electronic, optical and magnetic properties of materials, using spectroscopy, resistivity, impedance and magnetometry measurements, behavior of light in waveguides, and other characterization methods, as well as investigation of structure-property relationships through practical materials examples

[2] Course Learning Outcomes

The objective of this course is to present the fundamental concepts of physical, chemical, structural, electrical, magnetical and optical properties needed to understand the behavior of the materials.

[3] Class Delivery Method

Lecture and review scientific articles

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
60 %	20 %	20 %	0 %	0 %	0 %	0 %	0 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	80 %	0 %	0 %	0 %	20 %	0 %

[4] Grading Policies

- Midterm exam would be based on the lecture
- Assignment is presentation and submission a review article for the specific subject ; electrical and optical materials, nanoscience, related material processing, characterization, and applications

① Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Publisher	Textbook	Issued year
(1)	Author	Publisher	Textbook	Issued year
(2)	S. O. Kasap	Mc Graw Hill	Principles of eletronic materials and devices, third edition	Issued year
(3)	Author	Publisher	Textbook	Issued year

[Reference books]

(1)	Author	Publisher	Textbook	Issued year
(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year
(4)	Author	Publisher	Textbook	Issued year
(5)	Author	Publisher	Textbook	Issued year

[Other books]

[6] Weekly lesson plans

First week	.Introduction and course overview
Second week	.Introduction to quantum mechanics: Schrdinger's equation, applications to quantum dots, tunneling devices
Third week	.Band Theory of Solids– Energy Band Diagram, E–k diagram, reduced E–k diagram, insulators, semiconductors and conductors
Fourth week	.Dielectric Behaviour of Materials and its application
Fifth week	.Magnetic Behaviour of Materials and its application
Sixth week	.Optical Behaviour of Materials and its application
Seventh week	.Semiconductor
Eighth week	.Special classication of Semiconductor Materials– degenerate (semi–metal) and non–degenerate semiconductor; elemental and compound semiconductor; direct and indirect band gap material
Ninth week	.Special Materials: Nano materials
Tenth week	. Article review
Eleventh week	.Article Review
Twelfth week	..Semiconductor device applications I
Thirteenth week	..Semiconductor device applications II
Fourteenth week	..Presentation and discussion I
Fifteenth week	.Presentation and discussion II
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Power IT System	Course Number	1000388001
Major / School Year	Dept. of Electrical Engineering / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of Electrical Engineering / 이운규	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[08-112:금(7)(8)(9)]
Office hours		lecture room	

[1] Outline / Purpose

기존 전력망에 정보·통신기술을 접목함으로써, 공급과 수요 간 양방향 실시간 정보 교환을 통하여 지능형 수요관리, 신재생에너지 연계 등을 가능하도록 하는 차세대 전력인프라 시스템인 스마트그리드에 대한 이해

[2] Course Learning Outcomes

전력시스템과 통신 기술을 결합하는 스마트그리드의 중앙 집중형 및 분산형 제어의 이해, 더 나아가 다중 에이전트 및 강화학습 기초 학습

[3] Class Delivery Method

스마트그리드의 제어와 운영에 대한 기초 강의 및 토론, 이후 관련 내용에 대한 세미나 진행

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
20 %	20 %	60 %	0 %	0 %	0 %	0 %	0 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	100 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

① Percentage of grade evaluation

Exam	Attendance	Assignment
0 %	20 %	80 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year

[Reference books]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year
(4)	Author	Publisher	Textbook	Issued year
(5)	Author	Publisher	Textbook	Issued year

[Other books]

[6] Weekly lesson plans

First week	스마트그리드 시스템 개요
Second week	마이크로그리드 시스템 제어 및 운영 - 중앙집중형 - 분산형
Third week	마이크로그리드 시스템 제어 및 운영 세미나 (1)
Fourth week	마이크로그리드 시스템 제어 및 운영 세미나 (2)
Fifth week	마이크로그리드 시스템 제어 및 운영 세미나 (3)
Sixth week	마이크로그리드 시스템 제어 및 운영 세미나 (4)
Seventh week	마이크로그리드 시스템 제어 및 운영 세미나 (5)
Eighth week	중간고사
Ninth week	심층강화학습 기초 및 응용 - 강화학습 - 심층 신경망 - 심층강화학습 - 다중 심층강화학습
Tenth week	심층강화학습 응용 세미나 (1)
Eleventh week	심층강화학습 응용 세미나 (2)
Twelfth week	심층강화학습 응용 세미나 (3)
Thirteenth week	심층강화학습 응용 세미나 (4)
Fourteenth week	심층강화학습 응용 세미나 (5)
Fifteenth week	기말고사
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Plasma Applications Engineering	Course Number	1001605001
Major / School Year	Dept. of Electrical Engineering / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of Electrical Engineering / 우정민	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[08-112:금(2)(3)(4)]
Office hours		lecture room	

[1] Outline / Purpose

An introductory course will provide plasma physics and high voltage engineering with applications in semiconductor process-etch,deposition.surface treatment

[2] Course Learning Outcomes

Engineers using plasma processing need to understand a wide range of topics related to both the high voltage engineering and the properties of plasmas. This course provide the practical information an engineer needs to understand in order to successfully integrate plasmas into a process flow

[3] Class Delivery Method

We cover four major topics: Requirements for Plasmas, High Voltage Engineering, Measurement Technology, Plasma Chemistry, and Plasma Generation and Properties. Each of these topics can be studied independently.

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

Midterm exam 30%, Final Exam 30%, Attendance 20%, HW 20%

① Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	정진욱	Publisher	교문사	Textbook	플라즈마 전자공학	Issued year	
(2)	Author	정성계, 이덕출	Publisher	문웅당	Textbook	고전압공학	Issued year	
(3)	Author		Publisher		Textbook		Issued year	

[Reference books]

(1)	Author	Khalil Denno	Publisher	CRC Press	Textbook	High Voltage Engineering in Power System	Issued year	
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	
(4)	Author		Publisher		Textbook		Issued year	
(5)	Author		Publisher		Textbook		Issued year	

[Other books]

[6] Weekly lesson plans

First week	Introduction to Plasmas (1) - Definition of Plasma - Plasma as a Gas - Plasma Units and Parameters - Velocity, Speed, and Energy Distribution Functions
Second week	Introduction to Plasmas (2) - Plasma Fluid Equations - Collective Behavior of Plasma - Plasma Structure - Conditions for Plasma Existence - Motion of Charged Particles in Electromagnetic Fields - Plasma Diffusion
Third week	Electrical Breakdown - Breakdown in Air - Breakdown in Solids - Breakdown in Gases - Practical Applications
Fourth week	Plasma Generation - Plasma Equipment Configuration and Basics of Vacuum - Plasma Sources - Radio Frequency (RF) Plasma - Analysis of Plasma Sources
Fifth week	Plasma Chemical Reactions - Energy Levels of Atoms and Molecules - Chemical Reactions in Plasma - Plasma-Surface Interactions - Plasma Surface Reaction Models
Sixth week	Plasma Processes - Plasma Etching - Plasma Deposition
Seventh week	Plasma Processes - Recent Trends and Issues in Semiconductor Device Processing - Sputtering, Ion implant, Ashing - Plasma-Induced Damage
Eighth week	Midterm exam
Ninth week	High Voltage Generation Devices - DC High Voltage Generation Devices - AC High Voltage Generation Devices - Impulse Voltage and Current Generation Devices - High-Frequency High Voltage Generation Devices
Tenth week	High Voltage Measurement Methods and Instruments - Measurement of High Voltage RMS Values - Measurement of High Voltage Peak Values - Measurement of High-Frequency High Voltage
Eleventh week	High Voltage Measurement Methods and Instruments - Measurement of DC High Voltage - Measurement Methods for Impulse Voltage and Current - Measurement of High Voltage Transient Phenomena
Twelfth week	High Voltage Testing - Non-Destructive Testing Methods - Commercial High Voltage Testing
Thirteenth week	Plasma Measurement and Diagnostics - Electrical Diagnostic Methods - Optical Diagnostic Methods - RF & Microwave Measurement Techniques - Electron/Ion Energy Analysis Using Grids
Fourteenth week	Plasma Source Engineering (1) - Pulsed Plasma - Impedance Matching in Pulsed Plasma - Effects of Driving Frequency in Plasma Sources - Solutions for Uniformity in Plasma Sources - Hybrid Plasma Characteristics of ICP and CCP
Fifteenth week	Plasma Source Engineering (2) - E-H Mode Transition in ICP - Smith Chart and Impedance Matching - Measurement of Plasma Generation Efficiency - Plasma Process Monitoring
Sixteenth week	Final exam

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			

	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Understanding artificial intelligence	Course Number	1003102001
Major / School Year	Dept. of Electronics Engineering / 전학년	completion division / Grade evaluation	/
Department/Professor	/ 조환호	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[08-325:수(011-2A)(012B-3)]
Office hours		lecture room	

[1] Outline / Purpose

This course aims to provide a foundational understanding of artificial intelligence (AI) model design, including core concepts, terminology, and theory.

[2] Course Learning Outcomes

Students will develop an intuition for AI development that can be applied in research contexts.

[3] Class Delivery Method

Topics covered include supervised and unsupervised learning, data collection and preprocessing, and optimization methods. Students will also explore fundamental classifiers and regression models. Additionally, the course covers the basic structure and training mechanisms of neural networks and convolutional neural networks, which form the basis of deep learning. Theory (75 min) + Lab session (75min)

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
60 %	0 %	0 %	40 %	0 %	0 %	0 %	0 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
20 %	0 %	0 %	0 %	0 %	0 %	80 %	0 %

[4] Grading Policies

① Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year

[Reference books]

(1)	Author	Publisher	Textbook	Lecture note (CS231n - Stanford Univ)	Issued year
(2)	Author	Publisher	Textbook		Issued year
(3)	Author	Publisher	Textbook		Issued year
(4)	Author	Publisher	Textbook		Issued year
(5)	Author	Publisher	Textbook		Issued year

[Other books]

[6] Weekly lesson plans

First week	Course introduction AI field overview
Second week	Environment setup Python overview
Third week	Image classification – Nearest Neighbor Classifier – k-Nearest Neighbor Classifier – Validation sets for Hyperparameter tuning
Fourth week	Linear classifiers – Parameterized mapping from images to label scores – Interpreting a linear classifier – Loss function Multiclass Support Vector Machine loss – Practical Considerations
Fifth week	Linear classifiers – Softmax classifier – SVM vs. Softmax
Sixth week	Optimization – Strategy #1: Random Search – Strategy #2: Random Local Search – Strategy #3: Following the gradient Computing the gradient Gradient descent
Seventh week	Backpropagation – Simple expressions, interpreting the gradient – Compound expressions, chain rule, backpropagation – Intuitive understanding of backpropagation
Eighth week	Midterm
Ninth week	Neural Networks Part 1: Setting up the Architecture – Modeling one neuron – Biological motivation and connections – Single neuron as a linear classifier – Commonly used activation functions
Tenth week	Neural Networks Part 1: Setting up the Architecture – Neural Network architectures – Layer-wise organization – Example feed-forward computation – Representational power – Setting number of layers and their sizes
Eleventh week	Neural Networks Part 2: Setting up the Data and the Loss – Setting up the data and the model Data Preprocessing Weight Initialization Batch Normalization Regularization (L2/L1/Maxnorm/Dropout) – Loss functions
Twelfth week	Neural Networks Part 3: Learning and Evaluation – Loss function – Train/val accuracy – Weights:Updates ratio – Activation/Gradient distributions per layer – Visualization
Thirteenth week	Neural Networks Part 3: Learning and Evaluation – Parameter updates – First-order (SGD), momentum, Nesterov momentum – Annealing the learning rate – Second-order methods – Per-parameter adaptive learning rates (Adagrad, RMSProp)
Fourteenth week	Convolutional Neural Networks: Architectures, Convolution / Pooling Layers
Fifteenth week	Final exam
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
	assignment		submission date	

The second assignment	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Low Power VLSI Circuit Design	Course Number	1002439001
Major / School Year	Dept. of Electronics Engineering / 전학년	completion division /Grade evaluation	/
Department/Professor	/ 나태희	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[08-413:수(7)(8)(9)]
Office hours		lecture room	

[1] Outline / Purpose

Improving energy efficiency is an urgent issue to realize comfortable and sophisticated information society. As power consumption of VLSIs dominates significant portion of the total power consumption of computer systems, low-power techniques for VLSIs are greatly required. This course will focus on various low power VLSI circuit designs.

[2] Course Learning Outcomes

After this course, the students can

- (i) describe about power and VLSI.
- (ii) describe why low power VLSI is important.
- (iii) describe how can the power consumption of VLSI circuits be reduced without sacrificing performance.

[3] Class Delivery Method

Lecture, Presentation, and QnA

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

① Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year

[Reference books]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year
(4)	Author	Publisher	Textbook	Issued year
(5)	Author	Publisher	Textbook	Issued year

[Other books]

[6] Weekly lesson plans

First week	Introduction
Second week	Power and Variation
Third week	Low Power VLSI related Paper Presentation and Discussion #1
Fourth week	Low Power VLSI related Paper Presentation and Discussion #2
Fifth week	Low Power VLSI related Paper Presentation and Discussion #3
Sixth week	Low Power VLSI related Paper Presentation and Discussion #4
Seventh week	Low Voltage Low Power Consideration
Eighth week	Midterm Exam
Ninth week	Circuit Techniques for Low-Power Design
Tenth week	Circuit Techniques for Low-Power Design
Eleventh week	Low Power VLSI related Paper Presentation and Discussion #5
Twelfth week	Low Power VLSI related Paper Presentation and Discussion #6
Thirteenth week	Low Power VLSI related Paper Presentation and Discussion #7
Fourteenth week	Low Power VLSI related Paper Presentation and Discussion #8
Fifteenth week	Final Exam
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Next Generation Wireless Communication Systems	Course Number	1000081001
Major / School Year	Dept. of Electronics Engineering / 전학년	completion division / Grade evaluation	/
Department/Professor	/ 김훈	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[08-318:월(1-2A)(2B-3)]
Office hours		lecture room	

[1] Outline / Purpose

Introduction to Next-Generation Communication Technologies: 6G and AI Communication Systems

[2] Course Learning Outcomes

Understanding the Evolution of Communication Systems, Key Requirements, and Technologies for Next-Generation Communication

[3] Class Delivery Method

Lecture, Seminar, and Related Activities

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

① Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year

[Reference books]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year
(4)	Author	Publisher	Textbook	Issued year
(5)	Author	Publisher	Textbook	Issued year

[Other books]

[6] Weekly lesson plans

First week	Course Introduction
Second week	Evolution of Communication Systems (1)
Third week	Evolution of Communication Systems (2)
Fourth week	Key Technologies in Communication Systems (1)
Fifth week	Key Technologies in Communication Systems (2)
Sixth week	Key Technologies in Communication Systems (3)
Seventh week	Key Technologies in Communication Systems (4)
Eighth week	Midterm Exam
Ninth week	AI and Data (1)
Tenth week	AI and Data (2)
Eleventh week	AI and Data Issues in Next-Generation Communication (1)
Twelfth week	AI and Data Issues in Next-Generation Communication (2)
Thirteenth week	Term Project (1)
Fourteenth week	Term Project (2)
Fifteenth week	Final Exam
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Inorganic Materials Chemistry	Course Number	1002981001
Major / School Year	Dept. of Materials Science and Engineering / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of Materials Science and Engineering / 이미경	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[08-385:월(2)(3)(4)]
Office hours		lecture room	

[1] Outline / Purpose

Develop an in-depth understanding of the characteristics and applications of inorganic materials.

[2] Course Learning Outcomes

Explore the potential uses of inorganic materials based on recent research and industry trends.
Enhance problem-solving and communication skills through presentations and discussions.

[3] Class Delivery Method

Students are required to select their presentation topics in advance and consult with the professor for detailed planning. Presentations should include a Q&A session to encourage peer engagement. Active Q&A sessions are encouraged to help people figure out various topics. All presentation materials must be submitted at least 2 days before the scheduled presentation.

a) Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

b) Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

2 presentations on recent trends of interest topics and work progress using inorganic materials

a) Percentage of grade evaluation

Exam	Attendance	Assignment
0 %	20 %	80 %

· 출석성적 : 20점 만점 (학생시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
· 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Publisher	Textbook	handout	Issued year
(2)	Author	Publisher	Textbook		Issued year
(3)	Author	Publisher	Textbook		Issued year

[Reference books]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year
(4)	Author	Publisher	Textbook	Issued year
(5)	Author	Publisher	Textbook	Issued year

[Other books]

[6] Weekly lesson plans

First week	Introduction
Second week	Presentation 1,2
Third week	Presentation 3,4
Fourth week	Presentation 5,6
Fifth week	Presentation 7,8
Sixth week	Presentation 9,10
Seventh week	Presentation 11,12
Eighth week	Presentations 13, 14, 15
Ninth week	Presentation 1,2
Tenth week	Presentation 3,4
Eleventh week	Presentation 5,6
Twelfth week	Presentation 7,8
Thirteenth week	Presentation 9,10
Fourteenth week	Presentation 11,12
Fifteenth week	Presentations 13, 14, 15
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Advanced Kinetics	Course Number	LDO016001
Major / School Year	Dept. of Materials Science and Engineering / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of Materials Science and Engineering / 이한보람	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[08-385:수(1)(2)(3)]
Office hours		lecture room	

[1] Outline / Purpose

In this class, basics and fundamentals of the kinetics in chemical reactions will be introduced with some examples in surface reactions.

[2] Course Learning Outcomes

Understanding of surface chemical reactions with thin film deposition applications

[3] Class Delivery Method

Lecture, movie, presentation

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
%	%	%	%	%	%	%	%

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
%	%	%	%	%	%	%	%

[4] Grading Policies

① Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author		Publisher		Textbook		Issued year	
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	

[Reference books]

(1)	Author		Publisher		Textbook		Issued year	
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	
(4)	Author		Publisher		Textbook		Issued year	
(5)	Author		Publisher		Textbook		Issued year	

[Other books]

[6] Weekly lesson plans

First week	Mole Balances
Second week	Conversion and Reactor Sizing
Third week	Rate Laws and Stoichiometry
Fourth week	Isothermal Reactor Design
Fifth week	Collection and Analysis Rate Data
Sixth week	Multiple Reactions
Seventh week	Nonelementary Reaction Kinetics
Eighth week	Mid term exam
Ninth week	Steady-State Nonisothermal Reactor Design
Tenth week	Unsteady-State Nonisothermal Reactor Design
Eleventh week	Catalysis and Catalytic Reactors
Twelfth week	External Diffusion Effects on Heterogeneous Reactions
Thirteenth week	Diffusion and Reaction in Porous Catalysts
Fourteenth week	Distributions of Residence Times for Chemical Reactors
Fifteenth week	Final exam
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Materials modeling and simulation	Course Number	1002543001
Major / School Year	Dept. of Materials Science and Engineering / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of Materials Science and Engineering / 강영호	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[08-503:수(5)(6)(7)]
Office hours		lecture room	

[1] Outline / Purpose

This course aims to learn about theoretical background behind the electronic structure calculations.

[2] Course Learning Outcomes

- Basics of quantum mechanics
- A way to solve solid-state problems
- Fundamentals of density functional theory

[3] Class Delivery Method

Power point and writing board.

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

① Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Publisher	Textbook	Handout	Issued year
(2)	Author	Publisher	Textbook		Issued year
(3)	Author	Publisher	Textbook		Issued year

[Reference books]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year
(4)	Author	Publisher	Textbook	Issued year
(5)	Author	Publisher	Textbook	Issued year

[Other books]

[6] Weekly lesson plans

First week	Course overview
Second week	Basics to quantum mechanics 1
Third week	Basics to quantum mechanics 2
Fourth week	Basics to quantum mechanics 3
Fifth week	Basics to quantum mechanics 4
Sixth week	Solid-state physics 1
Seventh week	Solid-state physics 2
Eighth week	Midterm
Ninth week	Solid-state physics 3
Tenth week	Solid-state physics 4
Eleventh week	Introduction to density functional theory 1
Twelfth week	Introduction to density functional theory 2
Thirteenth week	Introduction to density functional theory 3
Fourteenth week	Introduction to density functional theory 4
Fifteenth week	Finals
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Artificial Intelligence and Safety Management	Course Number	1003104001		
Major / School Year	Dept. of Safety Engineering / 전학년	completion division / Grade evaluation	/		
Department/Professor	Dept. of Safety Engineering / 오태근	Grades/Lecture/ Practice	3	/	3 / 0
Phone Number		A weekday / class / lecture room	[08-534:수(041)(042)(043)]		
Office hours					

[1] Outline / Purpose

This course aims to learn the basic theory of artificial intelligence and apply it to improve the ability to apply AI technology in the overall safety field, and to cultivate practical skills. Students can learn specific cases and examples that can be applied to the field, and through these

[2] Course Learning Outcomes

This course can develop practical skills that are suitable for students. The constantly evolving field of artificial intelligence (AI) is rapidly changing numerous industries, and industrial safety is no exception. It covers comprehensive content on introducing AI for industrial safety and in-depth on the practical application of AI. Through a series of modules, it introduces a thorough understanding of various types of AI and how to utilize them to mitigate risks, prevent accidents, and promote a safety culture within an organization.

[3] Class Delivery Method

There will be three hour lectures a week. Student attendance is necessary to maximize the learning experience. Lectures will be used for presenting new concepts. Lecture notes will be available for download from the course's Web site. In addition, reading assignments from the course textbook will be given for each lecture. The learning will be aided with E-learning for this course.

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
70 %	20 %	10 %	0 %	0 %	0 %	0 %	0 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
10 %	0 %	90 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

Grades will be based on homework assignments given each class period and collected the following class meeting. Two exams given during the semester on the day specified in the course outline. Letter grades will be awarded on the basis of total scores:

① Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Publisher	Textbook	Issued year
(1)	Mohammad Yazdi	CRC Press	Artificial Intelligence in Workplace Health and Safety	
(2)				
(3)				

[Reference books]

(1)	Author	Publisher	Textbook	Issued year
(1)				
(2)				
(3)				
(4)				
(5)				

[Other books]

[6] Weekly lesson plans

First week	Purpose of AI Safety Management
Second week	Key Elements of AI Safety Management
Third week	Evaluation Perspectives on AI Safety Management
Fourth week	Scope of Evaluations on AI Safety Management
Fifth week	Details of Evaluation Perspectives
Sixth week	Prevention of Misinformation, Disinformation and Manipulation
Seventh week	Addressing High-risk Use and Unintended Use
Eighth week	Midterm-Exam
Ninth week	Evaluator and the Evaluation Timing
Tenth week	Evaluator
Eleventh week	Evaluation Timing
Twelfth week	Evaluation Methods
Thirteenth week	Technical Evaluation
Fourteenth week	Tool-based Evaluation
Fifteenth week	Final-Exam
Sixteenth week	

[7] Assignments

The first assignment	assignment	solving the problems in each chapter	submission date	2025-03-07 Fri
	purpose	acquire the ability to do the AI techniques		
	procedure & notice	Each homework will be assigned in class once per week, on average. Selected problems will be graded and full solutions provided the following week.		
	references	main text book		
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Intelligent Process Control		Course Number	1002983001		
Major / School Year	Dept. of Energy and Chemical Engineering / 전학년		completion division / Grade evaluation	/		
Department/Professor	Dept. of Energy and Chemical Engineering / 김종우		Grades/Lecture/ Practice	3	/	3 / 0
Phone Number			A weekday / class /	[09-225:금(4)(5)(6)]		
Office hours			lecture room			

[1] Outline / Purpose

물질, 열 및 운동량의 전달식의 유도를 이해하고, 전달현상의 활용방법과 예제를 살펴본다. 특히 화학공정 분야에서 유체이동 중심으로 일어나는 현상들의 해석에 관한 기초 지식의 활용에 목적을 둔다. (본 수업은 내년에 공정모델링특론으로 명칭변경 예정임)

[2] Course Learning Outcomes

- 보존법칙을 통한 물질, 열 및 운동량 구성방정식 수립
- 물질, 열 및 운동량의 convective, diffusive (or viscous) 전달현상 해석
- 구성방정식을 통한 1차원 계의 해석해 유도

[3] Class Delivery Method

- 수업은 강의 위주로 이루어지며, 중요한 예제를 풀어나가며 개념이해력을 높임.

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

① Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year

[Reference books]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year
(4)	Author	Publisher	Textbook	Issued year
(5)	Author	Publisher	Textbook	Issued year

[Other books]

[6] Weekly lesson plans

First week	Introduction
Second week	Momentum Transport: Viscosity and the Mechanisms of Momentum Transport
Third week	Momentum Transport: Shell Momentum Balances and Velocity Distributions in Laminar Flow
Fourth week	Momentum Transport: Shell Momentum Balances and Velocity Distributions in Laminar Flow
Fifth week	Momentum Transport: The Equations of Change for Isothermal Systems
Sixth week	Momentum Transport: Macroscopic Balances for Isothermal Flow Systems
Seventh week	Energy Transport: Thermal Conductivity and the Mechanisms of Energy Transport
Eighth week	Energy Transport: Shell Energy Balances and Temperature Distributions in Solids and Laminar Flow
Ninth week	Energy Transport: The Equations of Change for Nonisothermal Systems
Tenth week	Energy Transport: Macroscopic Balances for Nonisothermal Systems
Eleventh week	Mass Transport: Diffusivity and the Mechanisms of Mass Transport
Twelfth week	Mass Transport: Shell Mass Balances and Concentration Distributions in Solids and in Laminar Flow
Thirteenth week	Mass Transport: The Equations of Change for Binary Mixtures
Fourteenth week	Mass Transport: Macroscopic Balances for Multicomponent Systems
Fifteenth week	Mass Transport: Macroscopic Balances for Multicomponent Systems
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Ordered Nanoporous Materials Chemistry	Course Number	1001903001
Major / School Year	Dept. of Energy and Chemical Engineering / 전학년	completion division / Grade evaluation	/
Department/Professor	Dept. of Energy and Chemical Engineering / 박민범	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[08-535:화(4)(5)(6)]
Office hours		lecture room	

[1] Outline / Purpose

분자 스케일의 규칙적인 세공을 갖는 다양한 나노 다공성 소재에 대한 합성, 특성분석 방법에 대한 논의와 에너지화학공학분야에서의 다양한 응용에 대해 다룬다.

[2] Course Learning Outcomes

분자 스케일의 규칙적인 세공을 갖는 다양한 나노 다공성 소재에 대한 합성, 특성분석 방법에 대한 논의와 에너지화학공학분야에서의 다양한 응용에 대해 다룬다.

[3] Class Delivery Method

강의 및 발표수업

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
50 %	50 %	0 %	0 %	0 %	0 %	0 %	0 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
30 %	0 %	70 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

① Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Publisher	Textbook	Issued year
(1)	Ruren Xu, et al.	John Wiley & Sons	Chemistry of zeolites and related porous materials	
(2)				
(3)				

[Reference books]

(1)	Author	Publisher	Textbook	Issued year
(1)				
(2)				
(3)				
(4)				
(5)				

[Other books]

[6] Weekly lesson plans

First week	나노다공성소재 소개
Second week	나노다공성소재 소개
Third week	나노다공성소재 소개
Fourth week	나노다공성소재 합성
Fifth week	나노다공성소재 합성
Sixth week	나노다공성소재 합성
Seventh week	나노다공성소재 특성분석
Eighth week	나노다공성소재 특성분석
Ninth week	나노다공성소재 특성분석
Tenth week	나노다공성소재 특성분석
Eleventh week	나노다공성소재 응용
Twelfth week	나노다공성소재 응용
Thirteenth week	나노다공성소재 응용
Fourteenth week	나노다공성소재 응용
Fifteenth week	기말고사
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Theory of Geoscience and Remote Sensing	Course Number	396033001
Major / School Year	Dept. of Information and Telecommunication Engineering / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of Information and Telecommunication Engineering / 강승택	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[07-206:목(1-2A)(2B-3)]
Office hours		lecture room	

[1] Outline / Purpose

The fields of safety, security, natural resources, transportation, etc. need technologies of knowing the existence of an object or distribution of objects and distances and directions of them from far away. Remote sensing technology meets the need. We will learn in the two areas, say, radar engineering and signal processing in the level of elemental subjects Electromagnetics, Mathematics, Antennas, Microwave circuits and Wireless communication systems, Linear algebra, State modelling, Probability and Statistics and the approach how to combine them. This will likely lead to take the plunge in how to see a problem as a remote sensing one, define it technically, model it, design the components and the system and test it on the basis of understanding the crux of the class right.

[2] Course Learning Outcomes

The fields of safety, security, natural resources, transportation, etc. need technologies of knowing the existence of an object or distribution of objects and distances and directions of them from far away. Remote sensing technology meets the need. We will learn in the two areas, say, radar engineering and signal processing in the level of elemental subjects Electromagnetics, Mathematics, Antennas, Microwave circuits and Wireless communication systems, Linear algebra, State modelling, Probability and Statistics and the approach how to combine them. This will likely lead to take the plunge in how to see a problem as a remote sensing one, define it technically, model it, design the components and the system and test it on the basis of understanding the crux of the class right.

[3] Class Delivery Method

Almost the entire schedule of this class will deal with theoretical matters of the core subjects of radar engineering as sector 1 and signal processing as sector 2 each and how to combine the two sectors to carry out the ultimate purpose and function of Remote Sensing in the form of lectures. And the rest is presided as discussions after group activities on devising a radar and a simple module to sense metallic objects remotely.

@ Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
80 %	10 %	0 %	10 %	0 %	0 %	0 %	0 %

ⓑ Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	80 %	0 %	10 %	0 %	10 %	0 %

[4] Grading Policies

There will be one written test or more that give students chances to explain how they can figure out questions on the theories from the lectures.

The students are expected to hand it the take-home assignments.

The way they have group activities including simple experiments will be evaluated.

@ Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Publisher		Textbook	Issued year
(1)	Josaphat Tetuko Sri Sumantyo	CRC		Airborne Circularly Polarized SAR: Theory, System Design, Hardware Implementation, and Applications	Issued year
(2)	Wen-Qin Wang /Harold Mott	CRC/IEEE Press		Multi-Antenna Synthetic Aperture Radar/Remote Sensing with Polarimetric Radar	Issued year
(3)	Sungtek Kahng et al	IEEE Press		Smart Antennas for 5G+	Issued year

[Reference books]

(1)	Author	Publisher		Textbook	Issued year
(1)					Issued year
(2)					Issued year
(3)					Issued year
(4)					Issued year

(5)	Author		Publisher		Textbook		Issued year	
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[Other books]

[6] Weekly lesson plans

First week	Introduction to Remote Sensing
Second week	Remote Sensing technology: Elemental works and systems
Third week	Electromagnetics and Microwave Engineering I
Fourth week	Microwave Engineering II
Fifth week	Wireless communication systems
Sixth week	Antenna Engineering I
Seventh week	Antenna Engineering II
Eighth week	The Mid-Terms
Ninth week	Linear Algebra and Probability Theories
Tenth week	Probability and Statistics along with Optimization and Deep Learning for AI
Eleventh week	Signal Processing I
Twelfth week	Signal Processing II
Thirteenth week	Defining kinds and formats of data and ways of their acquisition: Spectrum Analyzer and Antennas
Fourteenth week	Data mining and data analysis: Signal Processing
Fifteenth week	Quantization and Visualization of the Information based on analyzing the data
Sixteenth week	The Finals

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Compressible Fluid Dynamics	Course Number	411826001
Major / School Year	Dept. of Civil & Environmental Engineering / 전학년	completion division / Grade evaluation	/
Department/Professor	School of Urban and Environmental Engineering / 안정규	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number	0328358084	A weekday / class /	[08-337:수(011)(012)(013)]
Office hours		lecture room	

[1] Outline / Purpose

학부에서 다루었던 수리학과 수문학의 심화된 내용을 습득하는 것이 본 수업의 목적임. 물과 유체의 이동의 특성과 물리/수학적 접근방법에 대한 통찰력을 습득하는 것이 본 수업에서 주로 다루는 내용임.

[2] Course Learning Outcomes

점성에 관한 이론, 압축성, 회전성, 각종 보존방정식, 이상유체, 속도포텐셜, 난류이론 등의 유체역학 전반에 걸친 이론 및 방정식 유도와 활용법에 대하여 통찰력을 기르는 것이 목표이다.

[3] Class Delivery Method

코로나바이러스로 인하여 온라인으로 강의로 시작하여 사회적거리두기 시행의 추이를 반영할 예정임. 수업은 주로 방정식의 유도, 활동등에 대한 내용으로 판서를 중심으로 이루어짐.

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
70 %	20 %	0 %	0 %	0 %	0 %	0 %	10 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
70 %	0 %	20 %	0 %	0 %	0 %	0 %	10 %

[4] Grading Policies

① Percentage of grade evaluation

Exam	Attendance	Assignment
50 %	20 %	30 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Publisher	청문각	Textbook	유체역학	Issued year	2016
(2)	Author	Publisher		Textbook		Issued year	
(3)	Author	Publisher		Textbook		Issued year	

[Reference books]

(1)	Author	Publisher		Textbook		Issued year	
(2)	Author	Publisher		Textbook		Issued year	
(3)	Author	Publisher		Textbook		Issued year	
(4)	Author	Publisher		Textbook		Issued year	
(5)	Author	Publisher		Textbook		Issued year	

[Other books]

[6] Weekly lesson plans

First week	서론
Second week	연속방정식(I)
Third week	연속방정식(II)
Fourth week	운동량방정식(I)
Fifth week	운동량방정식(II)
Sixth week	Navier-Stokes 방정식 (I)
Seventh week	Navier-Stokes 방정식 (II)
Eighth week	중간고사
Ninth week	점성유크의 해석과 에너지 손실의 산정
Tenth week	포텐셜흐름
Eleventh week	베르누이방정식
Twelfth week	경계층 이론
Thirteenth week	난류(I)
Fourteenth week	난류(II)
Fifteenth week	기말고사
Sixteenth week	보강

[7] Assignments

The first assignment	assignment	연속방정식의 응용	submission date	
	purpose			
	procedure & notice	문제풀이후 제출		
	references			
The second assignment	assignment	운동방정식의 응용	submission date	
	purpose			
	procedure & notice	문제풀이후 제출		
	references			
The third assignment	assignment	난류해석방법	submission date	
	purpose			
	procedure & notice	문제풀이후 제출		
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Water Supply Planning and Management	Course Number	410715001
Major / School Year	Dept. of Civil & Environmental Engineering / 전학년	completion division / Grade evaluation	/
Department/Professor	School of Urban and Environmental Engineering /	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[08-220:월(041)(042)(043)]
Office hours		lecture room	

[1] Outline / Purpose

In order to supply high quality water to water distribution systems, it is necessary to manage with optimal planing and operations. In this course, students will be educated about the water supply systems for design of water distribution systems and theoretical approach for appropriate water supply systems.

[2] Course Learning Outcomes

1. Understanding water resource, water intake, water purification, water distribution systems
2. Learning the basic theories of supplying high-quality water through training about the basics and mechanism of the water supply.
3. Understanding advanced design of water supply systems by practice of pipe network design using EPA-NET simulation model

[3] Class Delivery Method

1. Conduct online & offline lecture.
2. Presentations and discussions.
3. Practice of modeling simulation and design.

㉠ Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
40 %	20 %	0 %	20 %	10 %	0 %	0 %	0 %

㉡ Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
20 %	0 %	40 %	0 %	10 %	0 %	20 %	10 %

[4] Grading Policies

㉠ Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author		Publisher		Textbook		Issued year	
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	

[Reference books]

(1)	Author		Publisher		Textbook		Issued year	
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	
(4)	Author		Publisher		Textbook		Issued year	
(5)	Author		Publisher		Textbook		Issued year	

[Other books]

[6] Weekly lesson plans

First week	Introduction
Second week	Basic of water distribution system
Third week	Water resource management
Fourth week	Theory of pipe network analysis
Fifth week	Theory of pipe network analysis
Sixth week	Water supply plan (1)
Seventh week	Water supply plan (2)
Eighth week	Water quality theories
Ninth week	Water quality analysis (1)
Tenth week	Water quality analysis (2)
Eleventh week	Valve and pump operation
Twelfth week	Practice of EPANET (1)
Thirteenth week	Practice of EPANET (2)
Fourteenth week	Management of water supply system (1)
Fifteenth week	Management of water supply system (2)
Sixteenth week	Final term

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Applied Elasticity	Course Number	410602001
Major / School Year	Dept. of Civil & Environmental Engineering / 전학년	completion division / Grade evaluation	/
Department/Professor	School of Urban and Environmental Engineering / 심형보	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[08-337:월(041)(042)(043)]
Office hours		lecture room	

[1] Outline / Purpose

To understand the basic concepts in elasticity and steel design.

[2] Course Learning Outcomes

To aid the students with capturing the key concepts in structural engineering including steel design.

[3] Class Delivery Method

Blackboard.

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

① Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Publisher	Textbook	To be announced in class	Issued year
(2)	Author	Publisher	Textbook		Issued year
(3)	Author	Publisher	Textbook		Issued year

[Reference books]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year
(4)	Author	Publisher	Textbook	Issued year
(5)	Author	Publisher	Textbook	Issued year

[Other books]

[6] Weekly lesson plans

First week	Introduction
Second week	Design of tension members
Third week	Design of compression members
Fourth week	Beam design
Fifth week	Beam design
Sixth week	Beam-column design
Seventh week	Beam-column design
Eighth week	Midterm exam
Ninth week	Design of connection
Tenth week	Elasticity
Eleventh week	Elasticity
Twelfth week	Elasticity
Thirteenth week	Elasticity
Fourteenth week	Elasticity
Fifteenth week	Final exam
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Special Topics in Soil Mechanics	Course Number	1002737001
Major / School Year	Dept. of Civil & Environmental Engineering / 전학년	completion division / Grade evaluation	/
Department/Professor	School of Urban and Environmental Engineering / 박정희	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number	01076678076	A weekday / class /	[08-220:화(0+1)(0+2)(0+3)]
Office hours		lecture room	

[1] Outline / Purpose

지반과 관련된 건설 재료로서 흙의 기본적인 종합적인 공학적 거동을 시작으로, 토질 역학을 이해하는데 필요한 공학적 용어의 명확한 정의를 소개하고, 기존 토질역학에 존재하는 한계점을 이론적 접근을 통해 이해하고자 합니다. 본 강의는 토질역학의 기본을 시작으로 흙의 기본적 성질 및 Granular material의 특성상 나타나는 토질 공학적 물성치의 불확실성 및 다양성 등을 다루고자 합니다. 또한 지반의 침하와 강도에 초점을 맞추어 지반과 관련된 건설재료로서 흙의 기본적인 종합적인 공학적 거동을 설명하고 지반의 침하와 강도를 이해하는데 필요한 공학적 용어의 명확한 정의를 소개하며 흙의 거동과 관련된 현상을 이론적 접근을 통해 이해하는데 목적을 두고 있습니다. 마지막으로 기존 토질역학에 존재하는 한계점을 파악하고 개선된 분석방법 및 물리적 모델과 관련된 지식습득에 목표를 두고 있습니다.

[2] Course Learning Outcomes

- 입자성 물질로서 흙의 거동 이해
- 기존 토질역학에 존재하는 한계점을 파악하고 개선된 분석방법과 관련된 지식의 습득
- 토질역학과 관련된 물리적모델을 사용하여 축적된 데이터 분석방법 습득
- Term-project를 통해 학술발표회 수준의 연구논문 Draft 작성법 습득

[3] Class Delivery Method

- 자체적으로 제작한 강의자료를 활용한 강론
- 토질역학과 관련된 동영상 자료 활용
- Excel을 이용하여 토질역학 현상 실시간 분석 및 이해

(a) Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
80 %	0 %	0 %	0 %	20 %	0 %	0 %	0 %

(b) Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	80 %	0 %	0 %	0 %	20 %	0 %

[4] Grading Policies

(a) Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Publisher	Textbook	Issued year
(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year

[Reference books]

(1)	Author	Holtz, Kovacs & Sheahan	Publisher	Prentice Hall	Textbook	An introduction to Geotechnical Engineering	Issued year	2010
(2)	Author	Terzaghi, Peck & Mesri	Publisher	Wiley & Sons	Textbook	Soil Mechanics in Engineering Practice	Issued year	1995
(3)	Author	Santamarina	Publisher	Wiley	Textbook	Soils and Waves	Issued year	2001
(4)	Author		Publisher		Textbook		Issued year	
(5)	Author		Publisher		Textbook		Issued year	

[Other books]

[6] Weekly lesson plans

First week	Introduction, Index & Classification Properties
Second week	Soil Classification
Third week	Clay Minerals & Soil Structure
Fourth week	Compaction
Fifth week	Capillarity, Shrinkage, Swelling, Frost Action
Sixth week	Permeability, Seepage, Effective Stress
Seventh week	Consolidation 1
Eighth week	Mid-Term Exam
Ninth week	Consolidation 2
Tenth week	Time Rate of Consolidation
Eleventh week	More Circle, Failure Theory, Stress Path Concept
Twelfth week	Shear Strength of Sand
Thirteenth week	Shear Strength of Clay
Fourteenth week	Pore Pressure Parameters, Stress Path
Fifteenth week	Final Exam
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Advanced Soil Mechanics 1	Course Number	411731001
Major / School Year	Dept. of Civil & Environmental Engineering / 전학년	completion division / Grade evaluation	/
Department/Professor	School of Urban and Environmental Engineering / 우상인	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[08-220:수(041)(042)(043)]
Office hours		lecture room	

[1] Outline / Purpose

This class "advanced soil mechanics" mainly deals with the mechanical responses of soil. The first section of the lectures will deal with the continuum mechanics including Cartesian tensors (including stress and strain), conservation laws, and stress-strain relationship to build a firm background of mechanics. The second section first introduces the critical state which is the destination of soil states upon shearing. Then the lecture will cover the dilatancy plastic volume change caused by plastic shear deformation and how it causes the peak and phase transformation. The final section will introduce basic plasticity theory and soil plasticity models.

[2] Course Learning Outcomes

- Cartesian Tensors
- Stress and Strain
- Basic Elasticity
- Shearing Response of Soil
- Critical State Soil Mechanics
- Volumetric Response of Soil
- Dilatancy, Peak, and Phase Transformation
- Basic Plasticity Models

[3] Class Delivery Method

Textbook & References

- Lecture notes
- Linear algebra & Vector calculus
- Continuum Mechanics
- Soil Mechanics

Learning Management System

- Notices about lectures will be posted in the system
- For each week, it will post lecture notes, video, and web links about topics we cover
- Please check the system as many as possible

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

① Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author		Publisher		Textbook		Issued year	
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	

[Reference books]

(1)	Author		Publisher		Textbook		Issued year	
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	

(4)	Author		Publisher		Textbook		Issued year	
(5)	Author		Publisher		Textbook		Issued year	

[Other books]

[6] Weekly lesson plans

First week	Cartesian Tensor
Second week	Stress and Strain
Third week	Elasticity
Fourth week	Basic Plasticity
Fifth week	Test 1
Sixth week	Loading Conditions
Seventh week	Mechanical Response of Sand
Eighth week	Mechanical Response of Sand
Ninth week	Mechanical Response of Sand
Tenth week	Test 2
Eleventh week	Mechanical Response of Clay
Twelfth week	Mechanical Response of Clay
Thirteenth week	Mechanical Response of Clay
Fourteenth week	Mechanical Response of Clay
Fifteenth week	Test 3
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Critical Structure Engineering 3	Course Number	411722001
Major / School Year	Dept. of Civil & Environmental Engineering / 전학년	completion division / Grade evaluation	/
Department/Professor	School of Urban and Environmental Engineering /	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[08-229:목(041)(042)(043)]
Office hours		lecture room	

[1] Outline / Purpose

This course aims to provide an understanding of the dynamic behavior of civil engineering structures. In addition, free vibration and forced vibration (harmonic, periodic, arbitrary, impulse) of structures (single- and multi-degree-of-freedom) are investigated.

[2] Course Learning Outcomes

This course teaches how to model single-degree and multiple-degree-of-freedom vibration systems and calculate the free and forced responses of the systems. Calculate the mode shapes and frequencies for the free and forced responses of vibrating systems. Also, learn how to use the finite element method for vibration analysis of structures. Apply the methods learned to a realistic engineering vibration problem and write a report on the results.

[3] Class Delivery Method

- Primarily on the classroom lectures
- Afterwards, repeat practical design exercises

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

① Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	A.K. Chopra	Publisher	Prentice Hall	Textbook	Dynamics of Structures	Issued year	
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	

[Reference books]

(1)	Author		Publisher		Textbook		Issued year	
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	
(4)	Author		Publisher		Textbook		Issued year	
(5)	Author		Publisher		Textbook		Issued year	

[Other books]

[6] Weekly lesson plans

First week	Part 1: Equation of Motion for free vibration
Second week	Equation of Motion free vibration
Third week	Response of Harmonic and Periodic Excitations
Fourth week	Response of Arbitrary, Step, and Pulse Excitation
Fifth week	Linear system
Sixth week	Inelastic System
Seventh week	Generalized SDOF System
Eighth week	Mid-term
Ninth week	Part 2 : Equation of Motion for forced vibration
Tenth week	Damping in Structure
Eleventh week	Linear System
Twelfth week	Reduction of DOF
Thirteenth week	Distributed Mass and Elasticity
Fourteenth week	Introduction to FEM
Fifteenth week	Final Exam
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Fatigue and Fracture Mechanics	Course Number	411719001
Major / School Year	Dept. of Civil & Environmental Engineering / 전학년	completion division / Grade evaluation	/
Department/Professor	School of Urban and Environmental Engineering / 이승정	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number	0328358467	A weekday / class /	[08-337:화(011)(012)(013)]
Office hours	anytime but, by appointment	lecture room	

[1] Outline / Purpose

The objective of this class is to make an introduction to the mechanics for cracks. Most of the subjects will be discussed based on the energy principle. Although the linear elastic fracture mechanics is the major interest in this class, the cohesive crack model will be also discussed. The principles of fatigue model such as S-N diagram are also covered in this class.

[2] Course Learning Outcomes

To learn the theoretical background of fatigue and fracture mechanics of solid materials
To learn the practical applications of fracture mechanics

[3] Class Delivery Method

Lectures will be given in this class using slides and blackboard. Exercise problems are also considered in this class and chosen for homework assignment.

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
70 %	0 %	20 %	0 %	0 %	0 %	0 %	10 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	80 %	0 %	0 %	0 %	0 %	20 %

[4] Grading Policies

Midterm exam (25%), final exam (25%), assignment (30%), attendance (20%)
About 2-3 assignments will be assigned in this class.

① Percentage of grade evaluation

Exam	Attendance	Assignment
50 %	20 %	30 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Seung-Jung Lee	Publisher		Textbook	lecture materials	Issued year	
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	

[Reference books]

(1)	Author	T. L. Anderson	Publisher	CRC press	Textbook	Fracture mechanics: fundamentals and applications	Issued year	
(2)	Author <td>Z. P. Bazant and J. Planas.</td> <td>Publisher <td>CRC press</td> <td>Textbook <td>Fracture and size effect in concrete and other quasibrittle materials</td> <td>Issued year</td> <td></td> </td></td>	Z. P. Bazant and J. Planas.	Publisher <td>CRC press</td> <td>Textbook <td>Fracture and size effect in concrete and other quasibrittle materials</td> <td>Issued year</td> <td></td> </td>	CRC press	Textbook <td>Fracture and size effect in concrete and other quasibrittle materials</td> <td>Issued year</td> <td></td>	Fracture and size effect in concrete and other quasibrittle materials	Issued year	
(3)	Author		Publisher		Textbook		Issued year	
(4)	Author		Publisher		Textbook		Issued year	
(5)	Author		Publisher		Textbook		Issued year	

[Other books]

[6] Weekly lesson plans

First week	Introduction
Second week	Review of basic elasticity and continuum mechanics
Third week	Stress change near a crack
Fourth week	Stress intensity factor
Fifth week	Energy approach for LEFM
Sixth week	Determination of LEFM parameters
Seventh week	LEFM for metals
Eighth week	Midterm
Ninth week	J-integral
Tenth week	Equivalent LEFM
Eleventh week	Cohesive crack model
Twelfth week	Size effect
Thirteenth week	Fatigue
Fourteenth week	Fatigue
Fifteenth week	Final exam
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Hydraulics in Rivers	Course Number	410712001
Major / School Year	Dept. of Civil & Environmental Engineering / 전학년	completion division / Grade evaluation	/
Department/Professor	School of Urban and Environmental Engineering /	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number	01067303412	A weekday / class /	[08-337:목(0+1)(0+2)(0+3)]
Office hours		lecture room	

[1] Outline / Purpose

This course provides an in-depth study of open channel flow, focusing on both theoretical and practical aspects. The primary purpose is to develop an understanding of the fundamental principles governing the behavior of fluid flow in open channels, such as rivers, canals, and drainage systems. Emphasis will be placed on the analysis of uniform, gradually varied, and rapidly varied flow, as well as unsteady flow conditions. The course integrates analytical methods with computational techniques to address real-world hydraulic engineering problems.

[2] Course Learning Outcomes

At the end of this lecture, students will be able to:

- Understand the fundamental principles and governing equations of open channel flow.
- Analyze different types of flow, including steady and unsteady, uniform and non-uniform, and critical and subcritical flows.
- Apply analytical and numerical methods to solve "open channel flow" problems.
- Design open channel systems considering flow resistance, energy principles, and hydraulic jumps.
- Utilize computational tools for simulating and analyzing complex open channel flow scenarios.

[3] Class Delivery Method

- Lectures: In-depth theoretical explanations supported by real-world case studies.
- Problem-Solving Sessions: Practical exercises to reinforce theoretical concepts.
- Laboratory/Simulation Work: Use of computational fluid dynamics (CFD) and hydraulic modeling software to analyze flow behavior.
- Assessments: Regular quizzes, assignments, mid-term exams, and a final project.

㉠ Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

㉡ Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

㉠ Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Pierre Y. Julien	Publisher	Cambridge University Press	Textbook	River Mechanics	Issued year
(2)	Author	Ven Te Chow	Publisher	McGraw-Hill Book company	Textbook	Open-Channel Hydraulics	Issued year
(3)	Author	F. M. Henderson	Publisher	Cambridge University Press	Textbook	Open Channel Flow	Issued year

[Reference books]

(1)	Author	우효섭 등	Publisher	청문각	Textbook	하천수리학	Issued year
(2)	Author	최성욱 등	Publisher	씨아이알	Textbook	난류수리학	Issued year
(3)	Author	Gijs Hoffmans	Publisher	Eburon	Textbook	The Influence of Turbulence on Soil Erosion	Issued year
(4)	Author		Publisher		Textbook		Issued year
(5)	Author		Publisher		Textbook		Issued year

[Other books]

Scour Manual (Hoffmans), Fluid Mechanics (Kundu)

[6] Weekly lesson plans

First week	Introduction to Open Channel Flow : Definition, applications, and types of open channel flows
Second week	Fluid Properties and Basic Concepts : Fluid mechanics review, hydrostatic pressure, energy principles
Third week	Classification of Open Channel Flows : Steady/unsteady, uniform/non-uniform, subcritical/supercritical + quiz #1
Fourth week	Energy and Momentum Principles : Energy equation, specific energy, momentum function
Fifth week	Uniform Flow Theory Chezy's and Manning's equations, flow resistance analysis + homework #1
Sixth week	Flow Resistance and Hydraulic Radius : Factors affecting flow resistance, roughness coefficients
Seventh week	Gradually Varied Flow (GVF) : Derivation of GVF equations, classification of flow profiles + quiz #2
Eighth week	Numerical Methods for GVF Computation Standard step method, finite difference approach
Ninth week	mid-term exam
Tenth week	Rapidly Varied Flow (RVF) : Hydraulic jumps, energy loss analysis, applications
Eleventh week	Critical Flow Concepts : Critical depth, specific energy diagrams, applications + homework #2
Twelfth week	Open Channel Design Principles : Design of channels, slope, lining materials, cross-sectional design
Thirteenth week	Unsteady Flow Analysis : Saint-Venant equations, flood routing methods
Fourteenth week	Computational Fluid Dynamics (CFD) Basics : Introduction to CFD modeling in open channel flow Case Studies and Real-World Applications : Application in flood control, urban drainage, river engineering
Fifteenth week	Final exam and course wrap-up
Sixteenth week	

[7] Assignments

The first assignment	assignment	homework-#1	submission date	2025-05-09 Fri
	purpose	understanding steady state of open channel flow		
	procedure & notice	All assignments and reports must be prepared using a word processor (e.g., Microsoft Word) and submitted in PDF format.		
	references			
The second assignment	assignment	homework-#2	submission date	2025-06-13 Fri
	purpose	understanding unsteady state of open channel flow		
	procedure & notice	All assignments and reports must be prepared using a word processor (e.g., Microsoft Word) and submitted in PDF format.		
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Mechanical Vibrations I		Course Number	1002446001		
Major / School Year	Dept. of Biomedical & Robotics Engineering / 전학년		completion division / Grade evaluation	/		
Department/Professor	/ 윤종윤		Grades/Lecture/ Practice	3	/	3 / 0
Phone Number			A weekday / class /	[08-529:화(7)(8)(9)]		
Office hours			lecture room			

[1] Outline / Purpose

This course will cover the practical issues on the basis of the fundamental knowledge of ordinary differential equations and method of constructing the mathematical models from the given mechanical system. Through this course work, students will get the fundamental knowledge of the vibration field and acquire the relevant factors to reduce the vibrations caused by the dynamic system. This fundamental concepts will be expanded from single-degree-of-freedom systems to multi-degree-of-freedom system on the basis of the modal analysis.

[2] Course Learning Outcomes

1. Acquire the fundamental knowledge about system modeling
2. Understand the basic factors of vibration connected to the system design
3. Understand and explain the dynamic characteristics with respect to the mechanical vibration

[3] Class Delivery Method

Lecture using PPT files and showing the relevant examples and problems

(a) Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
80 %	0 %	0 %	0 %	20 %	0 %	0 %	0 %

(b) Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
50 %	0 %	50 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

1. Construct the mathematical formulations from the given mechanical system
2. Understand the procedure to solve the mathematical equation with the fundamental concepts of vibration
3. Know the basic process to analyze the multi-degree-of-freedom system using the modal analysis

(a) Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	D.J. Inman	Publisher		Textbook	Engineering Vibration	Issued year	2013
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	

[Reference books]

(1)	Author	Leonard Meirovitch	Publisher	Waveland Press	Textbook	Fundamentals of Vibrations	Issued year	2010
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	
(4)	Author		Publisher		Textbook		Issued year	
(5)	Author		Publisher		Textbook		Issued year	

[Other books]

[6] Weekly lesson plans

First week	1.1. Introduction to Free Vibration 1.2. Harmonic Motion : Relevant out source will be announced at cyber.inu.ac.kr
Second week	1.2. Harmonic Motion 1.3. Viscous Damping 1.4. Modeling and Energy Methods : Relevant out source will be announced at cyber.inu.ac.kr
Third week	1.2. Harmonic Motion 1.3. Viscous Damping 1.4. Modeling and Energy Methods
Fourth week	1.4. Modeling and Energy Methods 1.5. Stiffness
Fifth week	2.1. Harmonic Excitation of Undamped Systems 2.2. Harmonic Excitation of Damped Systems
Sixth week	2.1. Harmonic Excitation of Undamped Systems 2.2. Harmonic Excitation of Damped
Seventh week	2.1. Harmonic Excitation of Undamped Systems 2.2. Harmonic Excitation of Damped 2.3. Alternative Representation
Eighth week	2.4. Base Excitation 2.5. Rotating Unbalance 2.6. Measurement
Ninth week	2.4. Base Excitation 2.5. Rotating Unbalance 2.6. Measurement 3.1. Impulse Response Function
Tenth week	3.1. Impulse Response Function 3.2. Response to an Arbitrary Input 3.3. Response to an Arbitrary Periodic Input
Eleventh week	3.3. Response to an Arbitrary Periodic Input 3.4. Transform Method 3.5. Response to Random Inputs
Twelfth week	3.5. Response to Random Inputs 3.6. Shock Spectrum 3.7. Measurement via Transfer Functions
Thirteenth week	4.1. Two-Degree-of-Freedom Model (Undamped) 4.2. Eigenvalues and Natural Frequencies
Fourteenth week	4.1. Two-Degree-of-Freedom Model (Undamped) 4.2. Eigenvalues and Natural Frequencies 4.3. Modal Analysis
Fifteenth week	4.2. Eigenvalues and Natural Frequencies 4.3. Modal Analysis
Sixteenth week	4.2. Eigenvalues and Natural Frequencies 4.3. Modal Analysis 4.4. More than Two Degrees of Freedom

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Mechanics and Control of Robots	Course Number	1001930001
Major / School Year	Dept. of Biomedical & Robotics Engineering / 전학년	completion division / Grade evaluation	/
Department/Professor	/ 박기원	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[08-529:화(4)(5)(6)]
Office hours		lecture room	

[1] Outline / Purpose

- Study forward and inverse kinematics, along with differential kinematics
- Examine robots operating in free spaces
- Kinematics of absolute and relative motion of particles and rigid bodies
- Kinetics of particles and particle systems
- Principles of work and energy, impulse and momentum, and impact
- Kinetics of rigid bodies in plane motion

[2] Course Learning Outcomes

1. Basic knowledge of control systems including feedback and feedforward control
2. Dynamics of multi-body systems
3. Develop and solve the equations of motion for a 3D rigid body
4. Determine the kinetic energy and momentum for a rigid body in planar motion
5. Nonlinear dynamics

[3] Class Delivery Method

1. Text and slides
2. Deliver the information with lectures

@ Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

⑥ Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

@ Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year

[Reference books]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year
(4)	Author	Publisher	Textbook	Issued year
(5)	Author	Publisher	Textbook	Issued year

[Other books]

[6] Weekly lesson plans

First week	1. Particle Kinematics
Second week	2. Particle Dynamics
Third week	3. Dynamics of a System of Particles
Fourth week	4. Newtonian Kinetics of a Rigid Body
Fifth week	5. Nonlinear dynamics theories
Sixth week	5. Nonlinear dynamics theories
Seventh week	5. Nonlinear dynamics theories
Eighth week	Midterm
Ninth week	6. Introduction to Analytical Mechanics
Tenth week	6. Introduction to Analytical Mechanics
Eleventh week	7. Introduction to Theory of Small Oscillations
Twelfth week	7. Introduction to Theory of Small Oscillations
Thirteenth week	Simulation project 1
Fourteenth week	Simulation project 2
Fifteenth week	Final project presentation
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Cell-derived Extracellular Vesicles	Course Number	1002639001
Major / School Year	Dept. of Biomedical & Robotics Engineering / 전학년	completion division / Grade evaluation	/
Department/Professor	/ 차재민	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[08-529:금(6)(7)(8)]
Office hours		lecture room	

[1] Outline / Purpose

살아있는 세포에서 분비되는 미세소포체는 세포막으로 봉입된 나노 사이즈의 소포체로 단백질, 유전체 등의 다양한 생체신호전달물질을 포함하고 있으며, 세포-세포 의사소통 및 주변 미세환경과의 상호 작용에 중요한 역할을 수행한다. 본 과목에서는 이러한 세포 유래 미세소포체의 개념과 이론적 배경을 학습하고, 다양한 임상분야로의 적용 노력과 차세대 치료제 개발 가능성을 조사 토론한다.

[2] Course Learning Outcomes

세포 유래 미세소포체의 biogenesis 및 생체 내 역할에 대한 분자생물학적 기전을 이해하고, 관련 분야 최신 연구동향 습득, 임상에 적용될 수 있는 범위를 고찰한다.

[3] Class Delivery Method

강의 + 논문 발표

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

① Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year

[Reference books]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year
(4)	Author	Publisher	Textbook	Issued year
(5)	Author	Publisher	Textbook	Issued year

[Other books]

[6] Weekly lesson plans

First week	– introduction
Second week	– introduction to extracellular vesicle
Third week	– extracellular vesicles in regenerative medicine (1) : literature reviews on stem cell–derived extracellular vesicles
Fourth week	– extracellular vesicles in regenerative medicine (2) : literature reviews on stem cell–derived extracellular vesicles
Fifth week	– extracellular vesicles in regenerative medicine (3) : literature reviews on extracellular vesicles derived from other cells
Sixth week	– enhancing functions of extracellular vesicles (1) : literature reviews on engineering extracellular vesicles
Seventh week	– enhancing functions of extracellular vesicles (2) : literature reviews on engineering extracellular vesicles
Eighth week	midterm exam
Ninth week	– enhancing functions of extracellular vesicles (3) : literature reviews on engineered nanovesicles mimicking extracellular vesicles derived from living cells
Tenth week	– use of extracellular vesicles in clinics (1) : QC standard and clinical approval by FDA
Eleventh week	– use of extracellular vesicles in clinics (2) : clinical scale production of extracellular vesicles
Twelfth week	– biogenesis of extracellular vesicle (1)
Thirteenth week	– biogenesis of extracellular vesicle (2)
Fourteenth week	– biogenesis of extracellular vesicle (3)
Fifteenth week	final exam
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Advanced Control System Design	Course Number	1001671001
Major / School Year	Dept. of Biomedical & Robotics Engineering / 전학년	completion division / Grade evaluation	/
Department/Professor	/ 김우용	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[08-529:목(6)(7)(8)]
Office hours		lecture room	

[1] Outline / Purpose

This lecture introduces fundamental concepts for control of a class of linear systems. In order to deal with linear systems, this lecture first introduces the fundamentals of Linear Algebra. Linear control theory, including state space descriptions, controllability/observability, transfer functions, time-domain analysis, and stability are then introduced.

[2] Course Learning Outcomes

This course has been designed for students:

- 1) to be able to acquire and familiarize with the mathematic tools required for designing and analyzing dynamic systems and controls,
- 2) to learn how to apply linear system theories to mechanical systems,
- 3) to practice stability analysis and controller design for various mechanical systems.

[3] Class Delivery Method

This course consists mainly of lectures given by the instructor.

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
80 %	20 %	0 %	0 %	0 %	0 %	0 %	0 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
60 %	0 %	40 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

① Percentage of grade evaluation

Exam	Attendance	Assignment
40 %	20 %	40 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Chi-Tsong Chen	Publisher	Oxford University Press	Textbook	Linear System Theory and Design, 3rd Edition	Issued year	
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	

[Reference books]

(1)	Author		Publisher		Textbook		Issued year	
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	
(4)	Author		Publisher		Textbook		Issued year	
(5)	Author		Publisher		Textbook		Issued year	

[Other books]

[6] Weekly lesson plans

First week	Mathematical Descriptions of Systems
Second week	Fundamentals of Linear Algebra 1
Third week	Fundamentals of Linear Algebra 2
Fourth week	State-Space Solutions and Realizations 1
Fifth week	State-Space Solutions and Realizations 2
Sixth week	Stability 1
Seventh week	Stability 2
Eighth week	Midterm
Ninth week	Controllability
Tenth week	Observability
Eleventh week	Duality
Twelfth week	State Feedback
Thirteenth week	State Observer
Fourteenth week	Robust Control Methods
Fifteenth week	Optimal Control Methods
Sixteenth week	Final

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Optimum Design		Course Number	1001674001		
Major / School Year	Dept. of Biomedical & Robotics Engineering / 전학년		completion division / Grade evaluation	/		
Department/Professor	/ 박상인		Grades/Lecture/ Practice	3	/	3 / 0
Phone Number		A weekday / class /	[08-529:월(7)(8)(9)]			
Office hours		lecture room				

[1] Outline / Purpose

최적설계 기법은 제품의 설계 요구사항을 바탕으로 공학적, 수학적 지식을 기반으로 수학적 함수 최소화 문제로 정식화하여 이를 해결함으로써 최적 성능을 갖는 제품을 설계하는 기법으로 많은 공학영역에서 활용된다. 본 수업의 목적은 최적화 기법을 이해하고, 이를 공학적 설계 문제의 적용하여 해결하는 능력을 배양하는 것이다. 이를 위해, 학생들은 정식화와 수치 기법등을 배우고, 이를 실제 문제에 적용하여 해결하는 과정을 학습한다.

[2] Course Learning Outcomes

1. 최적 설계 문제의 정식화 과정을 이해하고, 적용방법을 습득한다.
2. 비제약 최적 설계 문제를 위한 수치기법을 이해하고 적용방법을 습득한다.
3. 제약 최적 설계 문제를 위한 수치기법을 이해하고 적용방법을 습득한다.
4. Excel, MATLAB등의 소프트웨어를 이용하여 실제 최적설계 문제를 해결하는 방법을 이해하고 습득한다.

[3] Class Delivery Method

강의 자료는 주로 녹화된 PPT로 진행하며 매주 실시간 화상회의를 활용하여 질의 응답 시간을 갖는다. 학기 프로젝트는 학생들의 각자 최적화 하기위한 제품을 정하고 이를 최적화하는 것으로 중간고사와 기말고사 기간중 보고서 또는 발표로 평가한다.

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
%	%	%	%	%	%	%	%

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
%	%	%	%	%	%	%	%

[4] Grading Policies

① Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Jasbir Singh Arora	Publisher	Elsevier Korea LLC	Textbook	Introduction to optimum design	Issued year	2016
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	

[Reference books]

(1)	Author		Publisher		Textbook		Issued year	
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	
(4)	Author		Publisher		Textbook		Issued year	
(5)	Author		Publisher		Textbook		Issued year	

[Other books]

[6] Weekly lesson plans

First week	* 최적 설계 입문 - 용어 - 수학적 배경 지식
Second week	* 최적 설계 문제의 정식화 - 설계 변수 - 목적함수 - 제약조건함수 - 표준설계 최적화 모형
Third week	* 도식해법과 기본 최적화 개념
Fourth week	* 최적설계 개념: 최적성 조건
Fifth week	* 최적설계 개념: 최적성 조건
Sixth week	* Excel과 MATLAB을 이용한 최적설계
Seventh week	* 비제약 최적설계의 수치해법 1 - 이론
Eighth week	중간고사 학기 프로젝트 제출 마감
Ninth week	* 비제약 최적설계의 수치해법 2 - 1차원 함수의 최적화 - 거리 탐색
Tenth week	* 비제약 최적설계의 수치해법 3 - 다차원 함수의 최적화 - 방향 탐색
Eleventh week	* 비제약 최적설계의 수치해법 4
Twelfth week	* 제약 최적 설계의 수치해법 1 - 비제약 최적화 기법을 이용한 제약 문제의 최적화
Thirteenth week	* 제약 최적 설계의 수치해법 1 - 선형 계획법
Fourteenth week	* 제약 최적 설계의 수치해법 1 - 선형 계획법 - 순차 선형 계획법
Fifteenth week	* 기말고사 *학기 프로젝트 제출 마감
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Advanced Nano Optics	Course Number	1002432001
Major / School Year	Department of Bioengineering and Nano-Bioengineering / 전학년	completion division /Grade evaluation	/
Department/Professor	Division of Bioengineering / 송영준	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[29-309:월(6)(7)(8)]
Office hours		lecture room	

[1] Outline / Purpose

나노바이오에 관한 다양한 연구주제를 살펴본다.

[2] Course Learning Outcomes

나노바이오에 관한 다양한 연구주제를 이해하는 폭넓은 사고를 하게 한다.

[3] Class Delivery Method

논문 리뷰

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

① Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year

[Reference books]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year
(4)	Author	Publisher	Textbook	Issued year
(5)	Author	Publisher	Textbook	Issued year

[Other books]

[6] Weekly lesson plans

First week	TBE
Second week	TBE
Third week	TBE
Fourth week	TBE
Fifth week	TBE
Sixth week	TBE
Seventh week	TBE
Eighth week	TBE
Ninth week	TBE
Tenth week	TBE
Eleventh week	TBE
Twelfth week	TBE
Thirteenth week	TBE
Fourteenth week	TBE
Fifteenth week	TBE
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Tissue Engineering and Stem Cell	Course Number	1001954001
Major / School Year	Department of Bioengineering and Nano-Bioengineering / 전학년	completion division /Grade evaluation	/
Department/Professor	Division of Bioengineering / 양기석	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[29-311:월(5)(6)(7)]
Office hours		lecture room	

[1] Outline / Purpose

본 강의는 인공 조직 (tissue)과 장기 (organ) 설계와 관련된 다양한 줄기 세포들의 활용과 공학적 디자인에 대해 학습하고 리뷰하는 과목입니다. 조직 재생과 응용을 위해 조직 공학의 기반 줄기 세포 연구 등에 대한 기본적인 정보들을 함께 학습하여 학생들이 새로운 아이디어를 창출하는 것을 목적으로 합니다.

수강하는 대학원 학생들은 인체 조직과 장기를 대체할 수 있는 혁신적인 기술에 대한 이해를 높이고, 조직 공학의 핵심 원리들을 습득합니다. 또한, 다양한 종류의 줄기 세포를 활용하여 조직 재생에 대한 연구와 응용 방법을 배우며, 이를 토대로 새로운 생각과 창의적인 해결책을 개발할 수 있습니다.

[2] Course Learning Outcomes

- 인체 조직과 장기를 대체하는 혁신적인 기술에 대한 이해를 증진합니다.
- 조직 공학의 핵심 원리와 방법론을 학습하여 학생들의 전문성을 향상시킵니다.
- 다양한 종류의 줄기 세포를 활용하여 조직 재생과 응용에 대한 심층적인 지식을 습득합니다.
- 학습한 지식과 기술을 바탕으로 새로운 아이디어와 창의적인 해결책을 개발하는 능력을 향상시킵니다.

[3] Class Delivery Method

1. 조직공학 및 줄기세포 공학 관련 강의
2. 중간고사 (30%) 및 관련 문헌 검색 및 발표 등 (30%)
3. 아이디어 도출 / 상호 디스커션

*참여인원 등에 따라 진행방식은 변경될 수 있음.

① Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

② Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

① Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

- 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
- 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year

[Reference books]

(1)	Author	Robert Lanza, Robert Langer, Joseph Vacanti	Publisher	Academic press	Textbook	Principles of tissue engineering 3rd edition	Issued year	2007
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	
(4)	Author		Publisher		Textbook		Issued year	
(5)	Author		Publisher		Textbook		Issued year	

[Other books]

[6] Weekly lesson plans

First week	Orientation
Second week	재생의학
Third week	줄기세포공학 I
Fourth week	줄기세포공학 II
Fifth week	생체재료와 조직공학 I
Sixth week	생체재료와 조직공학 II
Seventh week	조직체 개발 / 조절
Eighth week	중간고사
Ninth week	조직공학 (문헌조사 및 발표)
Tenth week	조직공학 (문헌조사 및 발표) (5/6 대체휴일)
Eleventh week	조직공학 (문헌조사 및 발표)
Twelfth week	재생의공학 (아이디어 발표 및 토론)
Thirteenth week	재생의공학 (아이디어 발표 및 토론)
Fourteenth week	재생의공학 (아이디어 발표 및 토론)
Fifteenth week	종강 수업 등
Sixteenth week	

[7] Assignments

The first assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2025 - 1학기

Date : 2025.02.17

Time : PM 2:46

CourseTitle	Degradable Polymer Synthesis	Course Number	1002746001
Major / School Year	Integrated Major in White Biotechnology / 전학년	completion division / Grade evaluation	/
Department/Professor	Dept. of Chemistry / 그레고리 아 이작 피터슨	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class /	[05-407:목(5)(6)(7)]
Office hours		lecture room	

[1] Outline / Purpose

The goal of this course is to provide an overview of the various methods for synthesizing degradable polymers, with an emphasis on polymers applicable to the white bio field.

[2] Course Learning Outcomes

The most important learning objective is that the student understands the various routes to obtaining biopolymers and synthetic polymers that are degradable under ideal conditions for a given polymer application. This will require the student to also learn about basic polymer chemistry concepts, various synthetic techniques, degradation mechanisms and conditions, polymer processing, and degradable polymer applications.

[3] Class Delivery Method

The course content will primarily be delivered by lecture, with opportunities for questions and discussion.

(a) Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

(b) Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

[4] Grading Policies

Mid-term exam 30%

Final exam 30%

Assignment = Project 20%

Attendance 20%

(a) Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

· 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
· 실제 수업시간수의 1/3 이상 결석한 자 및 부정행위자는 시험 등 성적에 불구 학점인정 불가 (학생시행세칙 제56조 제3항)

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year

[Reference books]

(1)	Author	Publisher	Textbook	Issued year
(2)	Author	Publisher	Textbook	Issued year
(3)	Author	Publisher	Textbook	Issued year
(4)	Author	Publisher	Textbook	Issued year
(5)	Author	Publisher	Textbook	Issued year

[Other books]

[6] Weekly lesson plans

First week	Class intro., What are degradable polymers?
Second week	History of polymers and polymer basics
Third week	Biopolymers
Fourth week	Bio- and Biochemical Polymerization
Fifth week	Step Growth Polymerization
Sixth week	Chain Growth Polymerization, Pt 1
Seventh week	Chain Growth Polymerization, Pt 2
Eighth week	Mid-term Exam
Ninth week	Post-Polymerization Modification
Tenth week	Polymer Processing
Eleventh week	Degradable Polymer Applications
Twelfth week	Class Project
Thirteenth week	Class Project
Fourteenth week	Summary and Review
Fifteenth week	Final Exam
Sixteenth week	

[7] Assignments

The first assignment	assignment	Class Project	submission date	
	purpose			
	procedure & notice	Students will present on a literature paper related to the synthesis of degradable polymers.		
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			