Syllabus

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Theory of Drama		Course Number	021711001
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		A weekday / class / lecture room	[15-102:수(6)(7)(8)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

This graduate seminar introduces major concepts in drama theory through the study of dramatic structure, performance, adaptation, spectatorship, embodiment, race, diaspora, and contemporary theatre. Rather than treating drama only as a literary genre, the course approaches drama as a form of live and mediated action shaped by text, body, space, audience, history, and cultural conflict.

The course begins with foundational questions: What makes a text dramatic? How do plot, conflict, character, dialogue, and theatrical action create meaning? How does drama differ from narrative fiction or poetry? From there, the course moves toward modern and contemporary theatre, with particular attention to Korean American and Asian American dramatic works.

Unlike a Shakespeare-centered course, this seminar includes only one Shakespeare play as a major case study: Romeo and Juliet. The play will be discussed in relation to adaptation theory and in connection with a contemporary tango version scheduled to be performed at Sungkyunkwan University on December 19. This performance-linked unit will allow students to consider how classical drama can be transformed through movement, rhythm, music, desire, bodily contact, and contemporary dramaturgy.

The main body of the course focuses on Korean American and Asian American theatre, including Young Jean Lee's Songs of the Dragons Flying to Heaven, Lloyd Suh's American Hwangap, Jiehae Park's Peerless, Hansol Jung's Wolf Play, Hansol Jung's Wild Goose Dreams, and Julia Cho's Aubergine. These plays will be used to examine how contemporary drama stages identity, family, race, migration, translation, adoption, ambition, memory, illness, food, technology, and spectatorship.

The course also includes Oscar Wilde's Salomé as a major adaptation case. Through Salomé, students will explore how a dramatic text moves across biblical narrative, fin-de-siècle aesthetics, symbolist drama, opera, dance, visual culture, and contemporary performance. This unit will connect adaptation theory with questions of desire, gaze, gender, spectatorship, censorship, and intercultural performance.

[2] Course Learning Outcomes

By the end of the semester, students will be able to:

-Understand key concepts in drama theory, including plot, action, conflict, character, dialogue, theatricality, performance, adaptation, spectatorship, and dramaturgy.
-Analyze dramatic texts as both literary works and performance structures.
-Apply drama theory to modern and contemporary English-language plays.
-Examine Korean American theatre in relation to race, diaspora, family, identity, language, and spectatorship.
-Explain how adaptation transforms dramatic meaning across media, genres, cultures, and performance styles.
-Develop a theoretically informed research paper, performance analysis, dramaturgical essay, or adaptation proposal.

[3] Class Delivery Method

This course will be conducted as a graduate seminar. Class meetings will include short lectures, close reading, student-led discussion, theoretical analysis, scene analysis, performance comparison, adaptation exercises, and research workshops.

Students are expected to complete all assigned readings before class and participate actively in discussion. Because this is a graduate-level course, students will be encouraged to connect the readings to their own research interests, including drama studies, performance studies, adaptation studies, Korean American literature, Asian American theatre, cultural studies, and creative practice.

ⓐ 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

1. Attendance and Participation — 20%
2. Weekly Response Papers — 20%
3. Midterm Presentation — 20%
4. Final Research Paper — 40%

ⓐ 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]

William Shakespeare, Romeo and Juliet
Oscar Wilde, Salomé
Young Jean Lee, Songs of the Dragons Flying to Heaven
Lloyd Suh, American Hwangap
Jiehae Park, Peerless
Hansol Jung, Wolf Play
Hansol Jung, Wild Goose Dreams
Julia Cho, Aubergine

[6] Weekly lesson plans

First week	Week 1 — Introduction: What Is Drama?
Second week	Week 2 — Plot, Action, and Conflict
Third week	Week 3 — Character, Desire, and Dialogue
Fourth week	Week 4 — Family Drama, Return, and Diaspora: Lloyd Suh's American Hwangap
Fifth week	Week 5 — Race, Stereotype, and Spectatorship: Young Jean Lee's Songs of the Dragons Flying to Heaven
Sixth week	Week 6 — Shakespeare as Adaptable Material: Romeo and Juliet
Seventh week	Week 7 — Romeo and Juliet and Tango Adaptation
Eighth week	Week 8 — Midterm Presentations
Ninth week	Week 9 — Adaptation, Ambition, and Dark Comedy: Jiehae Park's Peerless
Tenth week	Week 10 — Meritocracy, Violence, and Asian American Performance in Peerless
Eleventh week	Week 11 — Family, Adoption, Puppetry, and Animality: Hansol Jung's Wolf Play
Twelfth week	Week 12 — Diaspora, Technology, and Transnational Longing: Hansol Jung's Wild Goose Dreams
Thirteenth week	Week 13 — Food, Illness, Memory, and Care: Julia Cho's Aubergine
Fourteenth week	Week 14 — Salomé, Adaptation, and the Theatricality of Desire
Fifteenth week	Week 15 — 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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Special Topic in English Literature II		Course Number	1001806001
Major / School Year	Dept. of English Language and Literature / 전학년		completion division /Grade evaluation	/
Department/Professor	Dept. of English Language & Literature /		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[15-118B:금(7)(8)(9)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

This course examines how the Western literary canon and mythological elements are reinterpreted and expanded within contemporary media ecosystems. Moving beyond mere textual analysis, the course will focus on identifying the structures of 'transmedia storytelling,' ranging from Shakespearean foundations to modern Disney and Marvel franchises. Through this, students will cultivate the profound humanistic insight expected of English majors while developing the critical thinking and planning skills required in today's rapidly evolving content industry.

[2] Course Learning Outcomes

Students will develop the ability to extract core narrative structures from the canon and mythology and analyze the process of their transition into modern media. Furthermore, students will aim to generate transmedia proposals tailored to modern audiences using specific literary and mythological motifs, while mastering professional academic English communication and presentation skills to demonstrate expertise in the job market.

[3] Class Delivery Method

This course employs an integrated learning approach combining lectures, seminar discussions, and practical workshops to facilitate theoretical understanding, critical text analysis, and hands-on content planning skills.

ⓐ Method of Teaching

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

ⓑ Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	80 %	0 %	20 %	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
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[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	W1.1 Introduction & Orientation W1.2 What is Transmedia? (I)
Second week	W2.1 What is Transmedia? (II): The Logic of Storytelling W2.2 Case Study: Disney's World-building
Third week	W3.1 Shakespearean Roots (Selected Scenes from Hamlet) W3.2 Discussion: Analyzing Viral Shakespearean Memes
Fourth week	W4.1 Reimagining Classical Archetypes (Selected Scenes from Romeo and Juliet) W4.2 Discussion: Shakespeare and Modern Pop Culture Adaptations
Fifth week	W5.1 Canon to transmedia W5.2 Case Study: The MCU and Literary Tropes
Sixth week	W6.1 Expansion Strategies W6.2 Group Work: Mapping Out a Narrative Universe
Seventh week	W7.1 Writing Guide (STC) W7.2 Midterm Analysis Proposal (STC)
Eighth week	W8.1 Review W8.2 Midterm Exam
Ninth week	W9.1 Digital Storytelling & Fandoms W9.2 Case Study: The Role of Participatory Culture
Tenth week	W10.1 Graphic Novels & Narrative Flow W10.2 Discussion: Analyzing Sequential Art Narratives
Eleventh week	W11.1 Brand Building via Mythology W11.2 Integrating Mythic Tropes into Ad Campaigns
Twelfth week	W12.1 Content Promotion Strategies W12.2 Group Work: Developing a Transmedia Promo Plan
Thirteenth week	W13.1 Translating Practice into Theory W13.2 Final Paper revision (1)
Fourteenth week	W14.1 Structuring the Final Essay W14.2 Final Paper revision (2)
Fifteenth week	W15.1 Review W15.2 Final Paper Submission
Sixteenth week	TBD

[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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	General Phonetics		Course Number	021810001
Major / School Year	Dept. of English Language and Literature / 전학년		completion division /Grade evaluation	/
Department/Professor	Dept. of English Language & Literature / 정예지		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[15-102:화(2)(3)(4)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

[2] Course Learning Outcomes

[3] Class Delivery Method

ⓐ Method of Teaching

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

ⓑ Using Tools

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

[4] Grading Policies

ⓐ Percentage of grade evaluation

Exam	Attendance	Assignment
%	%	%

· 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	
Second week	
Third week	
Fourth week	
Fifth week	
Sixth week	
Seventh week	
Eighth week	
Ninth week	
Tenth week	
Eleventh week	
Twelfth week	
Thirteenth week	
Fourteenth week	
Fifteenth week	
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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Theories of Local Government Administration		Course Number	230659001
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		A weekday / class / lecture room	[13-404:월(야1)(야2)(야3)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

This course introduces students to the concepts and research in local governance. Local governance is a relatively new area of research within public administration, and focuses attention on how to improve service delivery as well as democratic responsiveness at local levels of government. This means that scholars in this area study both administrative and political theories and practices to draw conclusions about what works, and what does not.

The purpose of the course is to familiarize students with concepts that are important to understanding how local governance scholars arrive at the conclusions they do as to what constitutes "good governance". In this respect, there is still a great deal of debate as to what is and what is not "good" governance, and the debate is very lively between scholars in developed and developing contexts. We will first examine the governance literature (which often focuses on national rather than local governments), and then local governance literature, and then more critically, at places where that literature falls short in identifying important processes for "good" governance in the developing world.

[2] Course Learning Outcomes

By the end of the course, students should be able to:
1) Examine international reports that attempt to measure local government success and comprehend and utilize that information to answer important questions raised by the governance literature;
2) Be conversant in the major concepts that are important for assessing expected governance outcomes; and
3) Be able to answer complex questions about local governance in both developed and developing contexts.

[3] Class Delivery Method

The class will be divided between lecture and seminar, where students will be expected to answer questions and present their own ideas on readings. Depending on the class size, students will be responsible for explaining one or two research articles during the semester. The professor will give an example of how to do this during the first two weeks of class, and then it will be the students' responsibility to read and present.

By the end of the semester, students should have identified a local governance issue that they would like to explore in depth in a research paper. Students will write the research paper, including a literature review and an analysis (either of the literature or of the issue itself), and present the highlights from that paper during the last week of class (Week 15).

Policy regarding the use of AI: Since graduate students will be expected to know how to conduct their own research, papers that are written using AI for anything other than grammar and spelling correction will have to be rewritten. You may use AI to find resources for your papers, but be advised that most AI resources are old, and not necessarily indicative of current ideas in the field. AI may be used to find and analyze data, but you should be able to explain what has been done, and why you are drawing the conclusions you are about your data. In other words, AI can be a valuable tool, but it cannot substitute for your own thinking and analysis. If you are confused about the difference. please come discuss this with the professor.

ⓐ Method of Teaching

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

ⓑ Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
15 %	0 %	75 %	0 %	0 %	0 %	0 %	10 %

[4] Grading Policies

The weekly summaries will be worth a total of 40% of the total class grade, and the final paper and presentation will also be worth 40% of the total class grade. So if you present four readings, each one will be worth 10% of your grade, and the final paper will be worth 30% and the presentation will be worth 10%.

ⓐ 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]

All reading materials will be provided on the eLearning site.

[6] Weekly lesson plans

First week	Please see weekly assignments in the hard copy syllabus provided by the professor.
Second week	1
Third week	1
Fourth week	1
Fifth week	1
Sixth week	1
Seventh week	1
Eighth week	1
Ninth week	1
Tenth week	1
Eleventh week	1
Twelfth week	1
Thirteenth week	1
Fourteenth week	1
Fifteenth week	1
Sixteenth week	

[7] Assignments

The first assignment	assignment	Weekly summary assignments	submission date	
	purpose	To ensure comprehension of core concepts and ideas		
	procedure & notice	Each week a student (or students) will be assigned the role of class leader in going through the reading for that week. If there is more than one reading assigned, there will be one student presenting per reading. Students should prepare written notes and/or a powerpoint presentation		
	references			
	assignment		submission	

The second assignment		Final paper presentation	date	2026-12-14 Mon
	purpose			
	procedure & notice	Students will provide a 15-minute overview of their final research papers. The presentations will be the last day of class.		
	references			
The third assignment	assignment	Fianl paper	submission date	2026-12-15 Tue
	purpose			
	procedure & notice	Students will identify a local governance issue that they would like to explore in more detail. Papers that relate the issue and attempts to address it to class theories will receive higher scores. Papers should be no longer than 20 pages (excluding tables, references and title page). Please use responsible font and margin sizes		
	references			

Syllabus

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Crisis Communication from a Strategic Conflict Management Perspective		Course Number	1003162001
Major / School Year	Dept.of Media Communication / 전학년		completion division /Grade evaluation	/
Department/Professor	Dept. of Media and Communication / 김지선		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[13-309:목(5B-6)(7-8A)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

While organizations recognize the probability of conflicts and crises, studies have shown that many do not have any preparation or plan to deal with them. Some do not find it necessary to take preventive measures; others simply do not know where to begin, and what to do. This course aims to equip students with the necessary skills and abilities to prepare for conflicts, diagnose the nature of the conflict, crisis communication, and to recover and learn from conflicts and crises. Moreover, the students in this course will explore cutting edge approaches to the study of issues and crisis management by applying research, theory, and case examples to these situations with a goal of developing better issue identification and strategic response sets to crisis situations.

Students should also be in the habit of regularly consuming domestic and international news in general, and in particular related to crisis communication/management, public relations, advertising, and strategic communication. Good (English) sources are mainstream media like The Associated Press, Google News, Reuters, Al Jazeera, CNN, BBC, The Guardian, The New York Times, The Wall Street Journal, HuffPost, Bloomberg Businessweek, The Economist, NPR, Pew Research, etc. In addition, trade publications such as PR Daily, Public Relations Society of America's publications (i.e., PRsay Blog, Strategies & Tactics, PR Tactics, and The Strategies), PRWeek, and Advertising Age often have articles about international issues. And of course, the academic journals of these professions carry articles on international topics. I may post articles and links on our course website for other sources of international news and information related to the course.

[2] Course Learning Outcomes

- To develop a holistic view that crisis management is an ongoing process
- To sharpen understanding of key concepts, and focus our attention on the key theoretical foundations of conflict and crisis management
- To relate the readings and insights of the course to industry practices
- To develop essential skills and abilities to diagnose conflict vulnerabilities and assess appropriateness of response
- To write a research proposal about crisis communication based on class discussion

[3] Class Delivery Method

Various methods will be employed in this course: lecture, discussion, and presentation. Interactive classroom discussions will enhance learning, but are dependent on student participation.

ⓐ 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
30 %	0 %	50 %	0 %	20 %	0 %	0 %	0 %

[4] Grading Policies

ⓐ 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]

There is no required textbook in this course. Instead all required readings will be posted on the course website.

[6] Weekly lesson plans

First week	Introduction
Second week	Understanding Issues & Crises Defining Crisis Communication and Crisis Management Discuss real-world examples of both successful and failed crisis responses
Third week	Understanding Crisis Communication Theory and Practice Discuss real-world examples of both successful and failed crisis responses
Fourth week	Proactive Phase - Understanding your organization - Environment scanning/issues tracking and understanding your publics
Fifth week	Proactive Phase - Issues management and crisis planning
Sixth week	Strategic Phase
Seventh week	Reactive Phase - Crisis communication strategies
Eighth week	Midterm Exam (or Assignment)
Ninth week	Reactive Phase - Crisis communication strategies
Tenth week	Topic Discussion
Eleventh week	Recovery Phase - Discuss examples of post-crisis communication strategies
Twelfth week	Recovery Phase - Reputation management
Thirteenth week	Topics in Crisis Communication Research
Fourteenth week	Topics in Crisis Communication Research (Continued)
Fifteenth week	Presentation and Discussion of Research Proposals
Sixteenth week	

[7] Assignments

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

The third assignment	purpose	
	procedure & notice	
	references	

Syllabus

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Management Science		Course Number	510504001
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 / lecture room	[14-102:수(2)(3)(4)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

As a useful approach to evaluate and optimize the performance for all kinds of organizations (profit and non-profit), stochastic process approaches is explained and illustrated which is an area of management science. Students will be able to utilize the various stochastic process tools to evaluate and optimize the performance of organizations which they are interested in for their major study and derive the meaningful insights from the results of them.

[2] Course Learning Outcomes

Students will be able to utilize the various stochastic process approaches to evaluate and optimize the performance of organizations which they are interested in for their major study and derive the meaningful insights from the results of them for the organizations.

[3] Class Delivery Method

55% metaverse based online lectures and 45% offline lectures. 100% English lectures

ⓐ Method of Teaching

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

ⓑ Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
40 %	0 %	0 %	0 %	0 %	0 %	60 %	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	Introduction of stochastic processes
Second week	Probability theory
Third week	Probability theory
Fourth week	Probability distribution functions
Fifth week	Exponential and Poisson process
Sixth week	Exponential and Poisson process
Seventh week	Discrete Markov process
Eighth week	Discrete Markov process
Ninth week	Continuous Markov process
Tenth week	Continuous Markov process
Eleventh week	Continuous Markov process
Twelfth week	Queueing theory
Thirteenth week	Queueing theory
Fourteenth week	Queueing theory
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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Thesis Research(Business Administration)		Course Number	1002230001
Major / School Year	Dept. of Business Administration / 전학년		completion division /Grade evaluation	/
Department/Professor	Division of Business Administration / 김태훈		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[14-201:금(0ł1)(0ł2)(0ł3)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

[2] Course Learning Outcomes

[3] Class Delivery Method

ⓐ Method of Teaching

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

ⓑ Using Tools

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

[4] Grading Policies

ⓐ Percentage of grade evaluation

Exam	Attendance	Assignment
%	%	%

· 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	
Second week	
Third week	
Fourth week	
Fifth week	
Sixth week	
Seventh week	
Eighth week	
Ninth week	
Tenth week	
Eleventh week	
Twelfth week	
Thirteenth week	
Fourteenth week	
Fifteenth week	
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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Seminar in Marketing Theory		Course Number	510880001
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 / lecture room	[14-102:목(9)(야1)(야2)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

This course aims to provide graduate students majoring in business administration with opportunities for theoretical or practical exploration in the field of marketing and its key areas.

[2] Course Learning Outcomes

The objective of this course is to cultivate academic research capabilities in the field by exploring theoretical aspects of marketing, management strategy, emotional marketing, and related areas

[3] Class Delivery Method

This course will be conducted through individual student presentations and discussions. Each student is required to find marketing-related research papers, explain the theories covered in the papers, and elaborate on these theories during the class. If this aspect is well-executed, there may be no exams.

ⓐ Method of Teaching

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

ⓑ Using Tools

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

[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	will be provided	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	Marketing Concept
Second week	Presentation of Theories
Third week	Emotional Appeals
Fourth week	Special files 1
Fifth week	Special files 2
Sixth week	Entrepreneurship
Seventh week	Mid term
Eighth week	Emotional Intelligence
Ninth week	Born Global Firms
Tenth week	Psychological Ownership
Eleventh week	Marketing Strategy
Twelfth week	Online Emotional Factor
Thirteenth week	Ambidexterity
Fourteenth week	SME's strategy
Fifteenth week	Final exam
Sixteenth week	

[7] Assignments

The first assignment	assignment	Presentation	submission date	
	purpose	세미나 발표 자료의 명확한 이해와 발표 전달 능력습득		
	procedure & notice	발표시간과 설명용 파워포인트 파일 작성 및 제출		
	references			
The second assignment	assignment	독해 에세이	submission date	
	purpose	세마나 자료에 대한 명확한 이해와 토론의 적극적 참여		
	procedure & notice	논문의 구성과 내용에 대한 의견을 A4 3장 이내로 요약 하여 제출, 완성형 문장의 에세이 형식으로 하고 글꼴을 자유롭게 11포인트, 출간격은 130으로 할것		
	references			
The third assignment	assignment	문헌연구	submission date	
	purpose	마케팅의 다양한 이론을 연구하고 창의적 연구능력의 개발		
	procedure & notice	특정 주제를 선정하여 문헌연구 논문을 작성, 분량은 A4 20쪽 정도로 할것. 완성형 문장의 에세이형식으로 글자모양은 바탕으로 하고 줄간격은 180으로 할것		
	references			

Syllabus

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	IS Research		Course Number	1003235001
Major / School Year	Dept. of Business Administration / 전학년		completion division /Grade evaluation	/
Department/Professor	Division of Business Administration / 김태훈		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[14-102:화(7)(8)(9)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

[2] Course Learning Outcomes

[3] Class Delivery Method

ⓐ Method of Teaching

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

ⓑ Using Tools

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

[4] Grading Policies

ⓐ Percentage of grade evaluation

Exam	Attendance	Assignment
%	%	%

· 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	
Second week	
Third week	
Fourth week	
Fifth week	
Sixth week	
Seventh week	
Eighth week	
Ninth week	
Tenth week	
Eleventh week	
Twelfth week	
Thirteenth week	
Fourteenth week	
Fifteenth week	
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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Physics of magnetism		Course Number	1002528001
Major / School Year	Dept. of Physics / 전학년		completion division /Grade evaluation	/
Department/Professor	Dept. of Physics / 엇후 도르츠		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[05-201:목(1-2A)(2B-3)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

The aim of the course is to give a basic understanding of the central concepts in magnetism, the quantum mechanical interactions that underlie magnetic order and collective excitations in magnetic materials. The course elucidates on energy related applications of magnetism like soft magnetic materials in transformers and generators as well as within nanosciences, e.g. magnetic memories and magnetic data storage. Theoretical models that describe magnetic materials will be elucidated e g density functional theory, model Hamiltonians as the Heisenberg and Hubbard Hamiltonians and point charge models. The effect of relativistic phenomena in magnetism will also be treated, for example magnetic anisotropy, magneto-optic effects and dichroism.

[2] Course Learning Outcomes

The course gives a good basic and advanced knowledge for graduate level studies within subjects as theoretical magnetism, experimental magnetism and applications of magnetic materials.

On completion of the course, the student should be able to:

explain the central aspects of magnetic materials e g the reason for magnetic order and magnetic phenomena.
calculate the exchange interaction at different magnetic model system (for example the free electron gas and the Heitler London models).
derive the Stoner criterion, describe the wave function for magnetic excitations in the Heisenberg model and carry out calculations by means of the Hubbard model in reduced dimensions.
derive the expression for magneto crystalline anisotropy in materials by means of perturbation theory.

[3] Class Delivery Method

ppt slide, board note, computer simulation

ⓐ Method of Teaching

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

ⓑ Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
40 %	0 %	40 %	0 %	0 %	0 %	20 %	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	Stephen Blundell	Publisher	Oxford University Press	Textbook	Magnetism in Condensed Matter	Issued year	2007
(2)	Author	Richard M. Martin	Publisher	Cambrdige University Press	Textbook	Electronic Structure: Basic Theory and Practical Methods	Issued year	2008
(3)	Author	David S. Sholl Janice A. Steckel	Publisher	John Wiley & Sons, Inc.	Textbook	Density Functional Theory: A practical Introduction	Issued year	2009

[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	Bacis Theory: Quantum mechanics & Density functional theory
Third week	Bacis Theory: Quantum mechanics & Density functional theory
Fourth week	Bacis Theory: Electronic structure of a solid
Fifth week	Bacis Theory: Electronic structure of a solid
Sixth week	Bacis Theory: Magnetism and Magnetic Materials
Seventh week	Bacis Theory: Magnetism and Magnetic Materials
Eighth week	Bacis Theory: Electronic structure of magnetic materials
Ninth week	Bacis Theory: Electronic structure of magnetic materials
Tenth week	Practical course: Density functional theory implementation in magnetic materials and data analyses
Eleventh week	Practical course: Density functional theory implementation in magnetic materials and data analyses
Twelfth week	Practical course: Density functional theory implementation in magnetic materials and data analyses
Thirteenth week	Practical course: Density functional theory implementation in magnetic materials and data analyses
Fourteenth week	Practical course: Density functional theory implementation in magnetic materials and data analyses
Fifteenth week	Practical course: Density functional theory implementation in magnetic materials and data analyses
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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Advanced technologies of life science	Course Number	1001342001
Major / School Year	Dept. of Life Science / 전학년	completion division /Grade evaluation	/
Department/Professor	Division of Life Sciences / 박준태	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[41-507:목(5)(6)(7)]
Office hours		Medium of Instruction	EN

[1] Outline / Purpose

"This course focuses on writing a thesis in English.
Student will write a thesis in English based on their own data.
****Limitations: Only students with some experimental data can take this course.
If students do not have their own experimental data, they should not take this course.****
****Limited number of people: One-to-one correctional instruction is provided, so the maximum number of students is 10. ****
**** It takes a lot of time to do the homework in this class.. Therefore, students who are not prepared should not take this course.****"

[2] Course Learning Outcomes

"The goal of this class is to serve as an assistant in writing a thesis in English.
At the end of semester, you will complete a thesis writing in English.The goal is to complete a thesis."

[3] Class Delivery Method

"A certain thesis writing task is given every week, and the progress of the task is checked the following week.
****Please bring your personal laptop to class****"

ⓐ 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	Introduction
Second week	Write Abstract
Third week	Write Introduction I
Fourth week	Write Introduction II
Fifth week	Write Material & Method I
Sixth week	Write Material & Method II
Seventh week	Write Result I
Eighth week	Write Result II
Ninth week	Write Result III
Tenth week	Write Discussion I
Eleventh week	Write Discussion II
Twelfth week	Write Discussion III
Thirteenth week	Paper Review
Fourteenth week	Paper Review

Fifteenth week	No class (Final-term exam week)
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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Thesis Research(Mechanical Engineering)		Course Number	1002234001
Major / School Year	Dept. of Mechanical Engineering / 전학년		completion division /Grade evaluation	/
Department/Professor	Dept. of Mechanical Engineering / 권재성		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[08-105:월(2)(3)(4)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

대학원 논문 지도 및 연구 관련 논의

[2] Course Learning Outcomes

대학원 논문 지도 및 연구 관련 논의

[3] Class Delivery Method

대학원 논문 지도 및 연구 관련 논의

ⓐ 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
80 %	20 %	0 %

· 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	연구 수행 및 결과 분석, 논문 지도
Second week	연구 수행 및 결과 분석, 논문 지도
Third week	연구 수행 및 결과 분석, 논문 지도
Fourth week	연구 수행 및 결과 분석, 논문 지도
Fifth week	연구 수행 및 결과 분석, 논문 지도
Sixth week	연구 수행 및 결과 분석, 논문 지도
Seventh week	연구 수행 및 결과 분석, 논문 지도
Eighth week	연구 수행 및 결과 분석, 논문 지도
Ninth week	연구 수행 및 결과 분석, 논문 지도
Tenth week	연구 수행 및 결과 분석, 논문 지도
Eleventh week	연구 수행 및 결과 분석, 논문 지도
Twelfth week	연구 수행 및 결과 분석, 논문 지도
Thirteenth week	연구 수행 및 결과 분석, 논문 지도
Fourteenth week	연구 수행 및 결과 분석, 논문 지도
Fifteenth week	연구 수행 및 결과 분석, 논문 지도
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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Semiconductor Process and Equipment		Course Number	1003195001
Major / School Year	Dept. of Mechanical Engineering / 전학년		completion division /Grade evaluation	/
Department/Professor	Dept. of Mechanical Engineering / 김정호		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[08-203:목(2)(3)(4)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

This course introduces the operating principles, configurations, and applications of major semiconductor manufacturing equipment. It covers essential fabrication processes, including wafer cleaning, oxidation, deposition, photolithography, etching, doping, and metrology. Students will also examine recent developments in semiconductor equipment and process technologies through research-paper discussions and presentations.

[2] Course Learning Outcomes

Students will develop a comprehensive understanding of semiconductor fabrication processes and the equipment used in each process step. They will be able to explain the relationships among process conditions, equipment operation, and device performance. In addition, students will strengthen their ability to analyze technical issues and present recent research trends in semiconductor manufacturing.

[3] Class Delivery Method

Students will take turns presenting selected topics related to semiconductor equipment and processing technologies. Following each presentation, the instructor will provide supplementary lectures, technical explanations, and feedback. Students will also deepen their understanding through active discussions and the exchange of ideas with their classmates.

ⓐ Method of Teaching

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

- Points will be awarded based on attendance records and the level of active class participation.
- Students absent for more than 1/3 of total class hours will receive no credit regardless of presentation scores

ⓐ Percentage of grade evaluation

Exam	Attendance	Assignment
80 %	20 %	0 %

· 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	Donald. A. Neamen	Publisher	Mc-Graw Hill	Textbook	Semiconductor Physics and Devices	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	Paper presentation and analysis 1
Third week	Paper presentation and analysis 2
Fourth week	Paper presentation and analysis 3
Fifth week	Paper presentation and analysis 4
Sixth week	Paper presentation and analysis 5
Seventh week	Paper presentation and analysis 6
Eighth week	Paper presentation and analysis 7
Ninth week	Paper presentation and analysis 8
Tenth week	Paper presentation and analysis 9
Eleventh week	Paper presentation and analysis 10
Twelfth week	Paper presentation and analysis 11
Thirteenth week	Paper presentation and analysis 12
Fourteenth week	Paper presentation and analysis 13
Fifteenth week	Final-discussion
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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Advanced Theory of System Analysis		Course Number	310833001
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 / lecture room	[08-203:월(2)(3)(4)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

This course aims to provide an advanced understanding of nanoindentation, which is the most effective experimental technique in the field of micromechanics.

[2] Course Learning Outcomes

To understand the fundamental and experimental principle of nanoindentation-based micromechanics
To discuss the importance and effectiveness of nanoindentation in practice
To convey an experimental background to characterise materials using nanoindentation

[3] Class Delivery Method

This lecture will be in English.
The course materials will be research and/or review papers.
Students will use nanoindentation to characterise materials.
During the lecture, we will be discussing plenty of issues associated with nanoindentation and micromechanics.

ⓐ Method of Teaching

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

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

ⓐ 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	Fundamental theory of Nanoindentation (1)
Third week	Fundamental theory of Nanoindentation (2)
Fourth week	Fundamental theory of Nanoindentation (3)
Fifth week	Fundamental theory of Nanoindentation (4)
Sixth week	Fundamental theory of Nanoindentation (5)
Seventh week	Fundamental theory of Nanoindentation (6)
Eighth week	Midterm Exam
Ninth week	Application of Nanoindentation (1)
Tenth week	Application of Nanoindentation (2)
Eleventh week	Application of Nanoindentation (3)
Twelfth week	Practice using Nanoindentation (1)
Thirteenth week	Practice using Nanoindentation (2)
Fourteenth week	Practice using Nanoindentation (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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Energy Conversion		Course Number	310607001
Major / School Year	Dept. of Mechanical Engineering / 전학년		completion division /Grade evaluation	/
Department/Professor	Dept. of Mechanical Engineering / 이강주		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number	8046	A weekday / class / lecture room	[08-203:수(1)(2)(3)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

본 수업은 친환경 에너지 변환 기술을 다룸.
후반부에는 특히 미래 에너지 변환 기술 중 하나인 hydrovoltaic 원리에 대해 탐구함.

[2] Course Learning Outcomes

Hydrovoltaic 원리 및 적용 기술 이해

[3] Class Delivery Method

강의 및 발표

ⓐ 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	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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Viscous Fluid Mechanics		Course Number	310804001
Major / School Year	Dept. of Mechanical Engineering / 전학년		completion division /Grade evaluation	/
Department/Professor	Dept. of Mechanical Engineering / 권재성		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[08-203:화(4)(5)(6)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

Viscous Fluid Flow is a graduate-level course that provides a rigorous theoretical foundation for understanding the mechanics of incompressible viscous flows. The course focuses on the fundamental principles governing fluid motion and develops the mathematical framework necessary for analyzing engineering and scientific flow problems. Emphasis is placed on the derivation, interpretation, and application of the governing equations rather than on empirical correlations alone.

The course begins with a review of vector calculus and index notation, which serve as the mathematical language for continuum fluid mechanics. It then introduces the kinematics of fluid motion, including deformation, strain rate, and vorticity, followed by the fundamental conservation laws of mass, momentum, and energy. Building upon these principles, the constitutive behavior of Newtonian fluids is examined, leading to the derivation and physical interpretation of the Navier–Stokes equations for incompressible flows.

After establishing the governing equations, the course explores several canonical incompressible flow patterns and analytical solutions of the Navier–Stokes equations. These examples illustrate the physical significance of viscous effects, pressure-driven flows, boundary conditions, and exact solutions that form the basis for more advanced theoretical and computational analyses. The course also investigates vorticity dynamics and the mechanisms governing rotational flows, providing insight into vortex transport, generation, diffusion, and stretching.

A major objective of the course is to develop a clear understanding of high Reynolds number flows, where inertial effects dominate while viscosity remains essential within thin boundary layers and shear regions. Students will study the physical characteristics of such flows and examine the simplifying assumptions that enable ideal flow approximations. The course concludes with the analysis of two-dimensional, axisymmetric, and three-dimensional potential flows, highlighting their usefulness as approximations for practical engineering applications and as building blocks for more sophisticated flow analyses.

Throughout the semester, mathematical derivations are consistently linked to physical interpretations to cultivate a deeper understanding of fluid behavior. Students are encouraged to critically analyze the assumptions underlying theoretical models, evaluate the limitations of classical analytical solutions, and relate these concepts to modern computational fluid dynamics (CFD), experimental fluid mechanics, and current research topics. By the end of the course, students will possess the theoretical background required for advanced study and research in fluid mechanics, turbulence, heat transfer, multiphase flows, aerodynamics, and related engineering disciplines.

[2] Course Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Apply advanced mathematical tools, including vector calculus and index notation, to formulate and manipulate the governing equations of incompressible fluid flow.
2. Explain the kinematics of fluid motion by describing velocity fields, deformation, strain rates, rotation, and vorticity, and interpret their physical significance in viscous flows.
3. Derive and interpret the fundamental conservation equations for mass and momentum, and explain the assumptions underlying the continuum hypothesis and incompressible flow approximation.
4. Formulate the Navier–Stokes equations for Newtonian fluids and explain the physical meaning of each term, including inertial, pressure, viscous, and body-force contributions.
5. Analyze canonical incompressible flow problems by applying analytical solutions of the Navier–Stokes equations to understand the influence of viscosity, geometry, and boundary conditions on flow behavior.
6. Evaluate vorticity transport mechanisms by analyzing the generation, convection, diffusion, and stretching of vortices in incompressible flows.
7. Explain the characteristics of high Reynolds number flows, including boundary-layer behavior, viscous–inviscid interactions, and the conditions under which inviscid flow approximations are appropriate.
8. Apply potential flow theory to analyze two-dimensional, axisymmetric, and three-dimensional ideal flow fields, and recognize both the capabilities and limitations of ideal flow models.
9. Critically assess the assumptions and applicability of theoretical fluid models when solving practical engineering problems and interpreting experimental or computational results.
10. Develop the theoretical foundation necessary for advanced research in computational fluid dynamics (CFD), turbulence, transport phenomena, aerodynamic design, and other areas involving viscous incompressible flows.

[3] Class Delivery Method

1. All works in this class will be performed in English.
2. This class will be taught by writing on a blackboard or providing ppt slides every week.
3. All needed class materials and announcements will be uploaded on the LMS website(cyber.inu.ac.kr).
4. Prerequisites: Students are expected to have successfully completed undergraduate courses in Fluid Mechanics I and Fluid Mechanics II (or equivalent) and possess a solid understanding of the fundamental principles of fluid mechanics, including fluid statics, conservation laws, and elementary internal and external flows.

ⓐ Method of Teaching

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

ⓑ Using Tools

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

[4] Grading Policies

40% Mid-term exam
40% Final exam
20% Attendance
** Either the mid-term exam or the final exam may be replaced with students' presentation related to the course.

ⓐ Percentage of grade evaluation

Exam	Attendance	Assignment
80 %	20 %	0 %

· 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	Ronald L. Panton	Publisher	Wiley	Textbook	Incompressible 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	0. Class Orientation 1. Vector Caculus and Index Notation
Second week	2. Kinematics of Local Fluid Motion
Third week	3. Basic Laws
Fourth week	4. Newtonian Fluids and the Navier-Stokes Equations
Fifth week	5. Some Incompressible Flow Patterns(1)
Sixth week	5. Some Incompressible Flow Patterns(2)
Seventh week	6. Some Solutions of the Navier-Stokes Equations(1)
Eighth week	Mid-term exam
Ninth week	6. Some Solutions of the Navier-Stokes Equations(2)
Tenth week	7. Vorticity Dynamics
Eleventh week	8. Characteristics of High Reynolds Number Flows
Twelfth week	9. Ideal Flows in a Plane(1)
Thirteenth	9. Ideal Flows in a Plane(2)

week	
Fourteenth week	10. Axisymmetric and Three-Dimensional Ideal Flows
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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Advanced Biomechanics		Course Number	1002451001
Major / School Year	Dept. of Biomedical & Robotics Engineering / 전학년		completion division /Grade evaluation	/
Department/Professor	Department of Biomedical& Robotics Engineering / 박기원		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[09-224:금(6)(7)(8)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

The study of human movement dynamics and neuromuscular control. Analytical and numerical methods of forward and inverse dynamics to characterize human movement patterns which might be related to functional performance and neuromuscular pathology.

[2] Course Learning Outcomes

1. Apply principles of mechanics to the study of human and animal systems to better understand architectural design, forces, dynamics, and materials involved in these systems.
2. Calculate three-dimensional net joint reaction using forces and moments
3. Calculate three-dimensional joint angles of the lower limbs during gait and of the upper limbs during sports activities.
4. Interpret data provided from equipment such as cameras, force plate, and EMG to understand their value to biomedical engineering.

[3] Class Delivery Method

Lecture, Discussion, Seminar

ⓐ Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
60 %	20 %	20 %	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	Winter, David A.	Publisher	John Wiley & Sons, Inc.	Textbook	Biomechanics and Motor Control of Human Movement	Issued year	2009
(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 Biomechanics
Second week	Anthropometry and Anatomy
Third week	Signal Processing 1
Fourth week	Signal Processing 2
Fifth week	Kinematics 1
Sixth week	Kinematics 2
Seventh week	Kinetics
Eighth week	Midterm
Ninth week	Muscle mechanics
Tenth week	Gait Analysis
Eleventh week	Numerical Analysis
Twelfth week	Motion capture analysis
Thirteenth week	Inverse Dynamics 1
Fourteenth week	Inverse Dynamics 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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Advanced Linear Algebra		Course Number	1003245001
Major / School Year	Dept. of Biomedical & Robotics Engineering / 전학년		completion division /Grade evaluation	/
Department/Professor	Department of Biomedical& Robotics Engineering / 김우용		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[08-539:월(4-5A),금(4-5A)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

This course aims to provide a rigorous and theoretical understanding of linear algebra beyond the computational methods typically emphasized in undergraduate courses. Particular emphasis will be placed on understanding definitions, theorems, proofs, and the relationships among major concepts. Through this course, students will develop the mathematical foundation necessary for advanced study and applications in engineering, control, robotics, optimization, and data science.

Note: This course is a revised version of the existing graduate-level course Advanced Mathematics and covers substantially the same material. Therefore, students who have previously taken Advanced Mathematics are not eligible to enroll in this course.

[2] Course Learning Outcomes

Upon successful completion of this course, students will be able to:

1) Explain the fundamental properties of vector spaces, subspaces, bases, and dimensions.
2) Analyze linear transformations using kernels, ranges, matrix representations, and changes of basis.
3) Solve systems of linear equations using elementary operations and characterize their solution spaces.
4) Explain the theoretical properties of determinants, eigenvalues, eigenvectors, and diagonalization.
5) Apply the concepts of inner products, orthogonality, projections, and orthonormal bases.
6) Determine and interpret canonical representations of linear operators.
7) Apply advanced linear algebra concepts to mathematical and engineering problems.

[3] Class Delivery Method

The course will be delivered primarily through lectures using instructor-provided lecture notes and board-based explanations. Important definitions, theorem derivations, mathematical proofs, and representative examples will be developed step by step on the board.

ⓐ 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
80 %	20 %	0 %

· 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 Advanced Linear Algebra: Vector Spaces and Subspaces
Second week	Linear Independence, Bases, Dimensions.
Third week	Linear Transformations, Kernels, Ranges, and the Rank–Nullity Theorem
Fourth week	Matrix Representations, Coordinate Systems, and Changes of Basis
Fifth week	Elementary Operations, Elementary Matrices, and Matrix Rank
Sixth week	Systems of Linear Equations and the Structure of Solution Spaces
Seventh week	Determinants and Their Fundamental Properties
Eighth week	Midterm
Ninth week	Eigenvalues, Eigenvectors, and Characteristic Polynomials
Tenth week	Diagonalization, Invariant Subspaces, and the Cayley–Hamilton Theorem
Eleventh week	Inner Products, Norms, Orthogonality, and Orthonormal Bases
Twelfth week	Orthogonal Projections, Adjoint Operators, and the Spectral Theorem
Thirteenth week	Minimal Polynomials, Generalized Eigenvectors, and Cyclic Subspaces
Fourteenth week	Jordan and Rational Canonical Forms 1
Fifteenth week	Jordan and Rational Canonical Forms 2
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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	This graduate level		Course Number	1003263003
Major / School Year	Dept. of Biomedical & Robotics Engineering / 전학년		completion division /Grade evaluation	/
Department/Professor	Department of Biomedical& Robotics Engineering / 정현두		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[08-529:월(7)(8)(9)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

This course provides graduate students with fundamental knowledge and practical guidance for conducting independent research and preparing a scientific paper. Students will learn the overall research process, including literature review, research planning, experimental design, data analysis, result visualization, and scientific writing. Through regular research discussions and individual supervision, students will develop the skills necessary to complete a research project and prepare a manuscript suitable for publication.

[2] Course Learning Outcomes

Upon successful completion of this course, students will be able to:
- Conduct comprehensive literature reviews and identify meaningful research problems.
- Design and implement appropriate research methodologies and experimental procedures.
- Analyze, interpret, and visualize research data effectively.
- Present research progress and communicate scientific findings clearly.
- Prepare and revise a research manuscript following the conventions of international academic publications.

[3] Class Delivery Method

The course is delivered through a combination of lectures, research paper discussions, hands-on research activities, and student presentations. Students will learn the complete research workflow, including literature review, hypothesis formulation, research and experimental design, data collection and analysis, visualization of research results, simulation and validation, and scientific writing. Throughout the course, students will develop and refine their own research projects while receiving continuous feedback through in-class discussions and presentations.

ⓐ 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

Attendance: 20%
Research Presentation: 35%
Research Progress and Paper Draft: 45%

ⓐ 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 and overview of the research process
Second week	Literature review strategies and research trend analysis
Third week	Identifying research problems and formulating hypotheses
Fourth week	Research methodology and experimental design
Fifth week	Data collection and preprocessing techniques
Sixth week	Simulation methods and experimental implementation
Seventh week	Data analysis and interpretation
Eighth week	Midterm research progress presentation
Ninth week	Visualization and presentation of research results
Tenth week	Research Ethics and Responsible Use of AI in Scientific Research
Eleventh week	Writing the Introduction and Related Work
Twelfth week	Writing the Methodology, Results, and Discussion
Thirteenth week	Paper revision, responding to feedback, and publication ethics
Fourteenth week	Final research presentation and manuscript review
Fifteenth week	Research summary, future work, and final manuscript submission
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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Random Process		Course Number	1003244001
Major / School Year	Dept. of Biomedical & Robotics Engineering / 전학년		completion division /Grade evaluation	/
Department/Professor	Department of Biomedical& Robotics Engineering / 우현명		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[08-529:화(2)(3)(4)]	
Office hours	Wed 15:00 - 16:00		Medium of Instruction	EN

[1] Outline / Purpose

This graduate-level course provides a comprehensive exposition of advanced probability theory and stochastic processes. Due to the intensely rigorous nature of the theoretical formulations and proofs covered throughout the semester, students are expected to enter the course with a formidable, active background in advanced calculus and analytical reasoning. The curriculum is structurally designed to transition from foundational axioms to complex stochastic modeling. The first two-thirds of the course extensively covers abstract probability spaces, multivariate random variables, conditional expectations, and asymptotic limit theorems (including the Laws of Large Numbers and the Central Limit Theorem). The remaining one-third is entirely dedicated to the advanced theory of random processes. Students will systematically explore discrete and continuous-time Markov chains, Poisson processes, wide-sense stationarity, ergodicity, and power spectral densities. By navigating this structured outline, students will develop the analytical frameworks necessary to interpret and model complex systems in applied sciences.

[2] Course Learning Outcomes

1. Apply the axiomatic foundations of probability theory to systematically analyze complex sample spaces, probability measures, and abstract events.
2. Evaluate multivariate random variables to establish joint probability distributions, conditional expectations, and higher-order statistical moments.
3. Formulate asymptotic limit theorems using characteristic functions and various modes of convergence to understand the large-scale behavior of random variables.
4. Define and analyze discrete and continuous-time random processes, rigorously establishing the conditions for wide-sense stationarity, ergodicity, and spectral representation.
5. Model advanced stochastic frameworks, with a specific focus on calculating the transition probabilities of Markov chains and the temporal statistics of Poisson processes.

[3] Class Delivery Method

The primary mode of instruction will be comprehensive slide-based lectures designed to systematically deliver core theoretical concepts and complex mathematical derivations.

ⓐ 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

Midterm: 40%
Final exam: 40%
Attendance: 20%

ⓐ Percentage of grade evaluation

Exam	Attendance	Assignment
80 %	20 %	0 %

· 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	Erhan Cinlar	Publisher	DOVER	Textbook	Stochastic Processes (SP)	Issued year	
(2)	Author	Sheldon Ross	Publisher	PEARSON	Textbook	A First Course in Probability – Tenth edition (RV)	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 Combinatorial Analysis (RV Chapter 1)
Second week	Combinatorial Analysis (RV Chapter 1)
Third week	Axioms of Probability (RV Chapter 2)
Fourth week	Conditional Probability and Independence (RV Chapter 3)
Fifth week	Random Variables (RV Chapter 4)
Sixth week	Random Variables (RV Chapter 4)
Seventh week	Continuous Random Variables (RV Chapter 5)
Eighth week	Continuous Random Variables (RV Chapter 5)
Ninth week	Jointly Distributed Random Variables (RV Chapter 6) Properties of Expectation (RV Chapter 7)
Tenth week	Limit Theorems (RV Chapter 8)
Eleventh week	MIDTERM EXAMINATIONS
Twelfth week	Random Processes (SP Chapters 1, 2, 3)
Thirteenth week	Poisson Processes (SP Chapter 4)
Fourteenth week	Markov Chains (SP Chapters 5, 6)
Fifteenth week	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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Advanced Biomedical Instrumentation		Course Number	1003255001
Major / School Year	Dept. of Biomedical & Robotics Engineering / 전학년		completion division /Grade evaluation	/
Department/Professor	Department of Biomedical& Robotics Engineering / 조영욱		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[09-224:목(2)(3)(4)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

"이 수업은 바이오-로봇시스템공학과 대학원생들만 대상으로 진행됨을 원칙으로 합니다. 타 과 학생이 수강 시 이메일 부탁드립니다"
"This course is intended exclusively for students in the Department of Biomedical and Robotics Engineering. If students from other departments are interested in taking the course, please email to me"

[수업 개요]
본 과목은 Webster의 Medical Instrumentation을 기반으로, 인체에서 발생하는 생체신호의 물리적·전기적 원리, 센서 및 트랜스듀서, 신호조절 회로, 측정 시스템 설계를 체계적으로 학습합니다. 생체전기신호(ECG, EEG, EMG 등)와 생체물리량(압력, 온도, 변위 등)의 발생 메커니즘부터 계측 회로, 잡음 및 안전 문제까지를 포괄적으로 다룰 예정입니다. 또한 단순 이론 전달을 넘어, 실제 의료기기 및 생체계측 시스템에 적용되는 계측 아키텍처와 설계 사고방식을 논문 중심으로 강의해드리고자 합니다.

[수업 목적]
① 생체신호 계측의 기초 원리 이해
인체를 전기적·물리적 시스템으로 모델링하고, 생체신호 발생 원리와 계측의 한계를 이해한다.
전극-조직 인터페이스, 전기화학적 특성, 임피던스 모델을 설명할 수 있도록 한다.
② 의료·생체 센서 및 트랜스듀서 이해
저항형, 정전용량형, 압전형, 광학형 센서의 동작 원리와 특성을 비교·분석한다.
스트레인 게이지, RTD/thermistor, 압전 센서 등 대표적 생체계측 센서의 설계 개념을 이해한다.

③ 신호조절 및 계측 회로 설계 능력 배양
휘트스톤 브릿지, 차동 증폭기, instrumentation amplifier, 필터의 역할을 이해한다.
미소 신호 증폭, 잡음 억제, 오프셋/드리프트 문제를 고려한 계측 회로 구조를 설명할 수 있도록 한다.

④ 잡음, 간섭, 안전성에 대한 공학적 사고 함양
전원 잡음, 공통모드 잡음, 움직임 아티팩트 등의 발생 원인과 대응 방법을 이해한다.

⑤ 실제 의료·생체계측 시스템으로의 확장
ECG, EEG, EMG, 혈압, 호흡 등 대표적 임상 계측 시스템의 구성 원리를 이해한다.
웨어러블·임플란터블·로봇·바이오센서 시스템으로 확장 가능한 기반 지식을 제공한다

[2] Course Learning Outcomes

1)생체계측의 기본 원리 이해
인체에서 발생하는 생체전기·생체물리 신호의 발생 메커니즘을 이해하고, 이를 공학적 시스템으로 모델링할 수 있도록 한다.

2) 생체 센서 및 트랜스듀서 동작 원리 습득
저항형, 정전용량형, 압전형 등 대표적인 생체 센서의 물리적 원리와 특성을 이해하고, 측정 대상에 따른 센서 선택 기준을 설명할 수 있도록 한다.

3) 의료·생체계측 회로 구조 이해
휘트스톤 브릿지, 차동 증폭기, instrumentation amplifier, 필터 등 계측 회로의 역할과 동작 원리를 이해하고, 생체신호 측정에 적합한 회로 구조를 설명할 수 있도록 한다.

4) 이론과 실제 의료기기 시스템의 연계
ECG, EEG, EMG, 혈압, 체온 등 대표적인 임상 계측 시스템의 구성 원리를 이해하고, 실제 의료·바이오 디바이스와 연결하여 사고할 수 있도록 한다.

[3] Class Delivery Method

★★★★이 과목은 바이오-로봇시스템공학과의 생체계측 및 의공학 수업과 많은 내용이 비슷합니다. 해당 과목을 듣지 않아 배경지식이 없는 경우 들으면 유용합니다★★★
수업은 이론 수업 위주로 진행되며, 시험 역시 문제를 풀이하는 것 보다는 내용 이해에 대한 서술식 문항으로 평가될 계획입니다.
수업의 기본 틀은 Webster의 Biomedical instrumentation을 기본으로 하고 있으나, 그 외에 필요한 수업 내용이나 논문에서의 디바이스 개요 설명
등 같은 경우에는 제가 직접 PPT 파일로 준비한 자료로 강의해드리도록 하겠습니다.

★ 전기회로 지식을 알고있다면 (회로 개념이나 OP AMP등?) 전혀 어렵지 않습니다.

★ 출석에 대해서는 여러분들에게 크게 강요하지 않고, 학교 규정대로만 처리하겠습니다.

★ 과제에 대한 부담은 없게 하되, 시험에 많은 가중치를 두도록 하겠습니다. 수업에 열심히 임해주면 어렵지 않은 내용들이니 한 학기 동안 잘 해봐요!

ⓐ 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	Webster	Publisher	Wiley	Textbook	Biomedical Instrumentation	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]

PPT개인 강의자료

[6] Weekly lesson plans

First week	(OT)
Second week	기본 센서의 원리 이해 (저항센서, 스트레인게이지, 커패시터 센서, 피에조센서 등등)
Third week	기본 센서의 원리 이해 (저항센서, 스트레인게이지, 커패시터 센서, 피에조센서 등등)
Fourth week	생체 신호의 기본 원리 (세포 내에서의 전기신호)
Fifth week	생체 신호의 기본 원리 (세포 내에서의 전기신호)
Sixth week	생체 신호의 기본 원리 (신경신호 측정, 심장신호 측정, 근육신호 측정, 안구 신호 측정, 뇌파 측정)
Seventh week	생체 신호의 기본 원리 (신경신호 측정, 심장신호 측정, 근육신호 측정, 안구 신호 측정, 뇌파 측정)
Eighth week	중간고사
Ninth week	생체 신호계측용 전극 (전극/생체 계면, 분극 전극)
Tenth week	전극 성질과 생체 내 회로 모델, 전극을 이용한 생체 전기자극 방법
Eleventh week	전극-피부 인터페이스와 모션 아티팩트, 전극 어레이 개념
Twelfth week	화학적 바이오센서 (혈당 측정, 전기화학 센서 등)
Thirteenth week	논문 리뷰 및 발표 1

Fourteenth week	논문 리뷰 및 발표 2
Fifteenth week	논문 리뷰 및 발표 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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Design and control of grid connected offshore wind power systems		Course Number	1003158001
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 / lecture room	[08-117:수(2)(3)(4)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

This course covers wind assessment, offshore wind farm development, foundations, turbine control, submarine cables, protection, and grid integration. Students develop advanced knowledge for designing and operating offshore wind farms.

[2] Course Learning Outcomes

Students will understand offshore wind system design, turbine and converter controls, grid-code requirements, protection, cables, structural reliability, and environmental impacts, and propose practical engineering solutions.

[3] Class Delivery Method

The course combines lectures, engineering calculations, research-paper reviews, industrial case studies, simulation exercises, standards discussions, a midterm assessment, and a team-based final design 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

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

ⓐ 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 and Overview of Offshore Wind Systems
Second week	Wind Resource Assessment and Forecasting
Third week	Offshore Wind Farm Project Development
Fourth week	Offshore Wind Foundation Design
Fifth week	Electrical Engineering Principles for Wind Energy
Sixth week	Present-Day Offshore Wind Energy Scenario
Seventh week	Wind Turbine Control Systems
Eighth week	Midterm Examination and Technical Seminar
Ninth week	Materials and Structural Reliability
Tenth week	Blade Aerodynamics and Acoustics
Eleventh week	Environmental Considerations and Radar Interference
Twelfth week	Power Systems and Protection for Wind Energy Systems
Thirteenth week	Grid Integration of Offshore Wind Power
Fourteenth week	Submarine Cables and Offshore Transmission Systems
Fifteenth week	Final Design 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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Solid State Electronics		Course Number	1001358001
Major / School Year	Dept. of Electrical Engineering / 전학년		completion division /Grade evaluation	/
Department/Professor	Dept. of Electrical Engineering /		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[08-248:화(7)(8)(9)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

This course introduces the fundamental operating principles of semiconductor devices through the relationship between semiconductor physics and electronic device behavior. Students will develop a solid understanding of carrier transport, pn junctions, metal–semiconductor contacts, and field-effect structures, which form the basis of modern electronic and optoelectronic devices. The course emphasizes the physical mechanisms governing device operation and demonstrates how semiconductor materials are utilized in practical applications such as diodes, transistors, solar cells, LEDs, and photodetectors. Analytical problem solving, energy-band interpretation, and quantitative analysis are incorporated to prepare students for advanced studies in semiconductor engineering and device design.

[2] Course Learning Outcomes

Upon successful completion of this course, students will be able to:

Explain the fundamental properties of semiconductor materials, including carrier concentration, energy bands, and Fermi level.
Analyze carrier transport mechanisms such as drift, diffusion, generation, and recombination.
Interpret energy-band diagrams under equilibrium and bias conditions.
Explain the operation and electrical characteristics of pn junction diodes and metal–semiconductor contacts.
Analyze the operating principles of bipolar junction transistors (BJTs) and metal–oxide–semiconductor field-effect transistors (MOSFETs).
Evaluate the performance of semiconductor optoelectronic devices including photodiodes, LEDs, and solar cells.

[3] Class Delivery Method

The course will be delivered through a combination of lectures, board-based derivations, PowerPoint presentations, and numerical problem-solving sessions.
Energy-band diagrams, device structures, and current transport mechanisms will be explained using visual illustrations and practical examples. Students will strengthen their understanding through classroom discussions, tutorial exercises, homework assignments, quizzes, and periodic examinations. Real-world examples from modern semiconductor technologies, including integrated circuits, power electronics, photovoltaics, and optoelectronic devices, will be incorporated to bridge theoretical concepts with practical applicatios. Active student participation and independent study will be encouraged throughout the semester.

ⓐ Method of Teaching

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

ⓑ Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
40 %	0 %	60 %	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	Rober Pierret	Publisher	Pearson Education	Textbook	Semiconductor Device Fundamentals	Issued year	
(2)	Author	Donald A. Neamen	Publisher		Textbook	Neamen의 반도체 물성과 소자	Issued year	
(3)	Author		Publisher		Textbook		Issued year	

[Reference books]

(1)	Author	Charles Kittel	Publisher	John Wiley & Sons	Textbook	Introduction to Solid State Physics	Issued year	
(2)	Author	David J. Griffiths	Publisher	Cambridge University Press	Textbook	Introduction to Quantum Mechanics	Issued year	
(3)	Author	Yaduvir Singh	Publisher	IK International Pvt. Ltd.	Textbook	Semiconductor Devices	Issued year	

(4)	Author	S.M. Sze	Publisher	John Wiley & Sons	Textbook	Physics of semiconductor Devices	Issued year	
(5)	Author		Publisher		Textbook		Issued year	

[Other books]

[6] Weekly lesson plans

First week	Introduction to course
Second week	Basics of semiconductor circuits and devices
Third week	Nanotechnology -Fundamental and Applications (선택사항: 조별 혹은 개인별 에너지 소자 디자인)
Fourth week	Nanotechnology (선택사항: 조별 혹은 개인별 에너지 소자 디자인)
Fifth week	Bipolar Junction Transistor-1
Sixth week	Bipolar Junction Transistor-2
Seventh week	Bipolar Junction Transistor-3
Eighth week	Midterm Examination (중간고사)
Ninth week	Field Effect Transistor -1
Tenth week	Field Effect Transistor -2
Eleventh week	Junction Field Effect Transistor
Twelfth week	Photo Diode and switches-1
Thirteenth week	Photo Diode and switches-2
Fourteenth week	Various electronic devices and applications
Fifteenth week	Final Exam
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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Advanced Photonic Devices		Course Number	1001905001
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 / lecture room	[08-416:수(7)(8)(9)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

The purpose of this course is to teach the design and analysis of Optical system and optical components. We will learn basic optical theories and use a variety of classical examples to illustrate how optics can be engineered to our industry. Topics to be covered includes display technologies, optical sensors, IOT, energy harvesting.

[2] Course Learning Outcomes

The purpose of this course is to understand the design and analysis of optical system and optical components

[3] Class Delivery Method

Course works to understand optical components and systems
Related home works/project will be covered.

ⓐ Method of Teaching

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

ⓑ Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	60 %	0 %	0 %	0 %	40 %	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	Hands out	Issued year	
(2)	Author	Loucas Tsakalakos	Publisher	CRC press	Textbook	Nanotechnology for Photovoltaics	Issued year	2009
(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	Wave optics - Wave nature of Light - Electromagnetic wave - Dispersion
Third week	Wave optics - Fresnel Eq. - Interference - Far field analysis
Fourth week	Multi-layer Periodic System - Thin film coating - Optical properties of materials - Design of optical system: (HW) Matlab programing
Fifth week	Light Source and its applications for Semiconductor industry
Sixth week	Laser optics and its applications
Seventh week	Light Emitting Didoes and its applications
Eighth week	Midterm exam
Ninth week	Photo Detectors
Tenth week	Photo Detectors II and CCD system
Eleventh week	Optical Sensors
Twelfth week	Photovoltaic cells
Thirteenth week	Photovoltaic cells and design rules: (HW) Matlab programing
Fourteenth week	Photovoltaic module and systems
Fifteenth week	Final Project PPT presentations and review
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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Sector Coupling (P2X) Optimization		Course Number	1003261001
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 / lecture room	[08-117:금(2)(3)(4)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

This course integrates sector coupling, renewable energy, hydrogen, data centers, energy storage, and grid protection, focusing on system interconnection, stable operation, and resilient design.

[2] Course Learning Outcomes

Students will understand interactions among power, gas, hydrogen, and data infrastructures, analyze stability and protection issues, and design resilient microgrids.

[3] Class Delivery Method

The course combines lectures, case studies, standards and paper discussions, and a design 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

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

ⓐ 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 and Overview of Energy Transition
Second week	Sector Coupling and Gas Network Integration
Third week	Power System Fundamentals and Dynamics
Fourth week	Solar PV Grid Integration and Inverters
Fifth week	Wind Power Systems and Grid Codes
Sixth week	Hydroelectric Power and Pumped Storage
Seventh week	Water Electrolysis and Hydrogen Production
Eighth week	Midterm Exam and Seminar
Ninth week	Data Centers as Grid Assets
Tenth week	Grid Behavior of Large-Scale BESS and UPS Systems
Eleventh week	Grid Behavior of Fuel Cell Systems for Data Centers
Twelfth week	Electromagnetic Transients and Overvoltages
Thirteenth week	Lightning Protection, Surge Protection, and Earthing Design for Wind and Solar Systems
Fourteenth week	Electromagnetic Safety of Hydrogen Infrastructure
Fifteenth week	Final Project: Resilient Microgrid Architecture Design
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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Seminar on Numerical Analysis Techniques		Course Number	1003204001
Major / School Year	Dept. of Electrical Engineering / 전학년		completion division /Grade evaluation	/
Department/Professor	Dept. of Electrical Engineering / 이우찬		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[08-117:목(5)(6)(7)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

전자기 수치해석 기법에 대한 최신 연구 동향을 파악하는 것을 목적으로 하며, 최신 논문을 통하여 FDTD, FEM, MoM 등 전자기학 분야의 핵심 수치해석 기법의 수학적 배경과 알고리즘을 깊이 있게 이해한다.

[2] Course Learning Outcomes

고속 알고리즘, 인공지능, 고성능 컴퓨팅(HPC)을 적용한 대규모 전자기 문제 해결 최신 동향의 학습을 목표로 한다.

[3] Class Delivery Method

관련 분야의 최신 저널 아티클을 이해하여 발표하는 학생 세미나를 주된 방법으로 한다.

ⓐ 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	The Finite Element Method in Electromagnetics	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	논문 연구
Second week	논문 연구
Third week	논문 연구
Fourth week	논문 연구
Fifth week	논문 연구
Sixth week	논문 연구
Seventh week	논문 연구
Eighth week	논문 연구
Ninth week	논문 연구
Tenth week	논문 연구
Eleventh week	논문 연구
Twelfth week	논문 연구
Thirteenth week	논문 연구
Fourteenth week	논문 연구
Fifteenth week	논문 연구
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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Advanced Electrical Machine Analysis and Design		Course Number	1003202001
Major / School Year	Dept. of Electrical Engineering / 전학년		completion division /Grade evaluation	/
Department/Professor	Dept. of Electrical Engineering / 강동우		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number	0328358965	A weekday / class / lecture room	[08-117:수(5)(6)(7)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

본 교과목은 전기기기(Electrical Machines) 분야의 최신 연구동향과 핵심 기술을 심층적으로 이해하고, 연구논문을 분석·비평하는 능력을 배양하기 위한 대학원 수준의 세미나 교과목이다. 전동기, 발전기, 변압기 및 전력변환용 전기기기를 포함한 다양한 전기기기의 해석 및 설계기술을 중심으로 IEEE Transactions, IET, Elsevier, Springer, MDPI 등 관련 분야의 국제 저명 학술지에 게재된 최신 논문을 활용하여 수업을 진행한다.

수강생은 매주 선정된 논문을 사전에 정독하고 연구배경, 문제 정의, 수학적 모델링, 전자기 해석, 설계 방법론, 해석 결과 및 연구의 기여도를 분석한다. 이후 논문의 핵심 내용을 영어로 발표하고 질의응답 및 토론을 수행함으로써 전문적인 연구내용을 영어로 전달하는 능력과 국제 학술회의 수준의 발표 역량을 함양한다.

본 교과목은 단순한 논문 소개에 그치지 않고 연구의 타당성, 실험 및 시뮬레이션 방법, 해석기법의 장단점, 향후 연구 가능성 등을 비판적으로 분석하는 능력을 기르는 것을 목표로 한다. 이를 통하여 학생들은 기존 연구를 이해하는 수준을 넘어 새로운 연구주제를 발굴하고 독창적인 연구 아이디어를 도출하는 능력을 향상시키게 된다.

또한 최근 전기기기 분야에서 활발히 연구되고 있는 고효율 전동기, 영구자석 전동기, 동기기, 유도기, 축방향 자속형 전동기, 전기자동차 구동모터, 풍력발전기, 자기해석(Finite Element Analysis), 최적설계, AI 기반 설계기법 등 다양한 최신 연구주제를 폭넓게 다룬다.

영어를 수업의 공식 언어로 활용함으로써 국제 공동연구 및 해외 학술대회 발표에 필요한 영어 의사소통 능력을 향상시키며, 논문의 핵심 내용을 정확하게 설명하고 전문적인 질의에 논리적으로 답변하는 능력을 배양한다. 발표 이후에는 교수와 수강생 간 심층 토론을 통해 연구방법의 적절성, 연구의 한계 및 향후 발전 방향을 논의하여 연구자로서의 비판적 사고력과 문제해결 능력을 함께 향상시키도록 한다.

최종적으로 본 교과목은 최신 전기기기 연구동향을 이해하고, 국제학술논문을 분석하는 능력, 영어 발표 및 토론 능력, 연구기획 능력, 독창적인 연구수행 역량을 종합적으로 향상시키는 것을 목적으로 한다.

[2] Course Learning Outcomes

- 최신 전기기기 해석 및 설계기술 습득
- 국제 전문학술논문의 체계적인 분석 능력 배양
- 연구방법론의 이해 및 비판적 사고력 향상
- 영어 논문 독해 능력 향상
- 영어 발표 및 질의응답 능력 향상
- 연구결과를 논리적으로 전달하는 프레젠테이션 능력 함양
- 최신 연구동향 파악 및 연구주제 발굴 능력 향상
- 독립적인 연구 수행을 위한 학술적 역량 강화

[3] Class Delivery Method

- 주차별 국제학술논문 선정
- 논문 사전 학습
- 학생 영어 발표(약 30~40분)
- 영어 질의응답 및 토론
- 교수 피드백
- 논문의 연구기법 비교 분석
- 향후 연구 아이디어 토론

ⓐ Method of Teaching

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

ⓑ Using Tools

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

[4] Grading Policies

ⓐ 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	다수	Publisher	IEEE 등 출판사	Textbook	전기기기 분야 학술 논문	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	교과목 소개 및 발표 논문 배정
Second week	전기기기 최신 연구동향 및 논문 정리 및 배정
Third week	세미나 발표
Fourth week	세미나 발표
Fifth week	세미나 발표
Sixth week	세미나 발표
Seventh week	세미나 발표
Eighth week	중간고사
Ninth week	세미나 발표
Tenth week	세미나 발표
Eleventh week	세미나 발표
Twelfth week	세미나 발표
Thirteenth week	세미나 발표
Fourteenth week	세미나 발표
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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Transparent Electronics		Course Number	1002316001
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	[08-248:월(1)(2)(3)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

To understand basics of electronics and energy theory for your practical research topics.
A transparent electronics syllabus covers the physics, materials science, and fabrication of invisible or see-through circuits. Key topics include transparent conducting oxides (TCOs), wide bandgap semiconductors like zinc oxide, thin-film transistors (TFTs), and applications in displays, smart windows, and solar cells.

[2] Course Learning Outcomes

Perform the practical devices and application from the learning of thery.

Materials:
Transparent Conducting Oxides (TCOs): Indium Tin Oxide (ITO), Zinc Oxide (ZnO), Tin Oxide (SnO_2)Transparent Oxide Semiconductors (TOSs): Amorphous Indium Gallium Zinc Oxide (a-IGZO)P-type and n-type doping challenges in wide bandgap oxidesEmerging carbon-based materials, polymers, and 2D nanomaterials

Methods
- Primary Learning Objectives Master the physics of wide-bandgap semiconductors.
- Evaluate trade-offs between optical transparency and electrical conductivity.
- Select appropriate materials (TCOs, TOSs) for specific device architectures.
- Design functional transparent thin-film transistors (TTFTs).
- Analyze current manufacturing limitations, such as p-type doping challenges.
- Operate vacuum sputtering and atomic layer deposition (ALD) systems.
- Characterization: Measure thin-film transparency using UV-Vis spectroscopy.
- Analyses and Testing: Extract mobility and threshold voltage from transistor transfer curves.
- Troubleshooting: Identify and mitigate defect states in oxide semiconductor films.

[3] Class Delivery Method

Physical Vapor Deposition (PVD): DC/RF sputtering,
Atomic layer deposition (ALD)
Low-temperature and solution-processed spin-coating and printing

ⓐ 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	Reference 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	- Primary Learning Objectives Master the physics of wide-bandgap semiconductors.
Second week	- Primary Learning Objectives Master the physics of wide-bandgap semiconductors.
Third week	- Evaluate trade-offs between optical transparency and electrical conductivity.
Fourth week	- Evaluate trade-offs between optical transparency and electrical conductivity.
Fifth week	- Select appropriate materials (TCOs, TOSs) for specific device architectures.
Sixth week	- Select appropriate materials (TCOs, TOSs) for specific device architectures.
Seventh week	- Design functional transparent thin-film transistors (TTFTs).
Eighth week	- Design functional transparent thin-film transistors (TTFTs).
Ninth week	- Analyze current manufacturing limitations, such as p-type doping challenges.
Tenth week	- Operate vacuum sputtering and atomic layer deposition (ALD) systems.
Eleventh week	- Characterization: Measure thin-film transparency using UV-Vis spectroscopy.
Twelfth week	- Analyses and Testing: Extract mobility and threshold voltage from transistor transfer curves.
Thirteenth week	- Troubleshooting: Identify and mitigate defect states in oxide semiconductor films.
Fourteenth week	Term Report (Research Paper)
Fifteenth week	Term Report (Research Paper)
Sixteenth week	Term Report (Research Paper)

[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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Advanced Deep Learning		Course Number	1003092001
Major / School Year	Dept. of Electronics Engineering / 전학년		completion division /Grade evaluation	/
Department/Professor	Dept. of Electronics Engineering / 조환호		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[08-325:목(5)(6)(7)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

This course offers a comprehensive introduction to deep learning, covering key concepts in neural networks, computer vision, natural language processing, and generative models.

[2] Course Learning Outcomes

Students will learn how modern AI systems are built and applied through both theory and hands-on practice.

[3] Class Delivery Method

The course combines lectures, real-world examples, and coding exercises. Students will gain both theoretical knowledge and practical skills through case studies, model implementations, and exams.
Theory (75 min) + Lab session (75min)

ⓐ 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	Introduction - Course overview - AI trend review
Second week	Fundamentals of neural networks - Review: Previous lecture [Understanding AI] - Understanding AI and its evolution - Image classification overview - Linear classifiers - Gradient descent and backpropagation - Components of neural networks: neurons, activation functions, architectures, loss functions, parameter updates
Third week	Image Classification with CNNs - Image filtering and convolution - Higher-level representations, image features - Convolutional layer
Fourth week	Image Classification with CNNs - Pooling layer - Normalization layer - Fully-connected layer
Fifth week	CNN architectures - CNN design patterns - Case studies - AlexNet, VGG, ResNet
Sixth week	Object Detection & Image Segmentation - Overview of detection and segmentation - One-stage vs. two-stage detectors - Introduction to semantic, instance, and panoptic segmentation - Models: U-Net, nnU-Net
Seventh week	Object Detection & Image Segmentation - Fully Convolutional Networks (FCN) - R-CNN family: R-CNN, Fast R-CNN, Faster R-CNN
Eighth week	Midterm
Ninth week	Generative Models - Introduction to generative modeling - Variational Autoencoders (VAEs) - Generative Adversarial Networks (GANs)
Tenth week	Generative Models - Autoregressive models - Diffusion models and their recent advances
Eleventh week	Natural Language Processing (NLP) - Fundamentals of language modeling - Word embeddings: BoW, Word2Vec - Sequence models and RNNs - Encoder-decoder (Seq2Seq) architecture
Twelfth week	Natural Language Processing (NLP) - Attention mechanisms - Transformer architecture
Thirteenth week	Vision Transformers & Multimodal Learning - Vision Transformer (ViT) - Vision-language models: CLIP, LLaVA
Fourteenth week	Self-supervised Learning - Concept of foundational models - Pretext tasks in SSL - Contrastive learning methods: SimCLR, SupCon
Fifteenth week	Final
Sixteenth week	

[7] Assignments

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

The third assignment	purpose	
	procedure & notice	
	references	

Syllabus

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Next Generation Wireless Communication Systems		Course Number	1000081001
Major / School Year	Dept. of Electronics Engineering / 전학년		completion division /Grade evaluation	/
Department/Professor	Dept. of Electronics Engineering / 김훈		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[08-413:화(5B-6)(7-8A)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

This course explores the paradigm shift in next-generation mobile networks, focusing heavily on the 6G AI-RAN (Artificial Intelligence - Radio Access Network). Moving beyond classical mathematical model-based communications, the curriculum investigates how AI and Machine Learning are natively integrated into the 6G air interface and network architecture. Key topics include AI-driven Physical (PHY) layer design, intelligent Radio Resource Management (RRM), O-RAN (Open RAN) architecture with RAN Intelligent Controllers (RIC), and Federated Learning at the wireless edge. Students will understand how AI-RAN not only optimizes network performance (AI-for-RAN) but also enables novel distributed AI services (RAN-for-AI), providing a crucial bridge between telecommunications and artificial intelligence.

[2] Course Learning Outcomes

Upon successful completion of this course, students will be able to:

Understand AI-Native Networks: Explain the architectural evolution toward 6G, specifically defining the concept, requirements, and industry trends of AI-RAN (e.g., AI-RAN Alliance, 3GPP Rel-18/19+).

o Analyze AI-driven PHY/MAC: Evaluate how deep learning models replace or augment traditional transmitter/receiver blocks (e.g., autoencoders, AI-based channel estimation, beamforming, and scheduling).

o Comprehend Open and Intelligent Architectures: Describe the O-RAN architecture, focusing on the roles of near-RT and non-RT RICs in deploying AI models (xApps/rApps) for network automation.

o Develop AI-RAN Simulations: Design and implement basic ML/DL-based wireless communication algorithms using Python (PyTorch/TensorFlow) to solve resource allocation or signal detection problems in a simulated RAN environment.

[3] Class Delivery Method

Lectures: Instructor-led sessions combining wireless communication theory with machine learning fundamentals, specifically tailored for AI-RAN architectures.

Literature & Industry Review: Guided reading of recent IEEE papers and white papers from the AI-RAN Alliance and O-RAN Alliance to grasp cutting-edge industry trends.

Project-Based Learning (PBL): A semester-long team project where students use Python and ML frameworks to develop an AI model that optimizes a specific RAN function (e.g., AI-based beam prediction, CSI feedback, or interference management).

Q&A and Discussion: Interactive sessions focusing on the practical challenges of AI-RAN, such as model generalization, hardware constraints, data privacy (Federated Learning), and real-time inference latency.

ⓐ 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	Course Intro & The Road to 6G AI-RAN
Second week	Review of Wireless Communication Fundamentals
Third week	Fundamentals of Machine/Deep Learning for Comm Engineers
Fourth week	6G AI-RAN Architecture and Vision
Fifth week	Open RAN (O-RAN) and Network Intelligence
Sixth week	AI for Physical Layer (AI-PHY)
Seventh week	AI for Radio Resource Management (AI-RRM)
Eighth week	Mid-term Exam
Ninth week	Term Project Kick-off & Proposal Presentations
Tenth week	Data & Environment Setup
Eleventh week	Model Implementation & Training
Twelfth week	Intermediate Project Reviews
Thirteenth week	Optimization & Ethical Assessment
Fourteenth week	Finalizing Simulations & Report Writing
Fifteenth week	Final Exam/Report
Sixteenth week	

[7] Assignments

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

The third assignment			date	
	purpose			
	procedure & notice			
	references			

Syllabus

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Special Topics in Instrumental Analysis		Course Number	LDO011001
Major / School Year	Dept. of Materials Science and Engineering / 전학년		completion division /Grade evaluation	/
Department/Professor	/		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[08-503:금(7)(8)(9)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

[2] Course Learning Outcomes

[3] Class Delivery Method

ⓐ Method of Teaching

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

ⓑ Using Tools

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

[4] Grading Policies

ⓐ Percentage of grade evaluation

Exam	Attendance	Assignment
%	%	%

· 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	
Second week	
Third week	
Fourth week	
Fifth week	
Sixth week	
Seventh week	
Eighth week	
Ninth week	
Tenth week	
Eleventh week	
Twelfth week	
Thirteenth week	
Fourteenth week	
Fifteenth week	
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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Advanced Thermodynamics		Course Number	LDO013001
Major / School Year	Dept. of Materials Science and Engineering / 전학년		completion division /Grade evaluation	/
Department/Professor	Dept. of Materials Science and Engineering / 명재하		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[08-306:목(5)(6)(7)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

The main topics including the equilibrium/non-equilibrium state and phase stability of multicomponent materials, phase transition and chemical reactions, construction of phase diagrams, thermodynamic interpretation and their applicability of phase diagrams, surface/interface thermodynamics, and
thermodynamic approaching methods of real materials systems will be deeply treated in this course.

[2] Course Learning Outcomes

Understanding basic theories of phase equilibria and phase diagram

[3] Class Delivery Method

offline lecture and personal presentation

ⓐ Method of Teaching

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

ⓑ Using Tools

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

[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	Floyd A. Hummel	Publisher		Textbook	Introduction to Phase Equilibria in Ceramic Systems	Issued year	
(2)	Author	R. T. Dehoff	Publisher		Textbook	Thermodynamics in Materials Science	Issued year	
(3)	Author	Bergeron and Risbud	Publisher		Textbook	Introduction to Phase Equilibria in Ceramics	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]

PPT slides and handout

[6] Weekly lesson plans

First week	Lecture introduction
Second week	Introduction : Purpose, Usefulness, Definition, and Behavior of Matter Structure of Thermodynamics : Thermodynamic Systems/Properties, Classification of Relationships, and Equilibrium
Third week	Laws of Thermodynamics : The First/Second/Third Law of Thermodynamics, Energy Balance, and Combined Statements Thermodynamic Variables and Relations : Maxwell Relations, General Strategy for Deriving Thermodynamic Relations, and Applications to Solids/Liquids
Fourth week	Equilibrium in Thermodynamic Systems : General Criterion for Equilibrium, Mathematical Formulation, and Application of General Strategy of Finding Conditions for Equilibrium
Fifth week	Statistical Thermodynamics : Micro-/Macrostate, Entropy, Conditions for Equilibrium in Statistical Thermodynamics, and Calculation of Macroscopic Properties Model with Two Energy Levels, Einstein & Debye Heat Capacity Models, Alternate Statistical Formulations, and Most Probable State
Sixth week	Multicomponent, Homogeneous Nonreacting Systems : Partial Molar Properties, Evaluation of PMP, and Their Relationships Chemical Potential in Multicomponent Systems : Fugacities, Activities, Activity Coefficients, and Solution Models
Seventh week	Thermodynamics of Phase Transformations, Richardson-Ellingham Charts for Oxidation and Reduction, and Predominance Diagrams
Eighth week	mid-term
Ninth week	Statements of Lever and Phase Rules, Their Applications, Thermodynamics and Phase Equilibria
Tenth week	Equilibria in One-Component Systems : Phase Rule, P-T Diagrams, Clausius-Clapeyron Equation.
Eleventh week	Condensed One-Component Systems, Non-Equilibrium Systems
Twelfth week	Equilibria i Two-Component Systems : Phase Rule, Equilibrium between Phases of variable Composition. Equilibrium Criteria.
Thirteenth week	Solution Theories, Free Energy of Binary Systems, Types of Binary Diagrams and Crystallization Paths : Problems and Solutions.
Fourteenth week	Liquid Immiscibility- Stable Immiscibility, Metastable Immiscibility, Spinodal Decomposition, Free Energy vs Composition Diagrams : Problems and Solutions.
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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Fundamental Principle of Nondestructive evaluation in the Construction Industry		Course Number	1001895001
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	[08-338:금(7)(8)(9)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

To introduce the conceptual, theoretical and analytical tools necessary for inspection and evaluation of the concrete and steel infrastructure. Theoretical and practical information for a wide range of non-destructive testing (NDT) techniques will be given. The lectures are divided into three topic areas: (i) theory background, (ii) fundamentals of NDE techniques and (iii) application of NDE. Applications and limitations of the NDT techniques for bridges, pavements, deep foundations, and other structures will be illustrated. Laboratory sessions that involve application of NDE techniques complete the class. Another course objective is the development of effective technical communication skills through the term paper.

[2] Course Learning Outcomes

Upon completion of this course, the students can able to use the various Non Destructive Testing and Testing methods understand for defects and characterization of industrial components

[3] Class Delivery Method

* 코로나19 상황이 진행되는 중에는 다음과 같은 방식으로 비대면 수업을 진행합니다.
- 수업 전 업로드된 강의자료를 통한 예습 (추후 변경 가능)
- 수업시간 중 카카오톡 단톡방을 활용한 질의 응답 형태로 강의 진행
* 수강변경신청을 통한 강의 수강 희망자는 제 메일이나 문자로 알려주세요.
e-mail: tkoh@inu.ac.kr

ⓐ Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
50 %	20 %	30 %	%	%	%	%	%

ⓑ Using Tools

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

[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	American Society for Nondestructive Testing	Publisher	American Society for Nondestructive Testing	Textbook	Nondestructive Testing Handbook	Issued year	2005
(2)	Author	ACI Committee 228	Publisher	ACI	Textbook	In-place Methods to Estimate Concrete Strength	Issued year	2003
(3)	Author		Publisher		Textbook		Issued year	

[Reference books]

(1)	Author	D.E. Bray and R.K. Stanley	Publisher	McGraw	Textbook	Non-destructive Evaluation: A Tool for Design, Manufacturing and Service	Issued year	1989
(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	Fundamentals of and introduction to destructive and non-destructive testing
Second week	signal processing
Third week	wave propagation and vibration
Fourth week	penetrating radiation
Fifth week	magnetism
Sixth week	dye penetrant and ultrasound
Seventh week	ultrasound
Eighth week	Mid-term exam
Ninth week	eddy current
Tenth week	radiography
Eleventh week	magnetic particle
Twelfth week	visual inspection and sounding
Thirteenth week	UPV
Fourteenth week	vibration methods, impact-echo
Fifteenth week	SASW and MASW
Sixteenth week	GPR

[7] Assignments

The first assignment	assignment	solving problems in each chapter	submission date	
	purpose	understand a NDT principle		
	procedure & notice	Each homework will be assigned in class once per week, on average.		
	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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Advanced Chemical Engineering Seminar 1		Course Number	1002559001
Major / School Year	Dept. of Energy and Chemical Engineering / 전학년		completion division /Grade evaluation	/
Department/Professor	Dept. of Energy and Chemical Engineering / 이재훈		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number	0328358674	A weekday / class / lecture room	[08-535:월(7)(8)(9)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

화학공학 분야의 전문 지식을 심화하고, 연구 역량을 강화하며, 미래 사회에 필요한 창의적 문제 해결 능력을 갖춘 인재를 양성

[2] Course Learning Outcomes

다양한 연구 주제 발표와 토론을 통해 연구 기획·수행·분석·결과 도출 및 발표 능력 향상
화학공학 분야 최신 연구 동향과 전문 지식 습득 및 심도 있는 지식 교류를 통한 전문성 강화
창의적 사고 촉진과 문제 해결 능력 향상
다양한 학문적 배경과 연구 분야의 학생들과의 교류를 통한 폭넓은 지식과 시각 습득
변화하는 사회 요구에 부응하는 역량 함양과 전문 분야에서의 선도적 역할 준비
연구 결과 발표와 토론을 통한 효과적인 의사소통 능력 향상

[3] Class Delivery Method

세미나 연사 초청을 통해 전문 지식의 전달과 미래 사회에 필요한 핵심 역량을 함양하는 데 중점

ⓐ 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	Orientation
Second week	Seminar 1
Third week	Seminar 2
Fourth week	Seminar 3
Fifth week	Seminar 4
Sixth week	Seminar 5
Seventh week	Seminar 6
Eighth week	Mid-term
Ninth week	Seminar 7
Tenth week	Seminar 8
Eleventh week	Seminar 9
Twelfth week	Seminar 10
Thirteenth week	Research skills 1
Fourteenth week	Research skills 2
Fifteenth week	Final
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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Process Artificial Intelligence		Course Number	1002984001
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 / lecture room	[08-535:금(1)(2)(3)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

본 과목은 기계학습과 딥러닝 기법등 머신러닝의 기초를 익히고 이를 바탕으로 공정시스템 분야의 여러 문제를 풀어보는 것을 목적으로 한다.

[2] Course Learning Outcomes

- 강화학습 알고리즘 이해
- 강화학습 예제 실습

[3] Class Delivery Method

- 수업은 강의 위주로 이루어지며, 중요한 예제를 풀어나가며 개념이해력을 높임.
- 시험을 통하여 수업의 이해정도 및 성취도를 평가

ⓐ Method of Teaching

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

ⓑ Using Tools

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

[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
Second week	2. Supervised Learning of Behaviors
Third week	3. Introduction to Reinforcement Learning
Fourth week	4. Policy Gradients
Fifth week	5. Actor-Critic Algorithms
Sixth week	6. Value Function Methods
Seventh week	7. Policy Gradient
Eighth week	8. Deep RL with Q-Functions
Ninth week	9. Advanced Policy Gradients
Tenth week	10. Optimal Control and Planning
Eleventh week	11. Model-Based Reinforcement Learning
Twelfth week	12. Model-Based Policy Learning
Thirteenth week	13. Exploration (Part 1)
Fourteenth week	14. Exploration (Part 2)
Fifteenth week	15. Variational Inference and Generative Models
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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Advanced Electrochemistry		Course Number	1000692001
Major / School Year	Dept. of Energy and Chemical Engineering / 전학년		completion division /Grade evaluation	/
Department/Professor	Dept. of Energy and Chemical Engineering / 권오중		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number	8358414	A weekday / class / lecture room	[08-535:수(7)(8)(9)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

In this class, students is going to learn advanced electrochemistry. Thermodynamics and reaction kinetics, which are theoretical background of an electrochemistry, is going to be reviewed then the electrochemistry is going to be dealed and applied to fuel cell system. Through fuel cell system, the application techniques and anlysis method of the electrochemistry will be discussed.

[2] Course Learning Outcomes

1) To be understood the theoretical background of an electrochemistry.
2) To be understood the basic concept of an electrochemistry.
3) To be able to understand electrochemical analysis techniques and interprete the data.
4) To be understood the appliation of an electrochemistry through fuel cell study.

[3] Class Delivery Method

The class is basically made up of lectures, seminar, paper search and research-related activities.

ⓐ Method of Teaching

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

ⓑ Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
20 %	0 %	80 %	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	Allen J. Bard, Larry R. Faulkner	Publisher	JOHN WILEY & SONS, INC.	Textbook	ELECTROCHEMICAL METHODS Fundamentals and Applications, second edition	Issued year	2001
(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	– Orientation – Introduction to an electrochemistry
Second week	– Basic thermodynamics
Third week	– Internal energy, enthalpy
Fourth week	– Entropy, Gibbs energy
Fifth week	– Relation between Gibbs energy and electrocstatic potential
Sixth week	– Basic kinetics
Seventh week	– Reaction rate (homogeneous and heterogeneous)
Eighth week	– Mid term exam
Ninth week	–Relation between reaction rate and current
Tenth week	– Basic electrochemistry (current, potential and their relation)
Eleventh week	– Potential step method
Twelfth week	– Cyclic voltammetry and linear sweep voltammetry
Thirteenth week	– Impedance analysis
Fourteenth week	– Introduction to fuel cell
Fifteenth week	– Electrochemistry in fuel cell – 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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Advanced Steel Structure Design		Course Number	411718001
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 / lecture room	[08-337:월(야1)(야2)(야3)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

To understand the basic and advanced topics in steel design of structures.

[2] Course Learning Outcomes

The lecture aims to help the students understand the basic and advanced topics in steel design of structures. Designcode issues and practical examples will also be provided in class.

[3] Class Delivery Method

non-face-to-face face, blackboard

ⓐ 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

Midterm 30%, Final 30%

ⓐ 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	Concepts in structural steeldesign
Third week	Concepts in structural steeldesign
Fourth week	Tension members
Fifth week	Compression members
Sixth week	Beam
Seventh week	Beam
Eighth week	Midterm exam
Ninth week	Beam-column
Tenth week	Beam-column
Eleventh week	Connection design (bolted connection)
Twelfth week	Connection design (welded connection)
Thirteenth week	To be discussed
Fourteenth week	To be discussed
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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Advanced Construction Materials		Course Number	411716001
Major / School Year	Dept. of Civil & Environmental Engineering / 전학년		completion division /Grade evaluation	/
Department/Professor	/		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[08-229:화(야1)(야2)(야3)]	
Office hours	email appointment at any time		Medium of Instruction	EN

[1] Outline / Purpose

This course covers advanced topics in reinforced concrete as a major construction material. Students will explore the fundamental principles and recent developments in concrete materials and their engineering applications.

[2] Course Learning Outcomes

Upon successful completion of this course, students will be able to:
- Understand the microstructure of concrete.
- Explain concrete mixture design principles.
- Analyze the strength and mechanical behavior of concrete.
- Evaluate the durability of concrete under various environmental conditions.
- Understand composite materials used in concrete engineering.

[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.
Recent articles and papers will be discussed and presented.

ⓐ Method of Teaching

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

ⓑ Using Tools

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

[4] Grading Policies

1. Assignment: About 2-3 assignments will be assigned during the term.
2. Presentation: About 1-2 presentations will be assigned during the term.

ⓐ 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	P. Kumar Mehta, Paulo J. M. Monteiro	Publisher	McGraw-Hill Education	Textbook	Concrete: microstructure, properties, and materials	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 orientation – introduction to and review of reinforced concrete
Second week	microstructure of concrete
Third week	strength
Fourth week	dimensional stability
Fifth week	durability
Sixth week	proportioning of concrete mixtures
Seventh week	concrete at early age
Eighth week	midterm exam
Ninth week	nondestructive methods
Tenth week	progress in concrete technology
Eleventh week	advanced in concrete mechanics1
Twelfth week	advanced in concrete mechanics2
Thirteenth week	composite materials
Fourteenth week	asphalt materials
Fifteenth week	term project
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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Advanced Fluid Mechanics and Hydrodynamics		Course Number	410644001
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 / lecture room	[08-222:화(0ㅑ1)(0ㅑ2)(0ㅑ3)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

This course provides a systematic introduction to the fundamental theories required to analyze fluid motion and the forces acting on fluids from mathematical and physical perspectives. It covers essential mathematical concepts for fluid mechanics, including dimensions and units, the continuum concept, vector and tensor notation, velocity, and acceleration. The continuity equation, momentum equation, and Euler equation are derived from the fundamental laws of mass and momentum conservation. Dimensional analysis and similitude are also introduced to develop the ability to simplify complex fluid-flow problems and interpret experimental and numerical results.

[2] Course Learning Outcomes

Upon successful completion of this course, students will be able to:

- Understand the concepts of physical quantities, dimensions, and units used in fluid mechanics.
- Explain the continuum assumption and mathematically describe fluid velocity and acceleration.
- Use vector and tensor notation to represent fluid motion and forces.
- Derive the continuity equation from the law of conservation of mass and explain its physical meaning.
- Derive the momentum equation and Euler equation based on Newton's laws of motion.
- Apply dimensional analysis and similitude to identify important dimensionless parameters in fluid-flow problems.
- Apply governing equations to fundamental problems in fluid mechanics, hydraulic experiments, and numerical analysis.

[3] Class Delivery Method

The course will be delivered through lectures, step-by-step mathematical derivations, example problems, and assignments. Governing equations will be derived systematically from fundamental physical laws, with emphasis on both the mathematical formulation and physical interpretation of each term. Representative engineering problems related to dimensional analysis, continuity, and momentum will be discussed to demonstrate practical applications of the theory. Students will reinforce the key concepts through assignments and in-class problem-solving exercises. Their understanding and problem-solving ability will be evaluated through a midterm examination and a final examination.

ⓐ Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
80 %	20 %	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	Pijush K. Kundu	Publisher	ACADEMIC PRESS	Textbook	Fluid mechanics	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	Fundamental Concepts for Fluid Mechanics I (Dimensions and Units, Continuum Concept, and Taylor Series)
Second week	Fundamental Concepts for Fluid Mechanics II (Extension of Number Systems, Tensor Fields and Elements, Velocity and Acceleration)
Third week	Fundamental Concepts for Fluid Mechanics III (Vector Operators and Tensor Notation)
Fourth week	Fundamentals of Fluid Mechanics I (Fluids, Mechanics, and Classification of Forces)
Fifth week	Fundamentals of Fluid Mechanics II (Fluid Motion and the Three Fundamental Laws of Nature), Assignment I
Sixth week	Fundamentals of Fluid Mechanics III (Physical Quantities and Dimensions)
Seventh week	Dimensional Analysis and Similitude
Eighth week	Midterm Examination
Ninth week	Continuity Equation I (Conservation of Mass, Continuity Equation, and Continuity Equation for Pipe Flow)
Tenth week	Continuity Equation II (Derivation of the Continuity Equation)
Eleventh week	Continuity Equation III (Physical Interpretation of the Continuity Equation)
Twelfth week	Momentum Equation I (Newton's Second Law and the Momentum Equation)
Thirteenth week	Momentum Equation II (General Form of the Momentum Equation)
Fourteenth week	Momentum Equation III (Alternative Forms of the Momentum Equation and the Euler Equation)
Fifteenth week	Final Examination
Sixteenth week	Make-up Week

[7] Assignments

The first assignment	assignment	Report #1	submission date	2026-10-09 Fri
	purpose	Understanding Mathematical Expressions Used in Fluid Mechanics		
	procedure & notice			
	references	Fluid mechanics		
The second assignment	assignment	Report #1	submission date	2026-11-06 Fri
	purpose	Understanding the Continuity and Momentum Equations		
	procedure & notice			
	references	Fluid mechanics		
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Advanced Mechanics of Materials		Course Number	410601001
Major / School Year	Dept. of Civil & Environmental Engineering / 전학년		completion division /Grade evaluation	/
Department/Professor	School of Urban and Environmental Engineering / 이헌우		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[08-229:수(야1)(야2)(야3)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

This course provides an advanced study of the mechanical behavior of engineering materials and structural members subjected to various loading conditions. It expands upon the fundamental concepts of mechanics of materials and introduces advanced analytical methods for evaluating stress, strain, deformation, yielding, failure, and stability.

[2] Course Learning Outcomes

Explain advanced concepts of stress, strain, deformation, and material behavior.
Analyze two-dimensional and three-dimensional stress and strain states.
Apply stress and strain transformation equations and Mohr's circle.
Apply energy methods to calculate structural deformation.

[3] Class Delivery Method

The course will be conducted through lectures, problem-solving sessions, discussions, assignments, and computational exercises.

ⓐ 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	Introduction and Review of Mechanics of Materials
Second week	Three-Dimensional Stress Analysis
Third week	Stress Transformation and Principal Stresses
Fourth week	Three-Dimensional Strain Analysis
Fifth week	Constitutive Relationships
Sixth week	Advanced Bending of Beams
Seventh week	Advanced Torsion
Eighth week	Midterm Exam
Ninth week	Energy Methods
Tenth week	Combined Loading and Failure Criteria
Eleventh week	Plastic Behavior of Materials
Twelfth week	Structural Stability and Buckling
Thirteenth week	Fracture Mechanics
Fourteenth week	Fatigue and Cyclic Behavior
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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

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		A weekday / class / lecture room	[09-124:수(야1)(야2)(야3)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

지반과 관련된 건설 재료로서 흙의 기본적이고 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 기본적이고 종합적인 공학적 거동을 설명하고 지반의 침하와 강도를 이해하는데 필요한 공학적 용어의 명확환 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-project 를 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

ⓐ Method of Teaching

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

ⓑ Using Tools

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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Advanced Urban Design		Course Number	350508001
Major / School Year	Dept. of Architectural Design and Engineering / 전학년		completion division /Grade evaluation	/
Department/Professor	Division of Architecture & Urban Design / 최정윤		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[28-508:화(5)(6)(7)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

This course deals with the basic theoretical foundation and research process that students studying urban and architecture must have as researchers.
The in-depth topic for the fall semester of 2026 is “Urban Conservation”. The course will cover how to interpret the value of urban heritage and understand the basics of place conservation through analyzing related research and cases.

[2] Course Learning Outcomes

Based on the theory and cases of urban conservation, the course will focus on understanding, interpreting, regenerating, and utilizing historical urban places and contexts from various perspectives.
As well as understanding why & how the history of past and urban heritages have been conserved, the class will discuss the recent cases and recognize them in connection with the trends and attributes of sustainable development.

[3] Class Delivery Method

The course will be proceeded by lecture, student presentation, and seminar.
Since the course is a discussion-based seminar, it is essential to understand the textbook and actively participate in the class discussion.
It is also important to choose a topic of interest and write a high-quality final paper.
(The schedule and reading amount below can be changed depending on the number of participants and each student's topic of interest.)

ⓐ Method of Teaching

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

ⓑ Using Tools

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

[4] Grading Policies

Attendance and participation 20%
Session reading 15%
Final paper 40% (presentation 10%, thesis 30%)

ⓐ 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	F. Bandarin and R. v. Oers	Publisher	John Wiley and sons Ltd.	Textbook	Reconnecting the City: The Historic Urban Landscape Approach and the Future of Urban Heritage	Issued year	2015
(2)	Author	H. Kalman	Publisher	Routledge	Textbook	Heritage Planning	Issued year	2014
(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 and ORIENTATION
Second week	What is Urban Conservation? 1) Heritage Planning: Settings and Organization (Kalman, Ch. 1) : targets, structures for conservation 2) Context: Legal Infrastructure, Sustainability, Ethics (Kalman, Ch. 2) : institutional, planning-based: social, environmental, and economic considerations
Third week	History of Conservation 1) Restoration, Conservation (Jokilehto, Ch.6, 7)2) Theories and Concepts (Jokilehto, Ch.8)3) Changes in the concept of heritage in conservation theory
Fourth week	Conservation Policy 1) Article 1: Conservation Standards for Cultural Heritage – with focus on conservation targets, issues and approach 2) Best Practice: Charters and Conventions, Standards and Guidelines (Kalman, Ch. 3)
Fifth week	Latest Agenda 1)Article 2: Exploring 'Historic Urban Landscape' as a New Approach to Heritage Conservation 2) The way Forward: An Agenda for Reconnecting the City (Bandarin and Oers, Conclusion): The Principles of Urban Preservation and the Possibility of Discussing Historic Urban Landscape
Sixth week	Design Approaches: Between Old and New 1)Article 3: Design Characteristics of Recent Contemporary Architecture in Historic City Centers 2) Article 4: Architectural compatibility beyond the eye of the beholder (Khalaf, 2016)
Seventh week	Design Approaches: Latest trend 1) Article 5: Planning for Archaeological Relics Excavated in Historic Urban Cores 2) Case Study
Eighth week	Mid-term Exam
Ninth week	Field Trip
Tenth week	Related Law and Regulations 1)The Role of Regulatory System (Bandarin and Oers, Chapter 11) 2)Policy & Regulation – Domestic : Cultural Properties Protection Act, Urban Planning Act, Landscape Act : Special Act on Urban Regeneration, Hanok and Building Assets
Eleventh week	System, Stakeholders, and process-1 1) Urban Planning and Cultural Heritage : District Unit Plan for Seongbuk-dong Historic and Cultural District : A Comprehensive Plan for the Conservation and Maintenance of the Castle Village : Basic Plan and Management Guidelines for the Historic City of Seoul
Twelfth week	System, Stakeholders, and process-2 1) Article 6: Reviewing Design Reviews for Contemporary Architecture in Historic Districts : Traditional design with outstanding modernity, traditional style 2) Article 7: Role of the Community in Managing the Urban Historic Environments
Thirteenth week	Conservation Cases- Urban areas and Districts
Fourteenth week	Conservation Cases-Neighborhoods and Streets
Fifteenth week	Final paper Presentation
Sixteenth week	

[7] Assignments

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

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

Syllabus

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Advanced Bioimaging		Course Number	1002713001
Major / School Year	Department of Bioengineering and Nano-Bioengineering / 전학년		completion division /Grade evaluation	/
Department/Professor	Division of Bioengineering / 송광훈		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[29-309:수(5)(6)(7)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

The class will include important principles of imaging and working mechanisms of various microscopes that can be used for bioengineering. Particularly, students can learn about fluorescent microscopes and fluorescence labeling.

[2] Course Learning Outcomes

Students can understand types and working principles of microscopes, which can be useful for their own researches.

[3] Class Delivery Method

Lectures will be given in the class room.

ⓐ 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

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

ⓐ 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	Basic principles of light microscopes Student presentation
Second week	Basic principles of light microscopes Student presentation
Third week	Components of light microscopes Student presentation
Fourth week	Diffraction limits Student presentation
Fifth week	Epi fluorescent microscopy Student presentation
Sixth week	Confocal microscopy Student presentation
Seventh week	Two-photon microscopy Student presentation
Eighth week	Midterm exam
Ninth week	Polarization microscopy Student presentation
Tenth week	Differential interference contrast microscopy Student presentation
Eleventh week	Phase contrast microscopy Student presentation
Twelfth week	Transmission electron microscopy Student presentation
Thirteenth week	Scanning electron microscopy Student presentation
Fourteenth week	Imaging techniques for diagnostics and therapeutics Student presentation
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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Climate Change Impact Assessment Study		Course Number	1002727001
Major / School Year	Dept. of International Climate Cooperation / 전학년		completion division /Grade evaluation	/
Department/Professor	/		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[28-418:화(2)(3)(4)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

[2] Course Learning Outcomes

[3] Class Delivery Method

ⓐ Method of Teaching

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

ⓑ Using Tools

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

[4] Grading Policies

ⓐ Percentage of grade evaluation

Exam	Attendance	Assignment
%	%	%

· 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	
Second week	
Third week	
Fourth week	
Fifth week	
Sixth week	
Seventh week	
Eighth week	
Ninth week	
Tenth week	
Eleventh week	
Twelfth week	
Thirteenth week	
Fourteenth week	
Fifteenth week	
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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Climate Action Project Management		Course Number	1001648001
Major / School Year	Dept. of International Climate Cooperation / 전학년		completion division /Grade evaluation	/
Department/Professor	/		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[28-418:수(7)(8)(9)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

[2] Course Learning Outcomes

[3] Class Delivery Method

ⓐ Method of Teaching

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

ⓑ Using Tools

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

[4] Grading Policies

ⓐ Percentage of grade evaluation

Exam	Attendance	Assignment
%	%	%

· 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	
Second week	
Third week	
Fourth week	
Fifth week	
Sixth week	
Seventh week	
Eighth week	
Ninth week	
Tenth week	
Eleventh week	
Twelfth week	
Thirteenth week	
Fourteenth week	
Fifteenth week	
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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Efficient Waste Management and Water Supply		Course Number	1002886001
Major / School Year	Dept. of International Climate Cooperation / 전학년		completion division /Grade evaluation	/
Department/Professor	School of Urban and Environmental Engineering / 이도균		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[28-418:목(7)(8)(9)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

This graduate-level course aims to provide students with basic knowledge and analytical skills in waste management and water supply systems. Students will develop expertise in sustainable solutions for environmental challenges while considering technical aspects of waste and water management.

[2] Course Learning Outcomes

This course explores the diverse systems of waste management and water supply, emphasizing their crucial role in environmental engineering and urban sustainability. Students will examine treatment technologies and resource recovery methods etc. The curriculum covers theoretical foundations and practical applications, including water distribution network, waste-to-energy conversion, and emerging technologies in both fields. Students will learn to develop and evaluate comprehensive solutions for complex environmental challenges in modern urban settings.

[3] Class Delivery Method

-Weekly lectures (3 hours) featuring theoretical concepts and real-world applications
-Student presentations and peer review sessions
-Reading assignments from current research papers

ⓐ 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	TBD	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	Anaerobic digestion and landfill gas recovery
Second week	Resource recovery from sewage sludge
Third week	Metal recovery from solid wastes
Fourth week	Energy recovery from combustible wastes
Fifth week	Quiz 1
Sixth week	Water Environment and Water Pollution – Current Status and Global Issues
Seventh week	Water Quality Analysis Methods and Advanced Measurement Technologies
Eighth week	Water Treatment Processes and Principles
Ninth week	Advanced Water Treatment – Future Water Treatment Systems
Tenth week	Quiz 2
Eleventh week	Wastewater Treatment Fundamentals
Twelfth week	Advanced Biological Treatment Systems
Thirteenth week	Emerging contaminants removal
Fourteenth week	Wastewater Reuse
Fifteenth week	Quiz 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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Art Practice Research Studio2	Course Number	1003006001
Major / School Year	Dept. of Arts / 전학년	completion division /Grade evaluation	/
Department/Professor	School of Fine Arts / 권순학	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[16-406:목(5)(6)(7)]
Office hours		Medium of Instruction	EN

[1] Outline / Purpose

작품연구스튜디오는 대학원 미술학과 학생들이 자신의 작품세계를 심층적으로 탐구하고, 실험적인 창작을 수행하며, 동시대 미술의 흐름 속에서 자신만의 조형 언어를 구축하는 것을 목표로 하는 실기 중심의 수업입니다. 학생들은 개별 연구 및 그룹 비평(크리틱)을 통해 자신의 작품을 분석하고 발전시키며, 전시 기획과 프레젠테이션 능력을 함양합니다.
본 수업을 통해 학생들은 창작의 방향성을 명확히 설정하고, 비평적 사고를 바탕으로 작품을 발전시키며, 학문적·실험적 연구를 통해 예술가로서의 정체성을 확립할 수 있습니다.

[2] Course Learning Outcomes

작품연구스튜디오는 대학원 과정의 학생들이 자신만의 창작 방향을 탐색하고, 이를 체계적으로 발전시킬 수 있도록 돕는 것을 목표로 한다. 본 수업을 통해 학생들은 개별 연구와 실험을 거듭하며 조형 언어를 확장하고, 현대 미술의 흐름과 개념을 이해하며 창작 과정에 반영할 수 있다. 또한, 동료 및 교수진과의 비평적 토론을 통해 작품을 분석하고 새로운 시각을 습득하며, 스스로의 예술적 입장을 명확히 정립하는 능력을 기른다

[3] Class Delivery Method

수업은 개별 작품 연구와 그룹 크리틱(비평) 세션을 중심으로 운영된다. 학생들은 주기적으로 자신의 작품을 발표하고, 교수와 동료 학생들의 피드백을 바탕으로 작업을 심화시키는 과정을 반복한다. 이 과정에서 창작의 개념적 기반을 확립하고, 조형적 실험과 기술적 확장을 시도하며, 작품의 표현력을 극대화하는 데 집중한다.

ⓐ 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	수업 소개와 교제에 대한 오리엔테이션
Second week	작품 구상 및 아이디어 리서치
Third week	개별 연구 진행 및 피드백
Fourth week	그룹 크리틱
Fifth week	조형 실험 및 매체 연구
Sixth week	연구 발전 및 개별 지도
Seventh week	그룹 크리틱 II
Eighth week	중간 발표
Ninth week	현대 미술과 개인 작업의 연계
Tenth week	전시 기획 워크숍
Eleventh week	개별 작업 진행 발표 및 토론
Twelfth week	개별 작업 진행 발표 및 토론
Thirteenth week	개별 작업 진행 발표 및 토론
Fourteenth week	개별 작업 진행 발표 및 토론
Fifteenth week	최종 발표 및 피드백
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

2026 - 2학기

Date : 2026.08.13
Time : PM 3:29

CourseTitle	Introduction to Biopolymers		Course Number	1002742001
Major / School Year	Integrated Major in White Biotechnology / 전학년		completion division /Grade evaluation	/
Department/Professor	Dept. of Chemistry / 그레고리 아이작 피터슨		Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[05-525:목(7)(8)(9)]	
Office hours			Medium of Instruction	EN

[1] Outline / Purpose

The goal of this course is to provide a general introduction of biopolymers and bio-based synthetic polymers. Emphasis will be placed on demonstrating how the synthesis and applications of biopolymers fits within the greater context of the white bio field.

[2] Course Learning Outcomes

The student should learn the basic polymer concepts related to biopolymers, the synthetic methods applicable to biopolymers, the broad applications of biopolymers in various industries, and the degradation of biopolymers.

[3] Class Delivery Method

The students will learn through lecture, class discussion of research papers, and class project presentations.

ⓐ 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

Mid-term exam 30%
Final exam 30%
Project 20%
Attendance 20%

ⓐ 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 Introduction
Second week	History of polymers and polymer basics
Third week	Natural biopolymers pt 1
Fourth week	Natural biopolymers pt 2
Fifth week	Artificial biopolymers pt 1
Sixth week	Artificial biopolymers pt 2
Seventh week	Advanced biopolymers: blends and composites
Eighth week	Mid-term exam
Ninth week	Biopolymer manufacturing and applications
Tenth week	Biopolymer end-of-life treatment
Eleventh week	Biopolymer-based microplastics
Twelfth week	Class project
Thirteenth week	Class project
Fourteenth week	Course 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 biopolymer paper.		
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			