Syllabus

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Novel and Film	Course Number	021861001
Major / School Year	Dept. of English Language and Literature / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of English Language & Literature / 하인혜	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[15-317:수(7)(8)(9)]
Office hours			

[1] Outline / Purpose

This graduate seminar provides a comprehensive overview of Robinsonade literature, covering its eighteenth-century original text and other well-known modern adaptations, and different media forms.

[2] Course Learning Outcomes

By taking this course, students will
- understand Robinsonade as a genre;
- be able to analyze critically Robinson Crusoe and its stakes and exigencies in the 21st century;
- acquire interdisciplinary perspectives on Robinsonade.

[3] Class Delivery Method

- Lecture
- Participation and class discussions
- Research project and 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
30 %	20 %	50 %

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

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Daniel Defoe	Publisher	Oxford University Press	Textbook	Robinson Crusoe	Issued year	
(2)	Author	Andy Weir	Publisher	Random House	Textbook	The Martian	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 to Robinsonade - Definition and origins of Robinsonade - Key characteristics and themes - Historical context and evolution
Second week	Robinson Crusoe by Daniel Defoe (1) - In-depth analysis of Defoe's novel - Explorations of the overall structure of the novel
Third week	Robinson Crusoe by Daniel Defoe (2) - In-depth analysis of Defoe's novel - Exploration of colonial and survival themes
Fourth week	Robinson Crusoe by Daniel Defoe (3) - In-depth analysis of Defoe's novel - Navigating its contemporary sister genres
Fifth week	The Martian by Andy Weir (1) - Analysis of science fiction elements in Robinsonade - Exploration of morality and ethics
Sixth week	The Martian by Andy Weir (2)
Seventh week	The Martian by Andy Weir (3)
Eighth week	The Martian by Andy Weir (4)
Ninth week	The Martian by Andy Weir (5) & Its Film Adaptation
Tenth week	Midterm Exam Thoughts and Reflection on Robinsonade - Summarizing key themes and concepts - Reflecting on the relevance of Robinsonade in modern society
Eleventh week	The Martian (film), Revisited
Twelfth week	Life of Pi (2012) by Ang Lee
Thirteenth week	Cast Away (2000) by Robert Zemeckis
Fourteenth week	Wrap-up Discussions on Robinsonade - Exploration of contemporary Robinsonade works - Discussion on post-colonial perspectives - Influence on popular culture
Fifteenth week	Student Presentations - Students present research projects on selected Robinsonade works or themes
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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Special Topic in English Literature Ⅰ	Course Number	1001805001
Major / School Year	Dept. of English Language and Literature / 전학년	completion division /Grade evaluation	/
Department/Professor	/	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[15-102:금(2)(3)(4)]
Office hours			

[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
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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	
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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Seminar in Semantics	Course Number	021811001
Major / School Year	Dept. of English Language and Literature / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of English Language & Literature / 윤소연	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[15-404:화(2)(3)(4)]
Office hours			

[1] Outline / Purpose

The course title is 'Seminar,' which is supposed to be an advanced course. However, considering the familiarity and interest in linguistics, the level of the course is subject to change. Throughout this course, students will learn how linguistic meaning is related with human activities, psychology, and brain by investigating the structure of English words and what the "meaning" of words indicates. They will also be trained how they can analyze the meaning of words and how the meanings are related, and how the meanings change through time.

[2] Course Learning Outcomes

Ultimately, the students will examine how human beings understand and structure the world.

[3] Class Delivery Method

lecture + discussion

ⓐ 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
30 %	20 %	50 %

· 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	Course Introduction
Second week	Linguistics: Basic
Third week	Language and Brain
Fourth week	Lexicon
Fifth week	Lexicon
Sixth week	Meaning
Seventh week	Language and Cognition
Eighth week	Discussion 1
Ninth week	Metaphor
Tenth week	Semantic Relation
Eleventh week	Discussion 2
Twelfth week	Exam
Thirteenth week	Using Corpora
Fourteenth week	Presentation
Fifteenth week	Language and Culture
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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Regional Development Administration	Course Number	230506001
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			

[1] Outline / Purpose

Regional development theory is a set of theories developed in Western countries to help explain economic effects that go beyond political boundaries. Why? In this course, we will examine the way in which theories from the U.S. and Europe help to explain economic growth and decline in certain regions, and how these ideas came to South Korea and entered into the political and policy discourse of the country. We will also examine the goals of regional development and whether or not those goals are achievable in South Korea.

[2] Course Learning Outcomes

Regional development draws up plans based on economic growth and long-term projections, so we will learn how to craft a regional development plan using mapping programs and some basic statistical software. So students will learn how to use basic Geographical Information Systems (GIS) software and basic statistics software to design a regional development plan.

[3] Class Delivery Method

Since we will be meeting in person, classes will be offered in lecture format with exercises to make sure the lecture materials were understood. The class meets on Monday evenings, so exercises will be posted online the Sunday before. The main goal of the class will be to teach skills for analyzing student's own country context and creating a plan for regional development. There will also be office hours on Tuesdays for students to stop by if they have questions or need assistance.

ⓐ Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
50 %	0 %	25 %	25 %	0 %	0 %	0 %	0 %

ⓑ Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
15 %	0 %	50 %	0 %	0 %	0 %	20 %	15 %

[4] Grading Policies

The major assignment for the course will be a regional development plan for redistributing national resources from the Seoul metropolitan area to other parts of Korea. The plan will explain what development goals are to be achieved, the mechanisms for achieving those goals, and the steps that will need to be taken to realize those future objectives. Each student will be responsible for presenting their plan to the class at the end of the semester. If the class is large, the project may be shared by a group of students. and the presentation will be a group presentation.
If the exercises are not being completed in a timely fashion, then we will have some tests to ensure that students are following the material.

ⓐ Percentage of grade evaluation

Exam	Attendance	Assignment
50 %	20 %	30 %

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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	Atlas of Korea (Posted online)	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]

Readings will be posted online. Some of them will be quite technical; others quite theoretical. Our job will be to bring the two together.

[6] Weekly lesson plans

First week	What is Regional Development? How does it work? Examples from around the world.
Second week	The reasons for development: economic and political frameworks.
Third week	Administration of regional development: how plans are made.
Fourth week	Cases of regional development: examples from the Global South and a look into South Korea's past.
Fifth week	Cases of regional development: the United States, and a look at national policy and technological development.
Sixth week	Cases of regional development: the EU, and a look at balancing economic and political goals. Special focus on Italy and Spain.
Seventh week	Looking at issues of urbanization and pseudo-urbanization--the problems of a primate city.
Eighth week	Tools for analysis--how do you figure out where development is needed, and what kind?
Ninth week	Pulling it all together: a look at the framework of a plan--long term goals, mid-range objectives, and methods for execution...a look at South Korea's plans. (Class may be online due to professor travel)
Tenth week	How plans are made for regional development: what data to collect and how. Use of GIS--may meet in the computer lab.
Eleventh week	We have the data: now what? How to analyze basic data and create a basic plan: More GIS and some introduction to basic descriptive statistics--may require meeting in the computer lab.
Twelfth week	Matching data to place--principles of GIS/ issues to overcome/ measures--strengths and shortcomings.
Thirteenth week	Crafting policy proposals based on data and contextual factors: what's your reasoning?
Fourteenth week	Creating a final regional development plan: what resources do we need? Use of computer lab depending on need.
Fifteenth week	Final plan presentations.
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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Theories of Public Management	Course Number	230604001
Major / School Year	Dept. of Public Administration / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of Public Administration / 제시 캠벨	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[13-404:수(0ł1)(0ł2)(0ł3)]
Office hours			

[1] Outline / Purpose

The social sciences are built on an underlying foundation of theory that is often overlooked by practice/empirically minded students. However, understanding the basic theories grounding the discipline is the key to producing high-quality research that makes a substantive contribution to the field.

Theories of Public Management explores the theoretical assumptions, both acknowledged and less discussed, upon which contemporary public management discourse and research is based. The aim of the class is to equip graduate students with the conceptual tools necessary to understand, critique, and, ultimately, produce publication-quality research in the field of public administration and management. As such, while the main concern of this course is developing an understanding of theory, we will not ignore its application, and throughout the semester a number of empirical studies that make use of the theories explored in class will be examined and discussed.

[2] Course Learning Outcomes

This course will take a holistic and concept based approach to studying public management. Beginning with concepts situated at the environmental level, progressing through concepts relevant to organizations as such, and finally focusing on concept relevant to the behavior and attitudes of public servants, students taking this course should have the prerequisites to build a comprehensive understanding of public management processes that have been identified in the empirical literature.

[3] Class Delivery Method

This is a graduate course and participants may view the course it as an opportunity to contribute to their dissertation or publication portfolio. The assignments have been designed with this goal in mind.

Preparation, participation and attendance: Students are expected to attend all classes fully prepared to discuss the week's readings.

Book review: Students will write a review about a book pertaining to public administration or management. The choice of book needs to be cleared with the professor and should be chosen strategically with an eye to publication. Student's that submit their review to a journal by the end of the semester will receive a bonus.

Full-length empirical research paper: Students will write an empirical (i.e., data-based) research paper as their main assignment for the class. The data used can be primary or secondary, and quantitative or qualitative. A number of datasets will be suggested /made available in class.

There will be several milestones related to the research paper, including topic selection, preliminary analysis, first draft of the literature review, full first draft, and final paper. A grade will be associated with each of these milestones.

ⓐ 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
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[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author		Publisher		Textbook	All to be provided by the professor	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	External political support
Second week	Bureaucracy, centralization, and organizational control
Third week	Organizational goals and goal ambiguity
Fourth week	Red tape
Fifth week	Performance management and performance information usage
Sixth week	Collaboration within and between organizations
Seventh week	Public participation
Eighth week	Leadership styles: transformational and transactional
Ninth week	Human resource management: performance oriented supervision and incentives
Tenth week	Autonomy and procedural justice
Eleventh week	Job satisfaction and turnover intention
Twelfth week	Organizational identification/commitment
Thirteenth week	Public service motivation
Fourteenth week	Job performance and organizational citizenship behavior
Fifteenth week	Reflections on future research and student presentations
Sixteenth week	Final Exams

[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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

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	[14-201:화(9)(0ł1)(0ł2)]
Office hours			

[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 %

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[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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

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

[1] Outline / Purpose

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

[2] Course Learning Outcomes

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

[3] Class Delivery Method

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

ⓐ Method of Teaching

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

ⓑ Using Tools

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

[4] Grading Policies

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

ⓐ 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	Hogg, McKean, and Craig	Publisher	Pearson-Prentice Hall	Textbook	Introduction to Mathematical Statistics	Issued year	2005
(2)	Author	Lind, Marchal, and Wathen	Publisher	McGraw-Hill	Textbook	Statistical Techniques in Business and Economics	Issued year	2024
(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 statistics
Second week	Data collection
Third week	Visualization of collected data
Fourth week	Description of collected data
Fifth week	Random variable and PDF
Sixth week	Estimation and inference
Seventh week	One population estimation and inference
Eighth week	Two population estimation and Inference I
Ninth week	Two population estimation and Inference II
Tenth week	ANOVA
Eleventh week	Correlation analysis
Twelfth week	Regression analysis I
Thirteenth week	Regression analysis II
Fourteenth week	Non-parametrics
Fifteenth week	Bootstrapping
Sixteenth week	

[7] Assignments

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

Syllabus

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Solid State Physics	Course Number	120601001
Major / School Year	Dept. of Physics / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of Physics / 김정우	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[05-114:수(1)(2)(3)]
Office hours			

[1] Outline / Purpose

The aim of this course is to acquire the advanced knowledges and techniques in physics to understand various quantum phenomena manifested in condensed matters.

[2] Course Learning Outcomes

- Understanding of electronic structure
- Modeling of interaction between electrons using mean field theory
- Concept of response function

[3] Class Delivery Method

1. The lecture will be given in English. (offline lecture)
2. Every student is asked to bring his/her textbook.
3. An undergraduate level of quantum mechanics and solid state physics knowledge is required to take this course.

ⓐ 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	Marvin Cohen & Steven Louie	Publisher		Textbook	Fundamentals of condensed matter physics	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	Chap.1 Concept of a solid
Second week	Chap.2 Electrons in crystals
Third week	Chap.2 Electrons in crystals
Fourth week	Chap.3 Energy bands
Fifth week	Chap.3 Energy bands
Sixth week	Chap.4 Lattice vibrations and phonons
Seventh week	Chap.4 Lattice vibrations and phonons Chap.5 Electron dynamics in crystals
Eighth week	Midterm exam
Ninth week	Chap.5 Electron dynamics in crystals
Tenth week	Chap.6 Many-electron interactions
Eleventh week	Chap.6 Many-electron interactions
Twelfth week	Chap.7 Density functional theory
Thirteenth week	Chap.7 Density functional theory Chap.8 The dielectric functions for solids
Fourteenth week	Chap.8 The dielectric functions for solids
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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Advanced Polymer Chemistry	Course Number	130604001
Major / School Year	Dept. of Chemistry / 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	[05-407:월(7)(8)(9)]
Office hours			

[1] Outline / Purpose

This course is designed to introduce topics covering polymerization processes, characterization of polymers, relationship between molecular structure and physical properties, polymer related technologies, and plastic pollution/recycling. A strong emphasis is given to introducing advanced polymer synthesis techniques, including those relevant to the whitebio field.

[2] Course Learning Outcomes

The aim of the course is to instruct students for their professional achievement and provide deep insight into making polymeric materials and to bring awareness to the plastic pollution issues and solutions through synthesis. The course participants are able to decide a synthetic method adaptable for a specific polymer, and to understand the relation between molecular structure and physical properties. Specifically, students should be able to identify polymers relevant to the whitebio field and be able to propose their syntheses.

[3] Class Delivery Method

The lecture is scheduled to be offline (face-to-face). Recorded lectures will also be provided on the LMS system for study and make-up attendance purposes.

ⓐ Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
90 %	10 %	0 %	0 %	0 %	0 %	0 %	0 %

ⓑ Using Tools

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

[4] Grading Policies

Mid-term test: 40%
Final test: 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	George Odian	Publisher	Wiley-Interscience	Textbook	Principles of Polymerization	Issued year	2004
(2)	Author	L. H. Sperling	Publisher	Wiley-Interscience	Textbook	Introduction to Physical Polymer Science	Issued year	2006
(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, Brief History of Polymers
Second week	Polymer Basics, Nomenclature and Molecular Weight
Third week	Polymer Basics, Classifications and Polymer Properties, and the whitebio field
Fourth week	Step-Growth Polymerizations
Fifth week	Chain-Growth Polymerizations: Free Radical Polymerization
Sixth week	Chain-Growth Polymerizations: Ionic and Coordination Polymerizations
Seventh week	Chain-Growth Polymerizations: Controlled Radical Polymerizations
Eighth week	Mid-term Test
Ninth week	Advanced Polymers: Copolymers and Non-linear Architecture
Tenth week	Plastic: Pollution and Recycling
Eleventh week	Biopolymers, Sequence Control
Twelfth week	Ring-Opening Polymerization
Thirteenth week	Metathesis Polymerizations
Fourteenth week	Advanced Polymerizations and Applications
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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Special Topics in Physical Chemistry	Course Number	131701001
Major / School Year	Dept. of Chemistry / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of Chemistry / 김형준	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[05-407:금(1)(2)(3)]
Office hours			

[1] Outline / Purpose

This course offers an in-depth exploration of contemporary issues in physical chemistry, focusing on the advanced study of electronic structures, with a particular emphasis on doubly excited states such as singlet fission and inverse singlet-triplet energy systems. Initial lectures provide a comprehensive understanding of electronic structures and excited states, laying the groundwork for more complex topics including the mechanisms and theoretical aspects of singlet fission. We then examine inverse singlet-triplet energy transfer, integrating both theoretical frameworks and experimental findings, while critically analyzing recent scholarly articles in this area. The curriculum incorporates a segment on computational methods in excited state dynamics and the application of machine learning in material design, emphasizing practical skills and current research trends. The course culminates in student presentations on selected literature, encouraging deep engagement with the material, followed by a comprehensive review and final examination to assess understanding and application of the concepts.

[2] Course Learning Outcomes

In this course, students will gain a comprehensive understanding of electronic structures, with a particular focus on excited states, singlet fission, and inverse singlet-triplet energy transfer. This will be complemented by the development of literature review skills, enabling students to critically analyze recent research in the field of physical chemistry, especially concerning doubly excited states. A significant portion of the course is dedicated to building proficiency in computational methods and quantum chemical approaches used in studying excited state dynamics. Additionally, students will delve into the integration of machine learning in material design, gaining insights into its application for predicting and designing materials conducive to singlet fission. The course also emphasizes the exploration of advanced topics in electronic structures and their applications in cutting-edge technologies. Enhancing research presentation skills is a key objective, where students will be encouraged to present, discuss, and critique scientific literature, fostering a deeper understanding of the subject matter. Lastly, the course aims to cultivate critical thinking and problem-solving skills, essential for navigating and interpreting complex scientific problems, through interactive group discussions and analytical activities.

[3] Class Delivery Method

The primary method of class delivery in this course centers around student-led presentations. Each student is required to select, read, and comprehensively understand a relevant paper from recent physical chemistry literature, particularly focusing on topics like electronic structures, singlet fission, and inverse singlet-triplet energy transfer. During their presentations, students will summarize the paper, highlighting key findings, methodologies, and implications for the field. These presentations will not only facilitate in-depth learning and engagement with current research but also encourage the development of critical analysis and communication skills. To support these presentations, occasional lectures and discussions will be provided to offer foundational knowledge and context. This approach ensures that students actively participate in their learning process, fostering a deeper understanding of the subject matter through direct involvement with cutting-edge research in physical chemistry.

ⓐ 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	Introduction
Second week	Singlet fission: Overview
Third week	Singlet fission: Methodology
Fourth week	Singlet fission: Mechanism (1). Direct two-electron transfer
Fifth week	Singlet fission: Mechanism (2). Superexchange mechanism
Sixth week	Singlet fission: Mechanism (3). Indirect one-electron transfer
Seventh week	Singlet fission: Mechanism (4). Vibronic coupling
Eighth week	Singlet fission: Candidate design (1) High-throughput screening approach
Ninth week	Singlet fission: Candidate design (2) Machine-learning based approach
Tenth week	Singlet fission: Candidate design (3)
Eleventh week	Singlet fission: Multiexciton formation dynamics
Twelfth week	Singlet fission: Triplet-pair decorrelation
Thirteenth week	Inverse singlet-triplet system: Overview
Fourteenth week	Inverse singlet-triplet system: Experimental obsrevation
Fifteenth week	Inverse singlet-triplet system: Theoretical investigatgion
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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Mechanical Engineering multidisciplinary seminar 1	Course Number	1002675001
Major / School Year	Dept. of Mechanical Engineering / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of Mechanical Engineering / 방민호	Grades/Lecture/ Practice	1 / 1 / 0
Phone Number		A weekday / class / lecture room	[08-203:화(6)]
Office hours			

[1] Outline / Purpose

To provide exposure of the field of mechanical engineering and related subject areas to students at graduate level with intention to show the broad and interdisciplinary nature of the field, particularly recent or new developments.

[2] Course Learning Outcomes

Students will learn of new developments in mechanical engineering, connecting much of what is learned in other courses to practical applications and active research topics.

[3] Class Delivery Method

Students attend a seminar each week of the term and submit a short report about the attended seminars.
Seminar will be given in English.

ⓐ 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
0 %	20 %	80 %

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

[5] Main teaching material & Reference books

[Main teaching material]

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

[Reference books]

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

[Other books]

[6] Weekly lesson plans

First week	Introduction
Second week	TBA
Third week	TBA
Fourth week	TBA
Fifth week	TBA
Sixth week	TBA
Seventh week	TBA
Eighth week	Midterm period
Ninth week	TBA
Tenth week	TBA
Eleventh week	TBA
Twelfth week	TBA
Thirteenth week	TBA
Fourteenth week	TBA
Fifteenth week	Final term period
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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Advanced Materials of Machines	Course Number	310706001
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:화(2)(3)(4)]
Office hours			

[1] Outline / Purpose

This course aims to provide an advanced understanding of the core principles and topics of engineering materials and their experimental basis, and to enable students to acquire a specialised knowledge and understanding of the relationships between properties, processing, and characterisation of materials, which are of significant importance for most industrial applications including mechanical, civil, construction, aeronautical, chemical or biomedical engineering.

[2] Course Learning Outcomes

1. To understand the fundamental and advanced knowledge of materials
2. To convey a theoretical background to characterise the property of materials
3. To provide the characteristic and applications of diverse engineering materials

[3] Class Delivery Method

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

ⓐ Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
40 %	20 %	40 %	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	G.E. Dieter	Publisher	McGraw-Hill	Textbook	Mechanical Metallurgy	Issued year	1988
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	

[Reference books]

(1)	Author	W.D. Callister, D.G.Rethwisch	Publisher		Textbook	Materials Science & Engineering 9/E	Issued year	2014
(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	Engineering Materials: Fundamental (1)
Third week	Engineering Materials: Fundamental (2)
Fourth week	Engineering Materials: Fundamental (3)
Fifth week	Student's Presentation: Materials
Sixth week	Student's Presentation: Materials
Seventh week	Student's Presentation: Materials
Eighth week	Midterm Exam
Ninth week	Engineering Materials: Fundamental (4)
Tenth week	Engineering Materials: Fundamental (5)
Eleventh week	Engineering Materials: Fundamental (6)
Twelfth week	Student's Presentation:Applications
Thirteenth week	Student's Presentation:Applications
Fourteenth week	Student's Presentation:Applications
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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

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 / 안호선	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[08-203:월(1)(2)(3)]
Office hours			

[1] Outline / Purpose

논문지도

[2] Course Learning Outcomes

논문 지도 및 연구 방향 설정

[3] Class Delivery Method

직접 대면 미팅

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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Thesis Research(Mechanical Engineering)	Course Number	1002234002
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	[08-101:수(5)(6)(7)]
Office hours			

[1] Outline / Purpose

논문 지도

[2] Course Learning Outcomes

논문 지도 및 연구 관련 논의

[3] Class Delivery Method

대면 미팅

ⓐ 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	논문 지도
Second week	논문 지도
Third week	논문 지도
Fourth week	논문 지도
Fifth week	논문 지도
Sixth week	논문 지도
Seventh week	논문 지도
Eighth week	논문 지도
Ninth week	논문 지도
Tenth week	논문 지도
Eleventh week	논문 지도
Twelfth week	논문 지도
Thirteenth week	논문 지도
Fourteenth week	논문 지도
Fifteenth week	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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Particle and Aerosol Engineering	Course Number	310889001
Major / School Year	Dept. of Mechanical Engineering / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of Mechanical Engineering / 김상문	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[08-203:수(7)(8)(9)]
Office hours			

[1] Outline / Purpose

This course deal with the properties, behavior, and measurement of aerosol particles.

[2] Course Learning Outcomes

The goal of this course is to acquire a thorough working knowledge of modern aerosol theory and its applications.

[3] Class Delivery Method

Lectures will be delivered by using handwritten notes, slides, and video clips.

ⓐ 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	William C. Hinds	Publisher	WILEY	Textbook	Aerosol Technology: Properties, Behavior, and Measurement of Airborne Particles, 2nd Edition	Issued year	1999
(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	Properties of Gases
Third week	Uniform Particle Motion (1)
Fourth week	Uniform Particle Motion (2)
Fifth week	Particle Size Statistics (1)
Sixth week	Particle Size Statistics (2)
Seventh week	Straight-Line Acceleration and Curvilinear Particle Motion (1)
Eighth week	Midterm exam
Ninth week	Straight-Line Acceleration and Curvilinear Particle Motion (2)
Tenth week	Adhesion of Particles
Eleventh week	Brownian Motion and Diffusion
Twelfth week	Thermal and Radiometric Forces
Thirteenth week	Filtration (1)
Fourteenth week	Filtration (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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Advanced Thermodynamics	Course Number	310704001
Major / School Year	Dept. of Mechanical Engineering / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of Mechanical Engineering / 안호선	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[08-203:월(4)(5)(6)]
Office hours			

[1] Outline / Purpose

열역학의 기본 개념을 리뷰하고, 분자동역학에서 시작하는 미시적관점에서 거시적관점의 열역학의 전체적인 내용을 다룬다.

[2] Course Learning Outcomes

많은 생각과 고찰을 필요로하는 문제들을 열역학적으로 해석하는 능력을 배양하고, 스스로 문제를 만들수 있으며, 해결하는 능력을 키운다.

[3] Class Delivery Method

판서 강의 및 문제 풀이
2020 : 100% online class, english

ⓐ 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
100 %	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	Songtag	Publisher	Wiley	Textbook	Fundamentals of Thermodynamics	Issued year	2018
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	

[Reference books]

(1)	Author	Adrian Bejan	Publisher	Wiley	Textbook	Advanced Engierring Thermodynamics	Issued year	2017
(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	Thermodynamics Review
Second week	Thermodynamics Review
Third week	Thermodynamics Review
Fourth week	Thermodynamics Review
Fifth week	Thermodynamics Review
Sixth week	Thermodynamics Review
Seventh week	Thermodynamics Review
Eighth week	Thermodynamics Review
Ninth week	Chemical process
Tenth week	Maxwell relations
Eleventh week	Exergy and availibility
Twelfth week	Exergy and availibility
Thirteenth week	Cycle problem
Fourteenth week	Problems solving
Fifteenth week	Problems solving
Sixteenth week	Problems solving

[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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Vehicle Dynamics(1)	Course Number	310666001
Major / School Year	Dept. of Mechanical Engineering / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of Mechanical Engineering / 김영진	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[08-203:금(7)(8)(9)]
Office hours			

[1] Outline / Purpose

This plan starts with the basic principles of vehicle dynamics and progresses to more complex systems and interactions, culminating in applications and contemporary challenges in the field.

[2] Course Learning Outcomes

Each week's topic is designed to deepen students' overall understanding of vehicle dynamics.

[3] Class Delivery Method

Presentations

ⓐ 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
50 %	20 %	30 %

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

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author		Publisher		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	Week 1: Vehicle Fundamentals
Second week	Week 2: Principles of Mechanics
Third week	Week 3: Mass and Inertia
Fourth week	Week 4: Forces and Motion
Fifth week	Week 5: Vibration Analysis
Sixth week	Week 6: Suspension Systems
Seventh week	Week 7: Steering Mechanisms
Eighth week	Week 8: Braking Systems
Ninth week	Week 9: Powertrain Systems
Tenth week	Week 10: Tire and Ground Interaction
Eleventh week	Week 11: Vehicle Handling
Twelfth week	Week 12: Stability and Control
Thirteenth week	Week 13: Aerodynamics
Fourteenth week	Week 14: Vehicle Simulation
Fifteenth week	Week 15: Contemporary Challenges
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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Semiconductor Devices for Energy	Course Number	1002609001
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	[08-117:금(7)(8)(9)]
Office hours			

[1] Outline / Purpose

Semiconductor Devices, Semiconductor Technology, Energy Bands and Carrier Concentration in Thermal Equilibrium, Carrier Transport Phenomena, p-n Junction, Bipolar Transistors and Related Devices, MOS Capacitor and MOSFET, Advanced MOSFET and Related Devices, MESFET and Related Devices, icrowave Diodes; Quantum-Effect and Hot-Electron Devices, Light Emitting Diodes and Lasers, Photodetectors and Solar Cells, Integrated Devices

[2] Course Learning Outcomes

Provides a basic understanding of how semiconductor devices work and the operational principles behind them, with a focus on their applications in energy.

[3] Class Delivery Method

Presentation, assignments and discussion.

ⓐ 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	SM SZE and MK Lee	Publisher	JOHN WILEY & SONS, INC.	Textbook	Semiconductor Devices Physics and Technology	Issued year	2010
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	

[Reference books]

(1)	Author	SM SZE and MK Lee	Publisher	JOHN WILEY & SONS, INC.	Textbook	Semiconductor Devices Physics and Technology	Issued year	2010
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	
(4)	Author		Publisher		Textbook		Issued year	
(5)	Author		Publisher		Textbook		Issued year	

[Other books]

[6] Weekly lesson plans

First week	Introduction 0.1 Semiconductor Devices 0.2 Semiconductor Technology Summary
Second week	Energy Bands and Carrier Concentration in Thermal Equilibrium 1.1 Semiconductor Materials 1.2 Basic Crystal Structures 1.3 Valence Bonds 1.4 Energy Bands 1.5 Intrinsic Carrier Concentration 1.6 Donors and Acceptors Summary
Third week	Carrier Transport Phenomena 2.1 Carrier Drift 2.2 Carrier Diffusion 2.3 Generation and Recombination Processes 2.4 Continuity Equation 2.5 Thermionic Emission Process 2.6 Tunneling Process 2.7 Space-Charge Effect 2.8 High-Field Effects Summary
Fourth week	p-n Junction 3.1 Thermal Equilibrium Condition 3.2 Depletion Region 3.3 Depletion Capacitance 3.4 Current-Voltage Characteristics 3.5 Charge Storage and Transient Behavior 3.6 Junction Breakdown 3.7 Heterojunction Summary
Fifth week	Bipolar Transistors and Related Devices 4.1 Transistor Action 4.2 Static Characteristics of Bipolar Transistors 4.3 Frequency Response and Switching of Bipolar Transistors 4.4 Nonideal Effects 4.5 Heterojunction Bipolar Transistors 4.6 Thyristors and Related Power Devices Summary
Sixth week	MOS Capacitor and MOSFET 5.1 Ideal MOS Capacitor 5.2 SiO2-Si MOS Capacitor 5.3 Carrier Transport in MOS Capacitors 5.4 Charge-Coupled Devices 5.5 MOSFET Fundamentals
Seventh week	Advanced MOSFET and Related Devices 6.1 MOSFET Scaling 6.2 CMOS and BiCMOS 6.3 MOSFET on Insulator 6.4 MOS Memory Structures 6.5 Power MOSFE
Eighth week	Mid-term examination
Ninth week	Microwave Diodes; Quantum-Effect and Hot-Electron Devices 8.1 Microwave Frequency Bands 8.2 Tunnel Diode 8.3 IMPATT Diode 8.4 Transferred-Electron Devices 8.5 Quantum-Effect Devices 8.6 Hot-Electron Devices Summary
Tenth week	Light Emitting Diodes and Lasers 9.1 Radiative Transitions and Optical Absorption 9.2 Light-Emitting Diodes 9.3 Various Light-Emitting Diodes 9.4 Semiconductor Lasers Summary
Eleventh week	Photodetectors and Solar Cells 10.1 Photodetectors 10.2 Solar Cells 10.3 Silicon and Compound-Semiconductor Solar Cells 10.4 Third-Generation Solar Cells 10.5 Optical Concentration Summary
Twelfth week	Film Formation 12.1 Thermal Oxidation 12.2 Chemical Vapor Deposition of Dielectrics 12.3 Chemical Vapor Deposition of Polysilicon 12.4 Atom Layer Deposition 12.5 Metallization Summary

Thirteenth week	Integrated Devices 15.1 Passive Components 15.2 Bipolar Technology 15.3 MOSFET Technology 15.4 MESFET Technology 15.5 Challenges for Nanoelectronics Summary
Fourteenth week	Revision and preparation for end-semester examination
Fifteenth week	End-semester
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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Writings for Technical Reports on Photoelectric devices and Energy	Course Number	1001908001
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	[08-117:월(1)(2)(3)]
Office hours			

[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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Autonomous Distributed System	Course Number	1001602001
Major / School Year	Dept. of Electrical Engineering / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of Electrical Engineering / 김학만	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[08-117:화(야1)(야2)(야3)]
Office hours			

[1] Outline / Purpose

Understanding backgrounds on autonomous distribution and its system.

[2] Course Learning Outcomes

Backgrounds on agent, multiagent, and autonomous distribution system.
Applications to microgrid systems.

[3] Class Delivery Method

Seminar presentation and discussions in English.

ⓐ Method of Teaching

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

ⓑ Using Tools

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

[4] Grading Policies

Evaluation on presentation material, discussion, and term projects.

ⓐ Percentage of grade evaluation

Exam	Attendance	Assignment
30 %	20 %	50 %

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

[5] Main teaching material & Reference books

[Main teaching material]

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

[Reference books]

(1)	Author		Publisher		Textbook	further notice	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	Seminar 1 and discussions
Third week	Seminar 2 and discussions
Fourth week	Seminar 3 and discussions
Fifth week	Seminar 4 and discussions
Sixth week	Seminar 5 and discussions
Seventh week	Seminar 6 and discussions
Eighth week	Mid-term project
Ninth week	Seminar 7 and discussions
Tenth week	Seminar 8 and discussions
Eleventh week	Seminar 9 and discussions
Twelfth week	Seminar 10 and discussions
Thirteenth week	Seminar 11 and discussions
Fourteenth week	Seminar 12 and discussions
Fifteenth week	Final-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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Seminar On Electrical Energy Conversion I	Course Number	1001597001
Major / School Year	Dept. of Electrical Engineering / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of Electrical Engineering / 허진	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[08-117:화(2)(3)(4)]
Office hours			

[1] Outline / Purpose

Electric and hybrid vehicles are becoming increasingly important. Maximizing autonomy is a key factor in electric vehicles (EVs), which requires drives with high power densities. Therefore, the volume and weight of the traction system must be minimized while maintaining a high level of efficiency. However, this application presents new challenges as several problems arise related to the insulation of the motor windings.
The purpose of this class is to learn various environmental and electrical waveform characteristics that affect the PDIV of electric motor winding insulation.

[2] Course Learning Outcomes

Understand the partial discharge phenomenon that occurs in electric motors and consider the various causes of partial discharge. We model how failure of an electric motor affects the occurrence of partial discharge.
Based on modeling, we will learn together about ways to minimize partial discharge of electric motors.

[3] Class Delivery Method

When a lecture is given using a book explaining partial discharge, related papers are discussed in a seminar format based on what was learned from the book.

ⓐ Method of Teaching

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

ⓑ Using Tools

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

[4] Grading Policies

ⓐ Percentage of grade evaluation

Exam	Attendance	Assignment
40 %	20 %	40 %

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

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	Gre C. Stone, Andrea Cavallini etc.	Publisher	IEEE Press Wiley	Textbook	Practical Partial Discharge Measurement on Electrical Equipment	Issued year	2023
(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 partial discharge in electric motors
Second week	Electric Fields and Electrical Breakdown 1
Third week	Electric Fields and Electrical Breakdown 2
Fourth week	Physics of Partial Discharge 1
Fifth week	Physics of Partial Discharge 2
Sixth week	Physics of Partial Discharge 3
Seventh week	Study of Partial Discharge Inception Voltage in Inverter Fed Electric Motor Insulation Systems 1
Eighth week	Study of Partial Discharge Inception Voltage in Inverter Fed Electric Motor Insulation Systems 2
Ninth week	Related Paper Seminar Presentation 1
Tenth week	Related Paper Seminar Presentation 2
Eleventh week	Related Paper Seminar Presentation 3
Twelfth week	Related Paper Seminar Presentation 4
Thirteenth week	Related Paper Seminar Presentation 6
Fourteenth week	Related Paper Seminar Presentation 7
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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Electrical Circuit Engineering	Course Number	1002610001
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	[08-117:금(4)(5)(6)]
Office hours			

[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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Advanced Power Semiconductor	Course Number	1001906001
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	[08-117:월(야1)(야2)(야3)]
Office hours			

[1] Outline / Purpose

Introduce students to the new generation of energy-efficient power electronic devices and provide students the insight useful for understanding and analyzing those devices. Silicon power electronic devices are fast approaching their performance limits set by silicon's fundamental material properties. A new generation of semiconductor materials having a wider energy bandgap has emerged which makes energy-efficient electronic, especially power electronic devices possible. These devices are capable of drastic reduction of switching and conduction losses simultaneously as well as operation under higher temperatures, making power systems considerably smaller, lighter, cheaper and more robust.

[2] Course Learning Outcomes

Characteristics, fabrication, and application of power semiconductor devices, which may include p-i-n and Schottky diodes, insulated gate bipolar transistors, field effect transistors, and thyristors. Effect of semiconductor material, device structure, and current injection levels on device performance. Device drive requirements and power circuit interaction. Implementation of power devices using wide band gap semiconductors such as silicon carbide and gallium nitride.

[3] Class Delivery Method

Lecture 90%, Seminar 10%

ⓐ 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	Benda, Vaitezslav; Gowar, John; Grant, Duncan A. C	Publisher	John Wiley and Sons, Inc.	Textbook	Power Semiconductor Devices : Theory and Applications	Issued year	1999
(2)	Author	Chenming C. Hu	Publisher	Prentice Hall	Textbook	Modern Semiconductor Devices for Integrated Circuits	Issued year	2009
(3)	Author		Publisher		Textbook		Issued year	

[Reference books]

(1)	Author	Robert Pierret	Publisher	Addison Wesley	Textbook	Semiconductor Device Fundamentals	Issued year	2002
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	
(4)	Author		Publisher		Textbook		Issued year	
(5)	Author		Publisher		Textbook		Issued year	

[Other books]

[6] Weekly lesson plans

First week	Introduction ? Semiconductors
Second week	Electrons and Holes in Semiconductors
Third week	Motion and Recombination of Electrons and Holes
Fourth week	Device Fabrication Technology
Fifth week	PN junction
Sixth week	Metal-Semiconductor junction
Seventh week	MOS capacitor
Eighth week	Midterm Exam & Seminar I
Ninth week	Diodes Thyristors
Tenth week	Bipolar transistors
Eleventh week	MOSFET
Twelfth week	MOSFET
Thirteenth week	IGBT
Fourteenth week	Drive requirements, thermal management, and protection
Fifteenth week	Drive requirements, thermal management, and protection
Sixteenth week	Final Exam; seminar II

[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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Advanced Topics in VLSI Circuit Design	Course Number	1002442001
Major / School Year	Dept. of Electronics Engineering / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of Electronics Engineering / 나태희	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[08-413:수(7)(8)(9)]
Office hours			

[1] Outline / Purpose

In this class, students present/discuss their on-going projects, and study recent papers related VLSI circuit design. Every class is progressed by presentation. By analyzing their on-going research with recently published works, research ability is expected to be improved. Also, students discuss how to apply various ideas of different fields to their own research.

[2] Course Learning Outcomes

Final goal of this class is to come up with a new idea for a paper and to give a concrete shape to the paper.

[3] Class Delivery Method

Presentation and discussion

ⓐ 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	Course overview
Second week	Presentation and discussion #1
Third week	Presentation and discussion #2
Fourth week	Presentation and discussion #3
Fifth week	Presentation and discussion #4
Sixth week	Presentation and discussion #5
Seventh week	Presentation and discussion #6
Eighth week	Midterm exam
Ninth week	Presentation and discussion #7
Tenth week	Presentation and discussion #8
Eleventh week	Presentation and discussion #9
Twelfth week	Presentation and discussion #10
Thirteenth week	Presentation and discussion #11
Fourteenth week	Presentation and discussion #12
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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Advanced Semiconductor Materials Science	Course Number	1001576001
Major / School Year	Dept. of Materials Science and Engineering / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of Materials Science and Engineering / 강영호	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[08-385:월(2)(3)(4)]
Office hours			

[1] Outline / Purpose

We will discuss recent issues pertaining to semiconductors and their applications.

[2] Course Learning Outcomes

Trend in semiconductor technologies

[3] Class Delivery Method

Presentation and discussion

ⓐ 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	Course overview
Second week	Paper review 1
Third week	Paper review 2
Fourth week	Paper review 3
Fifth week	Paper review 4
Sixth week	Paper review 5
Seventh week	Paper review 6
Eighth week	Midterm
Ninth week	Paper review 7
Tenth week	Paper review 8
Eleventh week	Paper review 9
Twelfth week	Paper review 10
Thirteenth week	Paper review 11
Fourteenth week	Paper review 12
Fifteenth week	Finals
Sixteenth week	

[7] Assignments

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

Syllabus

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Advanced Electrochemistry	Course Number	1002342001
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	[08-503:월(7)(8)(9)]
Office hours			

[1] Outline / Purpose

- Prerequisite: Materials thermodynamics and fundamental electrochemistry
- Encourage self-study and self-research

[2] Course Learning Outcomes

- Understanding of electrochemical reactions on view of thermodynamics

[3] Class Delivery Method

- All in English (2 student presentations, 1 report, Exams)
- Presentation in English (20 min-talk)
- One-page report in English

ⓐ 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

- Student presentation 40 %
- Exams 40%
- Attandance 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	Jae-ha Myung	Publisher		Textbook	lecture slides	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	Lecture overview & introduction 1
Second week	-Thermodynamics? -Kinetics? -Electrochmistry?
Third week	-Basic Terminologies
Fourth week	- Electrochemical thermodynamics 1
Fifth week	- Electrochemical thermodynamics 2
Sixth week	- Electrochemical thermodynamics 3
Seventh week	- Student presentation 1
Eighth week	- mid-term
Ninth week	- Electrode/Electrolyte mechanism 1
Tenth week	- Electrode/Electrolyte mechanism 2
Eleventh week	- Fuel cell VS Battery
Twelfth week	- ex-situ analysis methods
Thirteenth week	- in-situ analysis methods
Fourteenth week	- Student presentation 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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

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	[08-534:수(야1)(야2)(야3)]
Office hours			

[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

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

ⓐ 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	
(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 & Final Exam

[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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	NUCLEAR POWER SAFETY ENGINEERING	Course Number	1000685001
Major / School Year	Dept. of Safety Engineering / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of Safety Engineering / 김태완	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[08-338:화(야1)(야2)(야3)]
Office hours			

[1] Outline / Purpose

In Korea, 24 nuclear power plants are in operation as of Jan. 2024.
In addition, many nuclear applicaitons exists for industrial use.
It is very important to understand unique features of nuclear safety in order to utilize the nuclear energy safely
Thus, this course aims at introduce the status and characteristics of nuclear iapplications/tenchnology and understanding the unique features of nuclear safety.

[2] Course Learning Outcomes

- understanding nuclear technology
- understanding nuclear regulatory systems and activities
- understanding methods/systems to improve the safety

[3] Class Delivery Method

- Lecture-based learning

ⓐ 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
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	Lecture material	Issued year	
(2)	Author	J.R.Larmarsh and A,J. Baratta	Publisher	Pearson	Textbook	Introduction to Nuclear Engineering, 4th edition	Issued year	2022
(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 the course
Second week	Concept of nuclear safety
Third week	Nuclear power plant system
Fourth week	Nuclear power plant system
Fifth week	Nuclear power plant system
Sixth week	Nuclear power plant system
Seventh week	Nuclear safety regulations
Eighth week	Midterm Exam
Ninth week	Review of major nuclear accidents
Tenth week	Review of major nuclear accidents
Eleventh week	Determinstic safety analysis
Twelfth week	Determinstic safety analysis
Thirteenth week	Probabilistic safety assessment
Fourteenth week	Various aspect of nuclear safety
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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Measurement Theory of Fluid and Combustion Phenomena	Course Number	1001590001
Major / School Year	Dept. of Safety Engineering / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of Safety Engineering / 이민철	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[08-534:화(야1)(야2)(야3)]
Office hours			

[1] Outline / Purpose

This lecture is aiming to study measurement theory of temperature, flow field, pressure, smoke flow, heat radiation and etc. which is mostly used in the field of fluid and combustion sciences.
Students can learn various theory, working principle and applications of fire detector, laser, lens, high speed camera, laser applied measurement of fluid flow and heat release.

[2] Course Learning Outcomes

To understand the working principle of fire detector, flow visualization tools, high speed photography, laser applied technique such as planar laser induced fluorescence, particle image velocimetry, laser doppler velocimetry
To build ability for basic measurement techniques as a safety engineer and to investigate novel measurement techniques using light and sonic waves.

[3] Class Delivery Method

This lecture will be given by the blended methods of on-line and off-line classes.
In on-line class, basic theory on measurement with easy examples will be explained before the off-line class.
In off-line class, derivation from mathematical modeling to solution methods of engineering problems will be explained by professor, and physical meaning of the solution will be explained using PPT presentation as well as writing on blackboard. To encourage the students participation, the chance to discuss about various applicationss will be provided to students.

ⓐ Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
40 %	30 %	10 %	0 %	0 %	0 %	0 %	20 %

ⓑ Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
20 %	0 %	0 %	0 %	0 %	0 %	60 %	20 %

[4] Grading Policies

Exam (including term project) : 60%
Attendance : 20%
Assignment : 20%
Other score rating directions regarding early leaving, lateness and etc. will be followed by rules and codes of University.
Final term project will cover the evaluation of final exam

ⓐ 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	MC Lee	Publisher		Textbook	Hand out PPT files	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	Lecture outline Introduction to Measurement theory of fluid and combustion phenomena
Second week	Introduction to Measurement theory of fluid and combustion phenomena
Third week	Principle of Fire Detectors
Fourth week	Principle of Ultra Sonic Waves and Temperature Measurement
Fifth week	Principle of Fiber Bragg Grating and Temperature Measurement
Sixth week	Introduction Definition, Phenomenon and Nature of Light
Seventh week	Introduction Definition, Phenomenon and Nature of Light
Eighth week	LASER
Ninth week	Lens
Tenth week	Flow Visualization Tools
Eleventh week	High Speed Photography
Twelfth week	Laser Doppler Velocimetry (LDV)
Thirteenth week	Particle Image Velocimetry (PIV)
Fourteenth week	Final term project and discussion
Fifteenth week	Final term project and discussion
Sixteenth week	Final term project and discussion Lecture feedback and evaluation

[7] Assignments

The first assignment	assignment	Term project	submission date	
	purpose	Develop investigation ability of novel measurement tech. as a safety		
	procedure & notice			
	references			
The second assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			
The third assignment	assignment		submission date	
	purpose			
	procedure & notice			
	references			

Syllabus

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

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 / 김종우	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[09-225:화(7)(8)(9)]
Office hours			

[1] Outline / Purpose

화학공학분야의 여러 첨단 연구에 대해 개론적으로 학습하고 연계성에 대해서 토론

[2] Course Learning Outcomes

화학공학분야의 여러 첨단 연구에 대해 개론적으로 학습하고 연계성에 대해서 토론

[3] Class Delivery Method

세미나연사 초청, 연구발표, 연구자로 거듭나기 위한 필수기술 습득

ⓐ 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	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	Research skills
Ninth week	Seminar 7
Tenth week	Seminar 8
Eleventh week	Seminar 9
Twelfth week	Seminar 10
Thirteenth week	Research skills
Fourteenth week	Research skills
Fifteenth week	Research skills
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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Principles of Optical Techniques for Information Security	Course Number	1002652001
Major / School Year	Dept. of Information and Telecommunication Engineering / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of Information and Telecommunication Engineering / 전현채	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[07-206:월(5B-6)(7-8A)]
Office hours			

[1] Outline / Purpose

This graduate-level course is aimed to understand the optical techniques for information security and to design such optical systems.

[2] Course Learning Outcomes

The principle of optical information security is examined, followed by studies on various optical technologies such as Quantum-key-distribution (QKD), optical encryption techniques and optical physical layer security methods.

[3] Class Delivery Method

Students learn how to design and develop such optical security systems, through Matlab programming and result analysis.

ⓐ Method of Teaching

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

ⓑ Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
20 %	0 %	50 %	0 %	0 %	0 %	30 %	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	Optical wireless communication basics (1) : Transceiver
Third week	Optical wireless communication basics (2) : Channel modelling
Fourth week	Optical wireless communication basics (2) : Modulation techniques
Fifth week	Optical wireless based physical layer security method (1)
Sixth week	Optical wireless based physical layer security method (2)
Seventh week	Optical wireless based physical layer security method (3)
Eighth week	Midterm exam
Ninth week	Cryptography background (1)
Tenth week	Cryptography background (2)
Eleventh week	Quantum key distribution (1) : Theory
Twelfth week	Quantum key distribution (2) : BB84 protocol and security proof
Thirteenth week	Quantum key distribution (3) : Free-space QKD
Fourteenth week	Quantum key distribution (4) : Commercial system review and future perspective
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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	RF devices design for communication	Course Number	396022001
Major / School Year	Dept. of Information and Telecommunication Engineering / 전학년	completion division /Grade evaluation	/
Department/Professor	Dept. of Information and Telecommunication Engineering / 강승택	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[07-206:목(1-2A)(2B-3)]
Office hours			

[1] Outline / Purpose

We learn and grab the characteristics and design methodologies of the RF passive devices(including antennas) and active components

[2] Course Learning Outcomes

1. Basics of RF energy transmission and field radiation
2. Transmission line approach for the frequency domain analysis of RF passive & active components
3. 3D field simulation for the frequency domain analysis of RF passive & active components

[3] Class Delivery Method

Lectures & discussions

ⓐ Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
70 %	%	30 %	%	%	%	%	%

ⓑ Using Tools

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

[4] Grading Policies

ⓐ Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

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

[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author	R. Ludwig and P. Bretchko	Publisher	Prentice Hall	Textbook	RF Circuit Design	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	Fundamentals of transmission line theories, parameter extraction of component structures, termination and impedancce calculation
Second week	Impedance matching of transmission lines using the Smith Chart
Third week	One port and multi-port theories
Fourth week	Design theories of RF impedance and couplers
Fifth week	RF filter theories
Sixth week	Implementation theories of RF components and examples
Seventh week	Mid-terms
Eighth week	Kinds and properties of non-linear rectifiers and amplifiers
Ninth week	RF modeling of non-linear rectifiers and amplifiers
Tenth week	Impedance matching network design of RF active components
Eleventh week	Design of RF amplifiers
Twelfth week	Design theories of RF oscillators and mixers
Thirteenth week	General theories of passive antennas
Fourteenth week	Size-reduction theories of planar passive antennas
Fifteenth week	Theories of Waveguide and SIW antennas
Sixteenth week	Finals

[7] Assignments

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

Syllabus

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Advanced Numerical Analysis in Hydraulics	Course Number	411760001
Major / School Year	Dept. of Civil & Environmental Engineering / 전학년	completion division /Grade evaluation	/
Department/Professor	School of Urban and Environmental Engineering / 변성준	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[08-337:수(야1)(야2)(야3)]
Office hours			

[1] Outline / Purpose

To understand the general concepts of hydraulics, hydrology, water resources engineering and water supply and sewerage engineering, and to combine them to promote understanding of water engineering to reflect in real life.
1. Understand the general academic background and applications of computer based water engineering.
2. Discuss the unsteady flow of streams, sewers.
3. Understand the numerical methods for water engineering and the different types of differential methods, and apply them to actual structures and streams.

[2] Course Learning Outcomes

To increase understanding of utilization in real life through basic concepts and applications of manual engineering, and to maximize practical use by analyzing water-related structures based on computers

[3] Class Delivery Method

The class begins with a description of the basic concept and also discusses computer-based practices and practical application examples.
And students had rather bring laptop or tablet with "Excel".

ⓐ Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
60 %	10 %	10 %	10 %	0 %	10 %	0 %	0 %

ⓑ Using Tools

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

[4] Grading Policies

Attendance: 20%, Homework and assignment: 20%, Seminar or presentation: 10%, Midterm exam: 20%, Final exam: 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]

Blackboard writing, print out material and computer

[6] Weekly lesson plans

First week	Introduction and Orientation Definition of Water Engineering Introduction of Numerical methods
Second week	"Excel" the numerical solver Practice the basic functions.
Third week	Principal Equations Introduction and derivation
Fourth week	Full dynamic Saint-Venant equation for understanding and application
Fifth week	Momentum in open channel
Sixth week	Hydraulic structures with its numerical analysis (Weir, Orifice)
Seventh week	Unsteady flow
Eighth week	Mid-term exam
Ninth week	Upwind scheme and kinematic wave equation
Tenth week	Consistency, stability, convergency for partial differential equation for water
Eleventh week	Advection, diffusion and dispersion of contaminant in water
Twelfth week	"Matlab" or "Python" the numerical solver. Introduction and practice.
Thirteenth week	FDM, FEM, FVM and MOC in water engineering with its application
Fourteenth week	Hydraulic discontinuity and jump relationship
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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Seminar on the Structural Engineering	Course Number	410608001
Major / School Year	Dept. of Civil & Environmental Engineering / 전학년	completion division /Grade evaluation	/
Department/Professor	School of Urban and Environmental Engineering / 김성한	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[08-229:월(야1)(야2)(야3)]
Office hours			

[1] Outline / Purpose

The first part of this course aims to provide an understanding of the dynamic behavior of civil engineering structures with an emphasis on buildings and bridges. Free vibration and forced vibration (harmonic, periodic, arbitrary, impulse) of structures (single- and multi-degree-of-freedom) are investigated.

[2] Course Learning Outcomes

Learn how to model discrete single-degree and multiple-degree vibratory systems and calculate the free and forced response of these systems. Learn to model continuous vibratory systems ? vibration of strings, axial vibration of rods, torsional vibration of shafts, and transverse vibrations of slender beams. Calculate the mode shapes and frequencies for the free response of continuous vibratory systems and use modal methods to calculate the forced response of these systems. Learn to use finite element methods for the analysis of the vibrations of structures. Apply the methods learned to a realistic engineering vibration problem and write a report on the results.

[3] Class Delivery Method

plan to explain various theories in the textbook and research and present related papers, and plan to develop understanding of interpretation methods by solving related problems through homework.

ⓐ 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
80 %	0 %	20 %	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	A.K. Chopra	Publisher	Prentice Hall	Textbook	Dynamics of Structures	Issued year	
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	

[Reference books]

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

[Other books]

[6] Weekly lesson plans

First week	Part 1: Equation of Motion
Second week	Free Vibration, HW1
Third week	Response of Harmonic and Periodic Excitations
Fourth week	Response of Arbitrary, Step, and Pulse Excitation
Fifth week	Linear System
Sixth week	Inelastic System
Seventh week	Generalized 3DOF system
Eighth week	Mid-term
Ninth week	Part 2: Equation of Motion
Tenth week	Free Vibration
Eleventh week	Damping in Structure
Twelfth week	Linear System
Thirteenth week	Reduction of DOF
Fourteenth week	Distributed Mass and Elasticity
Fifteenth week	Introduction to FEM
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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Structural Dynamics	Course Number	410603001
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:화(0f1)(0f2)(0f3)]
Office hours			

[1] Outline / Purpose

To understand the basic and advanced topics in structural dynamics, and the application to the seismic design of structures.

[2] Course Learning Outcomes

To help students with understanding the key concepts in structural dynamics.

[3] Class Delivery Method

The class would utilize blackboard mostly. Homework problems may be assigned every week.

ⓐ Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
60 %	20 %	0 %	0 %	10 %	10 %	0 %	0 %

ⓑ Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
90 %	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	To be announced in class	Issued year	
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	

[Reference books]

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

[Other books]

[6] Weekly lesson plans

First week	Introduction
Second week	SDOF : free vibration
Third week	SDOF : forced vibration (harmonic excitation)
Fourth week	SDOF : forced vibration (harmonic excitation)
Fifth week	SDOF : forced vibration (harmonic excitation)
Sixth week	SDOF : forced vibration (impulse)
Seventh week	SDOF : introduction to numerical solutions
Eighth week	Midterm exam
Ninth week	MDOF : free vibration and eigenvalue analysis
Tenth week	MDOF : free vibration and eigenvalue analysis
Eleventh week	MDOF : modal superposition method
Twelfth week	Seismic excitation : introduction
Thirteenth week	Seismic excitation : time history analysis
Fourteenth week	Seismic excitation : response spectrum analysis
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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Theory of Plasticity	Course Number	411712001
Major / School Year	Dept. of Civil & Environmental Engineering / 전학년	completion division /Grade evaluation	/
Department/Professor	School of Urban and Environmental Engineering / 우상인	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[08-337:목(야1)(야2)(야3)]
Office hours			

[1] Outline / Purpose

This class, theory of plasticty, covers stress and strain analysis, the elastic constitutive model, inelasticity, classical plasticity, and basic numerical implementation. Models covered in this class include basic (Mises, Tresca, Mohr-Coulomb, Drucker-Prager) and advanced constitutive model (Modified Cam Clay, Bounding Surface Models). Solution of boundary value problems is illustrated using limit analysis as well as constrained plastic flow problems.

[2] Course Learning Outcomes

If students have learned this class, then they should have following capabilities:
- To understand, use, and build constitutive models for plastic materials
- To solve plastic boundary value problems for a limited number of cases
- To perform elementary numerical analyses incorporated with plastic models

[3] Class Delivery Method

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

ⓐ Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
90 %	0 %	0 %	10 %	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
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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	Jacob Lubliner	Publisher	Dover	Textbook	Plasticity Theory	Issued year	1990
(2)	Author	Belytschko et al.	Publisher	Wiley	Textbook	Nonlinear Finite Elements for Continua and Structures	Issued year	2013
(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	Mathematics
Second week	Stress / Strain
Third week	Stress / Strain
Fourth week	Stress / Strain
Fifth week	Thermodynamics
Sixth week	Elasticity
Seventh week	Inelasticity
Eighth week	Mid-term
Ninth week	Classical plasticity
Tenth week	Flow, evolution, and hardening rules
Eleventh week	Advanced models
Twelfth week	Week 12: Limit analysis
Thirteenth week	Numerical implementation
Fourteenth week	Numerical implementation
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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Hydraulic Engineering Seminar	Course Number	411809001
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	[08-337:월(야1)(야2)(야3)]
Office hours			

[1] Outline / Purpose

This course aimed to learn the hydraulics engineering for urban flooding: Students will study the Integrated Urban Flood Risk Management with comprehensive, forward-looking operational guidance on how to manage the risk of floods in a rapidly transforming urban environment and changeable climate.
The course serves as a primer for decision and policy makers, technical specialists, central, regional and local government officials, and concerned stakeholders in the community sector, civil society and non-governmental organizations, and the private sector.

[2] Course Learning Outcomes

1. Basics of hydraulic engineering
2. Understanding flood hazard & impacts
3. Integrated flood risk management
4. Practice of urban flood analysis
5. Research paper: team / individual projects

[3] Class Delivery Method

Online & offline lecture with presentation, video, computer practice.

ⓐ Method of Teaching

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

ⓑ Using Tools

Blackboard	OHP	Slide	Chart	Video	Audio	Computer	The others
0 %	0 %	50 %	0 %	10 %	0 %	30 %	10 %

[4] Grading Policies

ⓐ Percentage of grade evaluation

Exam	Attendance	Assignment
60 %	20 %	20 %

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

[5] Main teaching material & Reference books

[Main teaching material]

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

[Reference books]

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

[Other books]

[6] Weekly lesson plans

First week	Introduction
Second week	Hydraulics and Hydrology in Engineering
Third week	Fundamental Hydrodynamics
Fourth week	Hydraulic Devices
Fifth week	Uniform Flow in Channels
Sixth week	Varied Flow in Channels (1)
Seventh week	Varied Flow in Channels (2)
Eighth week	Mid-term course work
Ninth week	Hydrodynamics (1)
Tenth week	Hydrodynamics (2)
Eleventh week	Hydrodynamics Modeling
Twelfth week	Storm Sewer Design
Thirteenth week	Urban flood analysis
Fourteenth week	Integrated flood risk management
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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Sediment Dynamics1	Course Number	1002993001
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	[08-220:수(0f1)(0f2)(0f3)]
Office hours			

[1] Outline / Purpose

This course outlines the fundamental knowledge of soil dynamics and covers vibration of elementary systems, dynamic soil properties, wave propagation and vibration of foundation.

[2] Course Learning Outcomes

Course objectives:

(1) Understand and be able to define basic terms.
(2) Have conceptual understanding of the phenomena and mechanisms in soil dynamics, mainly because 'everything in dynamics is relative'.
(3) Be able to derive critical theories/governing equations using engineering 'common sense' (e.g., compatibility, force equilibrium, and
mass conservation).
(4) Be able to provide critical reviews on technical papers studying soil dynamics, lab & field testing, earthquake engineering, and soil behavior.

[3] Class Delivery Method

Lecture: 70%
Project presentation: 30%

ⓐ 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		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 and Introduction
Second week	Vibration (1)
Third week	Vibration (2)
Fourth week	Measurement of vibration
Fifth week	Response Spectra for earthquake
Sixth week	Vibration (3)
Seventh week	Vibration (4)
Eighth week	Mid-term exam
Ninth week	Dynamic Soil Properties
Tenth week	1D Wave propagation
Eleventh week	3D Wave Propagation
Twelfth week	Foundation Vibration (1)
Thirteenth week	Foundation Vibration (2)
Fourteenth week	Foundation Vibration (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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Theory on Reinforced Concrete Structures	Course Number	410604001
Major / School Year	Dept. of Civil & Environmental Engineering / 전학년	completion division /Grade evaluation	/
Department/Professor	School of Urban and Environmental Engineering / 이승정	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number	0328358467	A weekday / class / lecture room	[08-123:수(8)(9)(야1)]
Office hours	email appointment at any time		

[1] Outline / Purpose

The primary objective of this course is to understand and design reinforced concrete structures and to help students create a baseline to become competent practical designers. The approach taken reflects the strong belief that the engineer needs to develop a solid understanding of fundamental principles rather than relying upon a large collection of restricted, empirical equations for design. The review of flexural behavior and design concepts and the design of flexural members, columns, and shear walls will be discussed in this course. We also discuss about prestressed concrete members and composite structures such as FRP reinforced concrete members and stee fiber reinforced concrete.

[2] Course Learning Outcomes

1. To understand and familiarize with the recently revised design codes
2. To learn how to design RC members for flexure, shear and torsion
3. To understand the behavior of prestressed concrete member
4. To learn how to design composite structures such as FRP or steel fiber reinforced concrete

[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
10 %	0 %	70 %	0 %	0 %	0 %	0 %	20 %

[4] Grading Policies

1. Assignment: About 3-4 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		Publisher		Textbook	lecture material	Issued year	
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	

[Reference books]

(1)	Author	J.K. Wight, J.G. Macgregor	Publisher	Pearson	Textbook	Reinforced concrete: mechanics and design (dont have to buy)	Issued year	2016
(2)	Author	Young Soo Yoon	Publisher	CIR	Textbook	Mechanics and Design of Reinforced Concrete [written in Korean]	Issued year	
(3)	Author		Publisher	American Concrete Institute	Textbook	Building Code Requirements for Structural Concrete(ACI 318-19)	Issued year	2019
(4)	Author		Publisher		Textbook		Issued year	
(5)	Author		Publisher		Textbook		Issued year	

[Other books]

[6] Weekly lesson plans

First week	Introduction / What else can we do from Concrete? / Future concrete technology
Second week	Design method and strength requirements
Third week	Recent revision of design code update for ACI318 code / history of ACI318 code revision
Fourth week	Design for flexural and axial load
Fifth week	Design for flexural and axial load
Sixth week	Design for shear
Seventh week	Design for shear
Eighth week	Midterm
Ninth week	Design for torsion
Tenth week	Design for torsion
Eleventh week	Prestressed concrete introduction / response of members subjected to axial load
Twelfth week	response of members subjected to axial load and flexure load
Thirteenth week	Design for composite structures: FRP reinforced concrete member
Fourteenth week	Design for composite structures: steel fiber reinforced concrete
Fifteenth week	Fianl 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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Hydraulics in Rivers	Course Number	410712001
Major / School Year	Dept. of Civil & Environmental Engineering / 전학년	completion division /Grade evaluation	/
Department/Professor	School of Urban and Environmental Engineering /	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[08-434:목(야1)(야2)(야3)]
Office hours			

[1] Outline / Purpose

This curriculum provides a broad overview of the essential topics in advanced river mechanics. Specific courses may emphasize certain aspects based on the expertise of the faculty and the interests of the students. Practical applications, fieldwork, and real-world case studies should be integrated into the course to enhance students' understanding and application of the concepts learned.

[2] Course Learning Outcomes

The objectives of the River Hydraulics graduate course are to provide students with a comprehensive understanding of the principles, theories, and applications in river engineering and hydraulics. The course aims to equip students with the necessary knowledge and skills to analyze, model, and design river systems, considering the complex interactions between water flow, sediment transport, and river morphology. Additionally, the course intends to foster critical thinking and problem-solving abilities relevant to challenges in river engineering and management.

[3] Class Delivery Method

The course will employ a combination of theoretical lectures, practical applications, and hands-on laboratory work. Students will engage in case studies, numerical modeling exercises, and fieldwork to gain practical insights into river hydraulics. The teaching methods will emphasize the integration of advanced computational tools and modeling techniques used in river systems analysis. Guest lectures from industry experts and field visits to relevant sites will enhance students' exposure to real-world applications. Class discussions and group projects will encourage collaborative learning and the application of theoretical concepts to practical scenarios, preparing students for research and professional roles in river engineering and hydraulics.

ⓐ Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
80 %	10 %	10 %	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		Publisher		Textbook	pdf files	Issued year	
(2)	Author		Publisher		Textbook		Issued year	
(3)	Author		Publisher		Textbook		Issued year	

[Reference books]

(1)	Author	P.Y. Julien	Publisher	Cambridge Press	Textbook	River mechanics	Issued year	
(2)	Author	F.M. Henderson	Publisher	MacMillan publishing	Textbook	Open Channel Flow	Issued year	
(3)	Author		Publisher		Textbook		Issued year	
(4)	Author		Publisher		Textbook		Issued year	
(5)	Author		Publisher		Textbook		Issued year	

[Other books]

[6] Weekly lesson plans

First week	1. Introduction to River Systems: Overview of river systems Importance of rivers in natural ecosystems Human impacts on rivers
Second week	2. Fluid Mechanics for River Engineers: Reynolds transport theorem Governing equations for open channel flow Sediment transport equations Boundary layer theory
Third week	3. River Hydraulics: Open channel flow principles Manning's and Chezy's equations Gradually varied flow Rapidly varied flow and hydraulic jumps
Fourth week	4. Sediment Transport in Rivers: Bedload, suspended load, and wash load Bed forms and their dynamics Sediment transport equations River channel morphology and sediment deposition
Fifth week	5. River Morphodynamics: Channel evolution and geomorphic changes Bank erosion and protection measures Channel stability analysis Fluvial geomorphology
Sixth week	6. River Modeling: Numerical modeling of river flows Two-dimensional and three-dimensional modeling Introduction to computational fluid dynamics (CFD) Model calibration and validation
Seventh week	Mid-term evaluation quiz essay about water in my hometown
Eighth week	7. River Restoration and Management: Principles of river restoration Best management practices Environmental considerations in river management Case studies of successful river restoration projects
Ninth week	Special seminar I Hydrodynamic analysis in river system
Tenth week	Special seminar II Advanced tech. for urban flood management
Eleventh week	8. River and Watershed Interactions: Watershed hydrology Impacts of land use on rivers Water quality considerations Integrated watershed management
Twelfth week	9. Climate Change and Rivers: Impact of climate change on river systems Sea level rise and river deltas Adaptation and mitigation strategies
Thirteenth week	10. Fieldwork and Lab Techniques: Field measurements of river hydraulics and morphology Sediment sampling and analysis Laboratory experiments in fluvial processes
Fourteenth week	11. Advanced Topics in River Mechanics: Turbulence in rivers Ecohydraulics Remote sensing applications in river studies Advances in river monitoring technologies
Fifteenth week	final test
Sixteenth week	

[7] Assignments

The first assignment	assignment	essay about water issues in my hometown	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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Qualitative Design Research Methodology	Course Number	1003015001
Major / School Year	Dept. of Design / 전학년	completion division /Grade evaluation	/
Department/Professor	Division of Design / 박동명	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[16-210:월(6)(7)(8)]
Office hours			

[1] Outline / Purpose

1) To understand qualitative research methodologies of academic design research
2) To understand academic research papers

[2] Course Learning Outcomes

1) To cultivate competencies in the use of qualitative design research methodologies
2) To cultivate competencies for producing qualitative design research papers

[3] Class Delivery Method

1) To understand a theory & knowledge
2) To understand examples
3) To apply the theory & knowledge → Tasks

ⓐ Method of Teaching

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

ⓑ Using Tools

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

[4] Grading Policies

To exam tasks 100%

ⓐ 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	Dongmyung Park	Publisher		Textbook	PowerPoint Slides	Issued year	2024
(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	Module Introduction
Second week	Academic research and paper
Third week	Academic research and paper
Fourth week	Abstract
Fifth week	Introduction
Sixth week	Literature Review
Seventh week	Research Methodology
Eighth week	Research Methodology
Ninth week	Qualitative Research Method
Tenth week	Qualitative Research Method
Eleventh week	Qualitative Research Method
Twelfth week	Qualitative Research Method
Thirteenth week	Finding
Fourteenth week	Discussion
Fifteenth week	Conclusion
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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Governance and Policies against Climate Change	Course Number	1002885001
Major / School Year	Dept. of International Climate Cooperation / 전학년	completion division /Grade evaluation	/
Department/Professor	School of Urban and Environmental Engineering / 이효정	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[28-418:목(6)(7)(8)]
Office hours			

[1] Outline / Purpose

The world is facing a climate crisis. Learn about environmental issues that lead to global, national, and local issues, and explore how climate change is being applied in local development. Based on this, students identify climate change issues in their respective countries and local areas, and discuss solutions to overcome them.

[2] Course Learning Outcomes

Students should understand the relative policies, governance structures, and current issues related to climate change in each country, and based on this, submit a draft for each country's ODA project concept paper.

[3] Class Delivery Method

Lecture, Presentation

ⓐ Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
50 %	10 %	30 %	0 %	0 %	0 %	10 %	0 %

ⓑ Using Tools

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

[4] Grading Policies

Active participation of students is strongly required.
Students must be able to explain the governance structure related to the environment and regional development in their country. Additionally, students who actively participate in constructive discussions about other students' opinions will receive good grades.
Grades be awarded based on how faithfully each presentation material is prepared.

ⓐ Percentage of grade evaluation

Exam	Attendance	Assignment
30 %	20 %	50 %

· 출석성적 : 20점 만점 (학칙시행세칙 제56조 제2항) → 일반 과목(3학점) 1시간 결석시 1/3점 감 → 3시간 결석시 1점 감점
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[5] Main teaching material & Reference books

[Main teaching material]

(1)	Author		Publisher		Textbook	Presentation material prepared by the professor	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: Understanding Regional Development Cooperation: Among International Development Cooperation Areas
Second week	Food security and climate change
Third week	Understanding rural development and project cases
Fourth week	Environment, Social and Governance(ESG) of agri-food companies and international development cooperation
Fifth week	Field trip : National Agricultural Museum and Suwon Hwasong Castle
Sixth week	Agricultural Value Chain and Food System
Seventh week	Student presentations 1 - Structure, role, and challenges of government governance related to environment and regional development in each country
Eighth week	Student presentations 2 - Structure, role, and challenges of government governance related to environment and regional development in each country
Ninth week	Student presentations 3 - Structure, role, and challenges of government governance related to environment and regional development in each country
Tenth week	Student presentations 4 - Structure, role, and challenges of government governance related to environment and regional development in each country
Eleventh week	Student presentations 5 - Structure, role, and challenges of government governance related to environment and regional development in each country
Twelfth week	Student presentations 6 - Structure, role, and challenges of government governance related to environment and regional development in each country
Thirteenth week	Student presentations 7 - Structure, role, and challenges of government governance related to environment and regional development in each country
Fourteenth week	Student presentations 8 - Structure, role, and challenges of government governance related to environment and regional development in each country
Fifteenth week	Student presentations 9 - Structure, role, and challenges of government governance related to environment and regional development in each country
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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Global Energy Market and Policies	Course Number	1002889001
Major / School Year	Dept. of International Climate Cooperation / 전학년	completion division /Grade evaluation	/
Department/Professor	School of Urban and Environmental Engineering / 김효선	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[28-418:월(7)(8)(9)]
Office hours			

[1] Outline / Purpose

This course studies energy supply and demand, energy markets, Geopolitics, and analytical skills in energy fields from theoretical as well as empirical perspectives. It covers various issues regarding oil, natural gas, electricity markets and related policy options.

[2] Course Learning Outcomes

This course will target to stimulate students to re-think about geopolitics and energy market: why are we facing oil price risk and carbon risk? who are the main drivers to change geopolitics and energy market?

[3] Class Delivery Method

PPT + YOUTUBE MATERIAL + DISCUSSION

ⓐ 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

mid-term exam(40%) + FINAL EXAM(60%) IN TOTAL EXAM(100%)

ⓐ 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	Subhes C. Bhattacharyya	Publisher	Springer	Textbook	Energy Economics: Concepts, Issues, Markets and Governance	Issued year	2019
(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	GLOBAL ECONOMY AND GEOPOLITICS/; WHAT ARE THE ISSUES?
Second week	GEOPOLITICS AND ENERGY OUTLOOK: WHO ARE THE LEADING PLAYERS?
Third week	ENERGY OUTLOOK BY DIFFERENT PLAYER? WHAT MATTERS TO THEM?
Fourth week	TERMINOLOGY AND TERMINOLOGY: NEW ICONS
Fifth week	BASICS OF MICROECONOMICS
Sixth week	LEADING POLICY MAKERS: EU? NOT ANYMORE!
Seventh week	MID-TERM EXAM
Eighth week	WHAT WE HAVE FOR ENERGY ECONOMICS?
Ninth week	POLICY OPTIONS AND SDGS
Tenth week	ECONOMICS AND POLITICS OF OIL
Eleventh week	ECONOMICS OF NATURAL GAS
Twelfth week	ECONOMICS OF CLIMATE CHANGE
Thirteenth week	ROUND TABLE DISCUSSION
Fourteenth week	POLICY VS. ACTION
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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Construction of GHGs Inventory	Course Number	1002884001
Major / School Year	Dept. of International Climate Cooperation / 전학년	completion division /Grade evaluation	/
Department/Professor	School of Urban and Environmental Engineering / 이희관	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[28-418:수(7)(8)(9)]
Office hours			

[1] Outline / Purpose

Greenhouse gas inventory requiring estimation of carbon dioxide emissions and removals in land-use categories for national greenhouse gas inventory and changes in stocks of carbon in projects aimed at climate change mitigation has become increasingly important in global efforts to address climate change. This class provide detailed step-by-step information on sampling procedures, field and laboratory measurements, application of remote sensing and GIS techniques, modeling, and calculation procedures along with sources of data for greenhouse gas inventory.

[2] Course Learning Outcomes

[3] Class Delivery Method

Interactive group discussion on practical examples, individual presentations on climate solutions by students,
Each student is required to write a short proposal for climate projects that could be submitted to international agencies.

ⓐ 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	Introduction to the IPCC Guidelines
Second week	Estimation methods
Third week	Inventory quality
Fourth week	Compiling an inventory
Fifth week	Source categories
Sixth week	Methodological approaches
Seventh week	Data collection issues
Eighth week	Mid-term exam
Ninth week	Emission factors
Tenth week	Activity data
Eleventh week	Uncertainty in inventory estimates
Twelfth week	QA/QC and completeness
Thirteenth week	Potential double counting between sectors
Fourteenth week	Non-energy use of fuels
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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Special Lecture on Environmental Science	Course Number	1001630001
Major / School Year	Dept. of International Climate Cooperation / 전학년	completion division /Grade evaluation	/
Department/Professor	School of Urban and Environmental Engineering / 안정규	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[28-404A:목(2)(3)(4)]
Office hours			

[1] Outline / Purpose

This course aims to learn and understand environmental fluid dynamics. The natural phenomena of river flow, ocean currents, and air motion which transports the pollutants.

[2] Course Learning Outcomes

Students will understand hydraulics, hydrology, and pollutant transport.

[3] Class Delivery Method

Most ideas will be delivered by the tutor. Several homework will improve the students understanding.

ⓐ Method of Teaching

Lecture	Discussion	Seminar	Practice	Audiovisual	Material	Field trip	The others
80 %	10 %	10 %	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
50 %	20 %	30 %

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

[5] Main teaching material & Reference books

[Main teaching material]

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

[Reference books]

(1)	Author	I. G Currie	Publisher	Mcgraw-hill	Textbook	Fundamental mechanics of fluid	Issued year	1993
(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	Governing Equations 1
Third week	Governing Equations 2
Fourth week	Governing Equations 3
Fifth week	Governing Equations 4
Sixth week	Governing Equations 5
Seventh week	Mid term
Eighth week	Fluid Motions 1
Ninth week	Fluid Motions 2
Tenth week	Fluid Motions 3
Eleventh week	Pollutant Transport 1
Twelfth week	Pollutant Transport 2
Thirteenth week	Pollutant Transport 3
Fourteenth week	Field Application
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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

CourseTitle	Advanced Infectious Disease	Course Number	1002714001
Major / School Year	Department of Bioengineering and Nano-Bioengineering / 전학년	completion division /Grade evaluation	/
Department/Professor	Division of Bioengineering / 김준섭	Grades/Lecture/ Practice	3 / 3 / 0
Phone Number		A weekday / class / lecture room	[09-226:화(5)(6)(7)]
Office hours			

[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

2024 - 1학기

Date : 2024.02.19
Time : AM 9:14

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	[29-211:수(5)(6)(7)]
Office hours			

[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
%	%	%	%	%	%	%	%

ⓑ Using Tools

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

[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
Second week	Basic principles of light microscopes
Third week	Components of light microscopes
Fourth week	Diffraction limits
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			