

Bridge Engineering

Course Name	Course type (credit/hours)	Elective course(3/3)	Course code	E058
	Target students Division/major/grade	Civil System Engineering/Senior	Opening semester	2020 2ND SEMESTER
	Class time and classroom	Tue C(Pal310)Fri C(Pal310)	English Grade	A(100%English)
Reference to this course	Prerequisite courses			
	Related basic courses			
	Recommended concurrent courses			
	Related advanced courses			

Instructor	Name (title/division)		Jeon, Se Jin(Associate Professor, Civil System Engineering)			
	Office Room Number	산학원 819호	Office phone Number	2406	e-mail	
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Teaching Assistant	Name (title/division)					
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1. Introduction

- Learn the history, aesthetics, type and structure of bridges, and basic design procedure of a PSC girder bridge.
- Learn how the knowledge on structural analysis, concrete, etc. can be used in practice through the design of a PSC girder bridge.

2. Course Objectives

교육목표 : 실무에서 자주 접하게 될 교량설계 및 해석을 위한 기초 지식을 제공하고 예제 교량을 직접 설계해 봄으로써 실무에 대한 감각을 익힌다.

교과목 학습성과 :

- 구조역학, 철근콘크리트, 프리스트레스트콘크리트 등 선수과목에서 배운 지식이 실무에서 활용되는 방식을 습득
- 대표적인 토목 구조물인 교량에 대한 기본 지식 및 설계 방식을 습득
- 교량 구조물의 역사와 미에 대한 지식 함양

3. Class types and activities

- Give a lecture with visual aids and by writing on the board when learning the theory.
- In the design exercise of a bridge, study on the basic theory, design of a bridge and feedback are included.
- Basically, the lecture will be delivered online due to COVID-19.

4. Teaching Method

- | | |
|--|---|
| <input checked="" type="checkbox"/> lecture | <input type="checkbox"/> discussion and debate |
| <input type="checkbox"/> team project(presentation and case studies) | <input type="checkbox"/> experiments(role-playing,etc) |
| <input checked="" type="checkbox"/> designing and production | <input type="checkbox"/> on-site learning(on-site training) |
| <input type="checkbox"/> others | |

5. Support Systems in Use

- | | | |
|--|---|---|
| <input checked="" type="checkbox"/> AjouBb | <input type="checkbox"/> automatic recording system | <input type="checkbox"/> web-based assignment |
| <input type="checkbox"/> cyber lecture | <input type="checkbox"/> online content | |
| <input type="checkbox"/> class behavior analyzing system | <input type="checkbox"/> others | |

6. Teaching Tools

- | | | |
|--|---|---|
| <input type="checkbox"/> PBL(Problem Based Learning) | <input type="checkbox"/> CBL(Case Based Learning) | <input type="checkbox"/> TBL(Team Based Learning) |
| <input type="checkbox"/> UR(Undergraduate Research) | <input type="checkbox"/> FL(Flipped Learning) | <input type="checkbox"/> DSAL(Data Science Active Learning) |
| <input type="checkbox"/> others | | |

7. Knowledge and ability required for taking this course

- 구조역학, 철근콘크리트, 프리스트레스트콘크리트에 대한 기초 지식

8. Method of Evaluation

Evaluation Item	The Number of Times	Evaluation Proportion	Remarks
Attendance		10	
midterm exam		30	
final exam		30	
quiz			
presentation			
discussion			
homework		10	
etc		20	교량 설계 프로젝트
study hours			

9. Textbook and supplementary material

Main/Sub	Title (Web-site)	Writer	Publisher	Publication year
Ref.	Bridge Engineering : Design, Rehabilitation, and Maintenance of Modern Highway Bridges	J. Zhao, D.E. Tonias	McGraw-Hill	2012
Ref.	최신 교량공학	황학주	동명사	2011

10. Class system and Class shedule

<ul style="list-style-type: none"> - 교량의 역사 (History of bridges) - 교량의 조형미 (Aesthetics of bridges) - 교량의 형식 (Type of bridges) - 교량의 구조 (Structure of bridges) - 설계 예 : PSC 거더교 (Design example : PSC girder bridge) - 기말 프로젝트 : PSC 거더교 설계 (Term project : Design of PSC girder bridge)

< Class Schedule >

* language : K-korean, E-English

Weeks	Topics	language	Instructor	Teaching Method	Evaluation Method	Matter to be prepared
1	강의 소개 (Introduction, syllabus)	E	Jeon, Se Jin	시청각 자료		
2	교량의 역사 (History of bridges)	E	Jeon, Se Jin	시청각 자료		
3	교량의 역사 (History of bridges)	E	Jeon, Se Jin	시청각 자료	과제	
4	교량의 조형미 (Aesthetics of bridges)	E	Jeon, Se Jin	시청각 자료		

< Class Schedule >

* language : K-korean, E-English

Weeks	Topics	language	Instructor	Teaching Method	Evaluation Method	Matter to be prepared
5	교량의 조형미 (Aesthetics of bridges)	E	Jeon, Se Jin	시청각 자료		
6	교량의 조형미 (Aesthetics of bridges)	E	Jeon, Se Jin	시청각 자료	과제	
7	교량의 구조 (Structure of bridges)	E	Jeon, Se Jin	시청각 자료		
8	중간고사 (Mid-term examination)	E	Jeon, Se Jin	시험	중간지필평가	
9	교량의 구조 (Structure of bridges)	E	Jeon, Se Jin	시청각 자료		
10	교량의 구조 (Structure of bridges)	E	Jeon, Se Jin	시청각 자료		
11	교량의 구조 (Structure of bridges)	E	Jeon, Se Jin	시청각 자료		
12	교량의 구조 (Structure of bridges)	E	Jeon, Se Jin	시청각 자료	과제	
13	설계 예 : PSC 거더교 (Design example : PSC girder bridge)	E	Jeon, Se Jin	시청각 자료/유인물		
14	설계 예 : PSC 거더교 (Design example : PSC girder bridge)	E	Jeon, Se Jin	시청각 자료/유인물		
15	설계 예 : PSC 거더교 (Design example : PSC girder bridge)	E	Jeon, Se Jin	시청각 자료/유인물		
16	기말고사 (Final examination)	E	Jeon, Se Jin	시험	기말지필평가	

11. Other items of notification