

Engineering Database and Practice

Course Name	Course type (credit/hours)	Required course(3/3)			Course code	B081
	Target students Division/major/grade	Industrial Engineering/Junior			Opening semester	2018 1ST SEMESTER
	Class time and classroom	Tue F(Pal110)Thu E(Pal110)			English Grade	A(100%English)
Reference to this course	Prerequisite courses					
	Related basic courses					
	Recommended concurrent courses					
	Related advanced courses					
Instructor	Name (title/division)		Limei Peng(Assistant Professor, Industrial Engineering)			
	Office Room Number	성호관402호	Office phone Number	2478	e-mail	
	Office hours			Homepage address		
Teaching Assistant	Name (title/division)					
	Office Room Number		Office phone Number		e-mail	

1. Introduction

This course presents the fundamental concepts of database design and use. It provides a study of data models, data description languages, and query facilities including relational algebra and SQL, data normalization, transactions and their properties, physical data organization and indexing, etc. It also looks at the new trends in databases. The knowledge of the above topics will be applied in the design and implementation of a database application using a target database management system as part of a semester-long project.

2. Course Objectives

Students who successfully take this course will be able to

- ?1. Design database schemas for efficient data representation
- ?2. Implement database schemas using MySQL
- ?4. Design database systems for a given issue

3. Class types and activities

This courses will be processed in terms of the following methods:

1. Two-hour Lectures will be given every week to provide students with the fundamental concepts and methods of database
2. 1 ~ 2 assignments
3. 1 ~ 2 quizzes
4. Mid-term & Final exams

4. Teaching Method

- | | |
|---------------------------------------------------------------------------------|-------------------------------------------------------------|
| <input checked="" type="checkbox"/> lecture | <input checked="" type="checkbox"/> discussion and debate |
| <input checked="" 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 checked="" type="checkbox"/> PBL(Problem Based Learning) | <input type="checkbox"/> CBL(Case Based Learning) | <input checked="" 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

Students who would like to take this course should be able to

1. know the fundamentals of computer operating systems
2. follow the instructor to use eclipse to write JAVA programs to solve some basic problems
3. master the basic syntaxes

8. Method of Evaluation

Evaluation Item	The Number of Times	Evaluation Proportion	Remarks
Attendance		5%	
midterm exam		25%	
final exam		30%	
quiz		20%	
presentation			
discussion			
homework		20%	
etc			
study hours			

9. Textbook and supplementary material

Main/Sub	Title (Web-site)	Writer	Publisher	Publication year
Main	Database Processing: Fundamentals, Design, and Implementation (13th edition)	David Kroenke, David J. auer		

10. Class system and Class shedule

<p>Phase 1: Week 1~ Week5 아이디어 도출, 제안서 작성 및 발표/토론</p> <p>Phase 2: Week 6~ Week10 설계, 설계서 작성 및 발표, 팀 토론</p> <p>Phase 3: Week 11~Week16 구현 및 테스트, 최종보고 작성 및 발표, 시연연</p>

< Class Schedule >

* language : K-korean, E-English

Weeks	Topics	language	Instructor	Teaching Method	Evaluation Method	Matter to be prepared
1	Course Introduction	E	Limei Peng			
2	DataBase Processing	E	Limei Peng			
3	Introduction to SQL	E	Limei Peng			
4	SQL Processing	E	Limei Peng			
5	The Relational Model and Normalization	E	Limei Peng			

< Class Schedule >

* language : K-korean, E-English

Week s	Topics	lang uag e	Instructor	Teaching Method	Evaluation Method	Matter to be prepared
6	Data Modeling with the Entity-Relationship Model	E	Limei Peng			
7	Transforming Data Models into Database Designs	E	Limei Peng			
8	Mid-term Exam	E	Limei Peng			
9	Database Redesign	E	Limei Peng			
10	Managing Multiuser Databases	E	Limei Peng			
11	Managing Databases with MySQL	E	Limei Peng			
12	The Web Server Environment	E	Limei Peng			
13	Advanced Concept of Databases	E	Limei Peng			
14	The Latest Database Processing	E	Limei Peng			
15	Presentation	E	Limei Peng			
16	Final exam	E	Limei Peng			

11. Other items of notification