

## Tamkang University Academic Year 107, 2nd Semester Course Syllabus

Course Title	DATABASE SYSTEMS	Instructor	FENG-CHENG CHANG
Course Class	TQICB2A DIVISION OF SOFTWARE ENGINEERING, DEPARTMENT OF INNOVATIVE INFORMATION AND TECHNOLOGY (ENGLISH TAUGHT PROGRAM), 2A	Details	<ul style="list-style-type: none"> <li>◆ Required</li> <li>◆ One Semester</li> <li>◆ 3 Credits</li> </ul>
Departmental Aim of Education			
Cultivate professional talents in developing and applying information system in various fields.			
Departmental core competences			
<ul style="list-style-type: none"> <li>A. Capability of computer program coding, process planning, and problem solving</li> <li>B. Capability of applying basic mathematics and information technology related mathematics</li> <li>C. Capability of applying knowledge of internet structure and protocol in communication system</li> <li>D. Capability of developing information system</li> <li>E. Capability of integrating information system</li> </ul>			
Course Introduction	<p>In this course, we will learn the fundamentals of a database. Two major concepts, the relational model and the design method, will be discussed throughout the course. In addition, we will also learn how to programmatically access a database.</p>		

## The Relevance among Teaching Objectives, Objective Levels and Departmental core competences

I. Objective Levels (select applicable ones) :

- (i) Cognitive Domain : C1-Remembering, C2-Understanding, C3-Applying,  
C4-Analyzing, C5-Evaluating, C6-Creating
- (ii) Psychomotor Domain : P1-Imitation, P2-Mechanism, P3-Independent Operation,  
P4-Linked Operation, P5-Automation, P6-Origination
- (iii) Affective Domain : A1-Receiving, A2-Responding, A3-Valuing,  
A4-Organizing, A5-Characterizing, A6-Implementing

II. The Relevance among Teaching Objectives, Objective Levels and Departmental core competences :

- (i) Determine the objective level(s) in any one of the three learning domains (cognitive, psychomotor, and affective) corresponding to the teaching objective. Each objective should correspond to the objective level(s) of ONLY ONE of the three domains.
- (ii) If more than one objective levels are applicable for each learning domain, select the highest one only. (For example, if the objective levels for Cognitive Domain include C3, C5, and C6, select C6 only and fill it in the boxes below. The same rule applies to Psychomotor Domain and Affective Domain.)
- (iii) Determine the Departmental core competences that correspond to each teaching objective. Each objective may correspond to one or more Departmental core competences at a time. (For example, if one objective corresponds to three Departmental core competences: A, AD, and BEF, list all of the three in the box.)

No.	Teaching Objectives	Relevance	
		Objective Levels	Departmental core competences
1	How to use relational model to describe a collection of data	P3	E
2	How to use SQL to manipulate the data in the database	C3	E
3	How to design the proper relational data model according to the given application	P4	E
4	The role of a data base in a modern information system	C4	E
5	How to connect and operate a database by programming APIs	P3	E

### Teaching Objectives, Teaching Methods and Assessment

No.	Teaching Objectives	Teaching Methods	Assessment
1	How to use relational model to describe a collection of data	Lecture	Written test
2	How to use SQL to manipulate the data in the database	Lecture, Practicum	Written test, Practicum
3	How to design the proper relational data model according to the given application	Lecture	Written test, Report
4	The role of a data base in a modern information system	Lecture, Discussion	Written test, Report
5	How to connect and operate a database by programming APIs	Lecture, Practicum	Written test, Practicum

This course has been designed to cultivate the following essential qualities in TKU students

Essential Qualities of TKU Students	Description
◇ A global perspective	Helping students develop a broader perspective from which to understand international affairs and global development.
◆ Information literacy	Becoming adept at using information technology and learning the proper way to process information.
◇ A vision for the future	Understanding self-growth, social change, and technological development so as to gain the skills necessary to bring about one's future vision.
◇ Moral integrity	Learning how to interact with others, practicing empathy and caring for others, and constructing moral principles with which to solve ethical problems.
◆ Independent thinking	Encouraging students to keenly observe and seek out the source of their problems, and to think logically and critically.
◇ A cheerful attitude and healthy lifestyle	Raising an awareness of the fine balance between one's body and soul and the environment; helping students live a meaningful life.
◇ A spirit of teamwork and dedication	Improving one's ability to communicate and cooperate so as to integrate resources, collaborate with others, and solve problems.
◇ A sense of aesthetic appreciation	Equipping students with the ability to sense and appreciate aesthetic beauty, to express themselves clearly, and to enjoy the creative process.

#### Course Schedule

Week	Date	Subject/Topics	Note
1	108/02/18 ~ 108/02/24	Introduction and preparation of a database environmen	File-based and SQL-based data processing program
2	108/02/25 ~ 108/03/03	Database Fundamentals (1)	File-based and SQL-based data processing program
3	108/03/04 ~ 108/03/10	Database Fundamentals (2)	File-based and SQL-based data processing program
4	108/03/11 ~ 108/03/17	Basic Database Analysis (1)	
5	108/03/18 ~ 108/03/24	Basic Database Analysis (2)	
6	108/03/25 ~ 108/03/31	Advanced Database Analysis (1)	
7	108/04/01 ~ 108/04/07	Advanced Database Analysis (2)	
8	108/04/08 ~ 108/04/14	Relational Database Design (1)	
9	108/04/15 ~ 108/04/21	Relational Database Design (2)	
10	108/04/22 ~ 108/04/28	Midterm Exam Week	

11	108/04/29 ~ 108/05/05	Relational Database Design (3)	
12	108/05/06 ~ 108/05/12	Physical Database Design (1)	
13	108/05/13 ~ 108/05/19	Physical Database Design (2)	
14	108/05/20 ~ 108/05/26	Basic SQL (1)	
15	108/05/27 ~ 108/06/02	Basic SQL (2)	
16	108/06/03 ~ 108/06/09	Advanced SQL (1)	
17	108/06/10 ~ 108/06/16	Advanced SQL (2)	
18	108/06/17 ~ 108/06/23	Final Exam Week	
Requirement	There is no make-up quiz and assignment if you miss the deadline without a reason.		
Teaching Facility	Computer, Projector		
Textbook(s)	Jeffery A. Hoffer et al., Modern Database Management, 12th ed., Pearson Education Limited, 2016.		
Reference(s)			
Number of Assignment(s)	10 (Filled in by assignment instructor only)		
Grading Policy	◆ Attendance :            %    ◆ Mark of Usual : 10.0 %    ◆ Midterm Exam : 25.0 % ◆ Final Exam :    25.0 % ◆ Other ( labs ) : 40.0 %		
Note	This syllabus may be uploaded at the website of Course Syllabus Management System at <a href="http://info.ais.tku.edu.tw/csp">http://info.ais.tku.edu.tw/csp</a> or through the link of Course Syllabus Upload posted on the home page of TKU Office of Academic Affairs at <a href="http://www.acad.tku.edu.tw/CS/main.php">http://www.acad.tku.edu.tw/CS/main.php</a> . <b>※ Unauthorized photocopying is illegal. Using original textbooks is advised. It is a crime to improperly photocopy others' publications.</b>		