

## Tamkang University Academic Year 105, 1st Semester Course Syllabus

Course Title	SPECIAL TOPICS IN DATABASE MANAGEMENT SYSTEMS	Instructor	CHICHANG JOU
Course Class	TLMXM1A MASTER'S PROGRAM, DEPARTMENT OF INFORMATION MANAGEMENT, 1A	Details	<ul style="list-style-type: none"> <li>◆ Selective</li> <li>◆ One Semester</li> <li>◆ 3 Credits</li> </ul>
D e p a r t m e n t a l   A i m   o f   E d u c a t i o n			
<p>Devoting to the integration and research of information technology and business management knowledge, and cultivating, for the society, middle and higher level managers with both information capabilities and modern management skills.</p>			
D e p a r t m e n t a l   c o r e   c o m p e t e n c e s			
<ul style="list-style-type: none"> <li>A. Use of modern management knowledge.</li> <li>B. Logical thinking.</li> <li>C. Critical analysis.</li> <li>D. Integration of information technology and business management.</li> <li>E. Research and innovation.</li> <li>F. Theory and applications of data analysis.</li> <li>G. Information and communication security management.</li> <li>H. Verbal and Writing Communication skills.</li> </ul>			
Course Introduction	<p>The course discusses the fundamental and advanced topics about database management systems, including data model, data storage, data retrieval, query optimization, transaction management, crash recovery, distributed databases, and new applications for NOSQL databases.</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-Charaterizing, 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	Understand NoSQL database and user' s big-data requirements, and translate those requirements into a valid database design.	C4	ABCDEFGH
2	Understand relational database and user' s database requirements, and translate those requirements into a valid database design.	C4	ABCDEFGH

**Teaching Objectives, Teaching Methods and Assessment**

No.	Teaching Objectives	Teaching Methods	Assessment
1	Understand NoSQL database and user' s big-data requirements, and translate those requirements into a valid database design.	Lecture, Discussion, Practicum, Problem solving	Written test, Practicum, Report, Participation
2	Understand relational database and user' s database requirements, and translate those requirements into a valid database design.	Lecture, Discussion, Practicum, Problem solving	Written test, Practicum, Participation

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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	105/09/12~ 105/09/18	Course overview and database fundamentals	
2	105/09/19~ 105/09/25	Database analysis & E-R model	
3	105/09/26~ 105/10/02	Database analysis & E-R model	
4	105/10/03~ 105/10/09	Database analysis & E-R model	
5	105/10/10~ 105/10/16	Holiday	
6	105/10/17~ 105/10/23	Advanced database analysis	
7	105/10/24~ 105/10/30	Advanced database analysis	
8	105/10/31~ 105/11/06	Relational database design	
9	105/11/07~ 105/11/13	Relational database design	
10	105/11/14~ 105/11/20	Midterm Exam	
11	105/11/21~ 105/11/27	Physical database design	
12	105/11/28~ 105/12/04	Structured Query Language	

13	105/12/05 ~ 105/12/11	Structured Query Language	
14	105/12/12 ~ 105/12/18	Structured Query Language	
15	105/12/19 ~ 105/12/25	NoSQL database	
16	105/12/26 ~ 106/01/01	NoSQL database	
17	106/01/02 ~ 106/01/08	New Year Holiday	
18	106/01/09 ~ 106/01/15	Final Exam	
Requirement			
Teaching Facility	Computer, Projector		
Textbook(s)	Modern Database Management (11th Edition) Hoffer et al., 2013 Related papers		
Reference(s)	MongoDB: The Definitive Guide, Kristina Chodorow, O'Reilly, 2013 Database Systems: Design, Implementation, & Management, 12th Ed., Coronel & Morris, Cengage Learning, 2016		
Number of Assignment(s)	5 (Filled in by assignment instructor only)		
Grading Policy	◆ Attendance : 15.0 %    ◆ Mark of Usual :        %    ◆ Midterm Exam : 30.0 % ◆ Final Exam : 30.0 % ◆ Other 〈Project〉 : 25.0 %		
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>		