

## Tamkang University Academic Year 103, 1st Semester Course Syllabus

Course Title	SOFTWARE ENGINEERING	Instructor	FENG-CHENG CHANG
Course Class	TQIAB4A DIVISION OF SOFTWARE ENGINEERING, DEPARTMENT OF INNOVATIVE INFORMATION AND TECHNOLOGY, 4A	Details	◆ Required ◆ One Semester ◆ 3 Credits
Departmental Aim of Education			
Cultivate professional talents in developing and applying information system in various fields.			
Departmental core competences			
<p>A. Capability of computer program coding, process planning, and problem solving</p> <p>B. Capability of applying basic mathematics and information technology related mathematics</p> <p>C. Capability of applying knowledge of internet structure and protocol in communication system</p> <p>D. Capability of developing information system</p> <p>E. Capability of integrating information system</p>			
Course Introduction	Combining the fundamental knowledge of information systems and the experiences of programming, learn how to develop high quality software by engineering approaches.		

## 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	Learn what is software engineering	C2	D
2	Learn the related software engineering methodologies and tools	P4	D
3	Develop software by a certain process, including the analysis/design techniques	P4	D

### Teaching Objectives, Teaching Methods and Assessment

No.	Teaching Objectives	Teaching Methods	Assessment
1	Learn what is software engineering	Lecture, Discussion	Written test, Report, Participation
2	Learn the related software engineering methodologies and tools	Lecture, Discussion, Practicum, Problem solving	Written test, Practicum, Report, Participation
3	Develop software by a certain process, including the analysis/design techniques	Lecture, Discussion, Practicum, Problem solving	Written test, Practicum, Report, Participation

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	103/09/15 ~ 103/09/21	Introduction	
2	103/09/22 ~ 103/09/28	Software Life Cycle	
3	103/09/29 ~ 103/10/05	Software Process	
4	103/10/06 ~ 103/10/12	Software Modeling	
5	103/10/13 ~ 103/10/19	Unified Modeling Language	
6	103/10/20 ~ 103/10/26	Identify Requirements	
7	103/10/27 ~ 103/11/02	Specify Requirements	
8	103/11/03 ~ 103/11/09	Analysis Phase	
9	103/11/10 ~ 103/11/16	Design Phase	
10	103/11/17 ~ 103/11/23	Midterm Exam Week	
11	103/11/24 ~ 103/11/30	Implementation Phase	
12	103/12/01 ~ 103/12/07	Software Testing	

13	103/12/08 ~ 103/12/14	Object-oriented Analysis	
14	103/12/15 ~ 103/12/21	Object-oriented Design	
15	103/12/22 ~ 103/12/28	Introduction to Design Patterns	
16	103/12/29 ~ 104/01/04	Case Study (1)	
17	104/01/05 ~ 104/01/11	Case Study (2)	
18	104/01/12 ~ 104/01/18	Final Exam Week	
Requirement	1. 期中考無故缺席者學期成績扣十分（期末考亦同）。 2. 無正當理由不得補考及補交作業。		
Teaching Facility	Computer, Projector		
Textbook(s)	R. S. Pressman, Software Engineering: A Practitioner's Approach, 7th Ed., International Edition 2010, McGraw-Hill. I. Sommerville, Software Engineering, 9th Ed., International Edition, 2011, Pearson.		
Reference(s)	D. A. Gustafson, Schaum's Outline of Theory and Problems of Software Engineering, McGraw-Hill, 2002. E. Gamma et al., Design Patterns: Elements of Reusable Object-Oriented Software, Addison Wesley Longman, Inc., 1994.		
Number of Assignment(s)	3 (Filled in by assignment instructor only)		
Grading Policy	◆ Attendance :            %    ◆ Mark of Usual : 40.0 %    ◆ Midterm Exam : 30.0 % ◆ Final Exam :    30.0 % ◆ Other (    ) :            %		
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>		