Tamkang University Academic Year 104, 1st Semester Course Syllabus

Course Title	SOFTWARE ENGINEERING	Instructor	FENG-CHENG CHANG
Course Class	TQICB4A DIVISION OF SOFTWARE ENGINEERING, DEPARTMENT OF INNOVATIVE INFORMATION AND TECHNOLOGY (ENGLISH-TAUGHT PROGRAM), 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

A. Capability of computer program coding, process planning, and problem solving

B. Capability of applying basic mathematics and information technology related mathematics

C. Capability of applying knowledge of internet structure and protocol in communication system

D. Capability of developing information system

E. Capability of integrating information system

Course Introduction	Combining the fundamental knowledge of information systems and the experiences of programming, learn how to develop high quality software by engineering approaches. Note that this course comes with extra 18 service-learning hours.

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	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	104/09/14 ~ 104/09/20	Introduction	
2	104/09/21 ~ 104/09/27	Software Life Cycle	
3	104/09/28 ~ 104/10/04	Software Process	
4	104/10/05 ~ 104/10/11	Software Modeling	
5	104/10/12 ~ 104/10/18	Unified Modeling Language	
6	104/10/19 ~ 104/10/25	Identify Requirements	
7	104/10/26 ~ 104/11/01	Specify Requirements	
8	104/11/02 ~ 104/11/08	Analysis Phase	
9	104/11/09 ~ 104/11/15	Design Phase	
10	104/11/16 ~ 104/11/22	Midterm Exam Week	
11	104/11/23 ~ 104/11/29	Implementation Phase	
12	104/11/30 ~ 104/12/06	Software Testing	

13	104/12/07 ~ 104/12/13	Object-oriented Analysis	
14	104/12/14 ~ 104/12/20	Object-oriented Design	
15	104/12/21 ~ 104/12/27	Introduction to Design Patterns	
16	104/12/28 ~ 105/01/03	Case Study (1)	
17	105/01/04 ~ 105/01/10	Case Study (2)	
18	105/01/11 ~ 105/01/17	Final Exam Week	

Requirement	(1) There is no make-up quiz and assignment if you miss the deadline without a reason. (2) If the periods are the campus-wide roll-calling periods, you will be excluded from the course when the "absence hours" reaches 18. (Article 38.2 of TKU Study Regulations) (2.1) Please note that the "exclusion from the course" is not part of the evaluation of your learning outcome. We consider the "participation" or the "contribution" in the evaluation. However, the administrative team enforces that the campus rule overrides the evaluation method. The staff will submit the exclusion list on behave of the teacher when you violate the regulation.
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： 25.0 % ◆ Final Exam： 25.0 % ◆ Other〈service learning〉：10.0 %
Note	This syllabus may be uploaded at the website of Course Syllabus Management System at http://info.ais.tku.edu.tw/csp or through the link of Course Syllabus Upload posted on the home page of TKU Office of Academic Affairs at http://www.acad.tku.edu.tw/CS/main.php . ※ **Unauthorized photocopying is illegal. Using original textbooks is advised. It is a crime to improperly photocopy others' publications.**