

Tamkang University Academic Year 102, 1st Semester Course Syllabus

Course Title	PROGRAM DESIGN	Instructor	FENG-CHENG CHANG
Course Class	TPIAB1A DIVISION OF SOFTWARE ENGINEERING, DEPARTMENT OF INNOVATIVE INFORMATION AND TECHNOLOGY, 1A	Details	<ul style="list-style-type: none"> ◆ Required ◆ One Semester ◆ 3 Credits
D e p a r t m e n t a l t e a c h i n g o b j e c t i v e s			
Cultivate professional talents in software engineering and communication technology.			
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"> 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 data collecting and analyzing, and organizing software and hardware. E. Capability of understanding and integrating system structure for problem solving. F. Capability of system analyzing, modeling, and designing. G. Capability of management utilizing information technology system. 			
Course Introduction	Introduce the concepts of programs and flows, learn how to represent a solution in a procedural style, and finally implement in Python and C.		

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	Concepts of programming and execution flows	C2	A
2	Analyze the execution of a program and illustrate it by a flow chart	P3	AB
3	Implement a program flow by the C language	P4	AD

Teaching Objectives, Teaching Methods and Assessment

No.	Teaching Objectives	Teaching Methods	Assessment
1	Concepts of programming and execution flows	Lecture, Practicum	Written test, Practicum, Participation
2	Analyze the execution of a program and illustrate it by a flow chart	Lecture, Practicum, Problem solving	Written test, Practicum, Participation
3	Implement a program flow by the C language	Lecture, Discussion, Practicum, Problem solving	Written test, Practicum, 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	102/09/16~ 102/09/22	Introduction to Computer Programs	
2	102/09/23~ 102/09/29	Problem Solving by Procedural Approach (1)	
3	102/09/30~ 102/10/06	Problem Solving by Procedural Approach (2)	
4	102/10/07~ 102/10/13	Basic Programming Language Elements	
5	102/10/14~ 102/10/20	Introduction to C (1)	
6	102/10/21~ 102/10/27	Introduction to C (2)	
7	102/10/28~ 102/11/03	Lexical Structure of C (1)	
8	102/11/04~ 102/11/10	Lexical Structure of C (2)	
9	102/11/11~ 102/11/17	Lexical Structure of C (3)	
10	102/11/18~ 102/11/24	Midterm Exam Week	
11	102/11/25~ 102/12/01	Modules	
12	102/12/02~ 102/12/08	Realize Your Algorithm Using C (1)	

13	102/12/09 ~ 102/12/15	Realize Your Algorithm Using C (2)	
14	102/12/16 ~ 102/12/22	More on Pointers and Arrays	
15	102/12/23 ~ 102/12/29	More on formatted input/output	
16	102/12/30 ~ 103/01/05	Files (1)	
17	103/01/06 ~ 103/01/12	Files (2)	
18	103/01/13 ~ 103/01/19	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)	K. N. King, C Programming - A Modern Approach, 2nd Ed., W. W. Norton & Company, Inc., 2008.		
Reference(s)	W. Savitch, Problem Solving with C++, 7th Ed., Pearson International Edition, Addison Wesley, 2009.		
Number of Assignment(s)	6 (Filled in by assignment instructor only)		
Grading Policy	◆ Attendance : % ◆ Mark of Usual : 15.0 % ◆ Midterm Exam : 30.0 % ◆ Final Exam : 30.0 % ◆ Other 〈上機測驗〉 : 25.0 %		
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.		