

Tamkang University Academic Year 109, 2nd Semester Course Syllabus

Course Title	ADVANCED COMPUTER PROGRAMMING	Instructor	LIN IN-HO
Course Class	TQICB1A DIVISION OF SOFTWARE ENGINEERING, DEPARTMENT OF INNOVATIVE INFORMATION AND TECHNOLOGY (ENGLISH-TAUGHT PROGRAM), 1A	Details	<ul style="list-style-type: none"> ◆ General Course ◆ Selective ◆ One Semester
Relevance to SDGs	SDG9 Industry, Innovation, and Infrastructure		
Departmental Aim of Education			
Cultivate professional talents in developing and applying information system in various fields.			
Subject Departmental core competences			
<p>A. Capability of computer program coding, process planning, and problem solving(ratio:50.00)</p> <p>D. Capability of developing information system(ratio:30.00)</p> <p>E. Capability of integrating information system(ratio:20.00)</p>			
Subject Schoolwide essential virtues			
<p>2. Information literacy. (ratio:80.00)</p> <p>5. Independent thinking. (ratio:20.00)</p>			
Course Introduction	<p>This course presents an advanced view of computer programming, mainly using C++ and Python. The use of current operating systems, Linux development platform will also be presented. Object Oriented Programming is quite different than functional or procedural programming, and it is difficult to learn on your own. Hands-on programming will be a key part of the course.</p> <p>Outcomes: Students who successfully complete this course will be able to:</p> <ul style="list-style-type: none"> *Apply and develop object oriented code. *Develop software for a variety of architectures *Demonstrate basic knowledge of software engineering concepts 		

The correspondences between the course's instructional objectives and the cognitive, affective, and psychomotor objectives.

Differentiate the various objective methods among the cognitive, affective and psychomotor domains of the course's instructional objectives.

I. Cognitive : Emphasis upon the study of various kinds of knowledge in the cognition of the course's veracity, conception, procedures, outcomes, etc.

II.Affective : Emphasis upon the study of various kinds of knowledge in the course's appeal, morals, attitude, conviction, values, etc.

III.Psychomotor: Emphasis upon the study of the course's physical activity and technical manipulation.

No.	Teaching Objectives	objective methods
1	To learn the basic concept of software development platform for problem solving using computer languages	Cognitive
2	Familiar with the processes of the computer program design and applications for solving the computer problems	Affective
3	using Computer language and Software Engineering to solve Computer Problems	Psychomotor

The correspondences of teaching objectives : core competences, essential virtues, teaching methods, and assessment

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	A	2	Lecture, Experience	Testing, Study Assignments, Practicum
2	DE	25	Lecture, Practicum, Experience	Testing, Study Assignments, Discussion(including classroom and online), Practicum
3	DE	25	Lecture, Discussion, Practicum, Experience	Testing, Study Assignments, Discussion(including classroom and online), Practicum

Course Schedule

Week	Date	Course Contents	Note
1	110/02/22 ~ 110/02/28	Course overview, about the advanced computer programming and development Platform	
2	110/03/01 ~ 110/03/07	Overview of Computer Programming (1) :Control flow	Lab.1
3	110/03/08 ~ 110/03/14	Overview of Computer Programming (2): 1 · using for, while and do while loop	Repetition HW.#1, Lab.2
4	110/03/15 ~ 110/03/21	The function basic (Pass-by-value)	Quiz 1, Lab.3

5	110/03/22 ~ 110/03/28	Arrays and Pointers, Structure design, Object-Oriented Program Design: Class design (1)	HW.#2, Lab.4
6	110/03/29 ~ 110/04/04	Object-Oriented Program Design : Class design (2)	Lab.5
7	110/04/05 ~ 110/04/11	Object-Oriented Program Design : Class design (3)	Quiz 2, HW.#3, Lab.6
8	110/04/12 ~ 110/04/18	Application of OOP design and Project development (1)	
9	110/04/19 ~ 110/04/25	Application of OOP design and Project development (2)	
10	110/04/26 ~ 110/05/02	Midterm Exam Week	
11	110/05/03 ~ 110/05/09	Application of OOP design and Project development (3)	Lab.8
12	110/05/10 ~ 110/05/16	Application of OOP design and Project development with GUI environment (1)	Quiz 3
13	110/05/17 ~ 110/05/23	Application of OOP design and Project development with GUI environment (2)	HW.#5, Lab.9
14	110/05/24 ~ 110/05/30	Introduction to Python Collections and Applications(1)	Lab.10
15	110/05/31 ~ 110/06/06	Introduction to Python Collections and Applications(2)	HW.#6, Quiz 4
16	110/06/07 ~ 110/06/13	Introduction to Python Collections and Applications(3)	
17	110/06/14 ~ 110/06/20	Introduction to Python Programming and environment(4)	
18	110/06/21 ~ 110/06/27	Final Exam Week	
Requirement	Registration on iclass website: http://iclass.tku.edu.tw		
Teaching Facility	Computer, Projector, Other (Computers)		
Textbooks and Teaching Materials	1. Python Programming in Context (3 rd. Ed.) by Bradley N. Miller 1. Absolute C++ (6th Ed.) by Walter Savitch 3. Problem Solving with C++ (Eighth Ed.) by Walter Savitch		
References	1、 Absolute C++ by Walter Savitch (Forth Edition) 開發圖書有限公司 2、 Problem Solving With C++ by Walter Savitch (Seventh Edition) 開發圖書 3、 C++ How to Program (Deitel) 全華圖書 4、 http://www.cppreference.com/wiki/ 5、 http://www.cplusplus.com/reference/		

Number of Assignment(s)	6 (Filled in by assignment instructor only)
Grading Policy	<ul style="list-style-type: none"> ◆ Attendance : 10.0 % ◆ Mark of Usual : 20.0 % ◆ Midterm Exam : 20.0 % ◆ Final Exam : 20.0 % ◆ Other (Lab., Proj & Homework) : 30.0 %
Note	<p>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.</p> <p>※ Unauthorized photocopying is illegal. Using original textbooks is advised. It is a crime to improperly photocopy others' publications.</p>