Tamkang University Academic Year 113, 2nd Semester Course Syllabus

Course Title	OBJECT ORIENTED PROGRAMMING	Instructor	CHEN, CHIA-JEN
Course Class	TEIDB1B DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION ENGINEERING (ENGLISH-TAUGHT PROGRAM), 1B	Details	◆ General Course ◆ Required ◆ One Semester ◆ 3 Credits
Relevance to SDGs	SDG4 Quality education SDG17 Partnerships for the goals		

Departmental Aim of Education

Ⅰ. Comprehend professional knowledge.

Ⅱ. Acquire mastery of Practical Skills.

Ⅲ. Establish creative achievement.

Subject Departmental core competences

A. Programming and application ability.(ratio:40.00)

B. Mathematical reasoning ability.(ratio:15.00)

C. Implementing computer systems ability.(ratio:15.00)

D. Computer networking application skills.(ratio:15.00)

E. Professional skills for information technology (IT) industry.(ratio:15.00)

Subject Schoolwide essential virtues

1. A global perspective. (ratio:5.00)

2. Information literacy. (ratio:30.00)

3. A vision for the future. (ratio:10.00)

4. Moral integrity. (ratio:10.00)

5. Independent thinking. (ratio:30.00)

6. A cheerful attitude and healthy lifestyle. (ratio:5.00)

7. A spirit of teamwork and dedication. (ratio:5.00)

8. A sense of aesthetic appreciation. (ratio:5.00)

Course Introduction	Welcome to Object-Oriented Programming (OOP) with C++! OOP organizes code around objects that encapsulate data and behavior, making programs more modular and easier. Key concepts include: Abstraction, which focuses on essential features while hiding details, achieved through abstract classes and interfaces; Inheritance, enabling new classes to reuse and extend existing ones; Polymorphism, allowing methods to behave differently based on context; and Encapsulation, to hide the complexity of the inner workings of an object. Let’ s explore these in depth!

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	Students are able to get familiar with C++ programming language.	Cognitive

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

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	ABCDE	12345678	Lecture	Testing

Course Schedule

Week	Date	Course Contents	Note
1	114/02/17 ~ 114/02/23	1.Introduction of instructor and students. 2.Syllabus debriefing. 3.Debrief scoring. 4.Module 1: Namingspace Comment Variables	
2	114/02/24 ~ 114/03/02	Module 1: Constant Output Input Generate randome numbers	
3	114/03/03 ~ 114/03/09	Decision Making: if...then...else... Switch Ternary operator	
4	114/03/10 ~ 114/03/16	Loops: for while do...while Nested loop	

5	114/03/17 ~ 114/03/23	Static Array	
6	114/03/24 ~ 114/03/30	Dynamic Array	
7	114/03/31 ~ 114/04/06	Spring break	
8	114/04/07 ~ 114/04/13	Pointer	
9	114/04/14 ~ 114/04/20	Midterm Exam/Midterm Assessment Week (teachers can adjust the week as needed)	
10	114/04/21 ~ 114/04/27	Pointer	
11	114/04/28 ~ 114/05/04	Function: Pass by value Pass by reference Pass by pointer	
12	114/05/05 ~ 114/05/11	Object Oriented Programming: What's an object? What's a class? Abstraction	
13	114/05/12 ~ 114/05/18	Encapsulation	
14	114/05/19 ~ 114/05/25	Inheritance	
15	114/05/26 ~ 114/06/01	Polymorphism	
16	114/06/02 ~ 114/06/08	Constructor	
17	114/06/09 ~ 114/06/15	Final Exam/Final Assessment Week (teachers can adjust the week as needed)	
18	114/06/16 ~ 114/06/22	Flexible Teaching Week: Generally, no in-person classes; teachers may arrange teaching activities or final assessments, among other options.	

Key capabilities	Information Technology Problem solving
Interdisciplinary	STEAM course (S:Science, T:Technology, E:Engineering, M:Math, A field:Integration of Art and Humanist)
Distinctive teaching	Learning technologies (such as AR/VR,etc.) incorporated to physical courses
Course Content	Computer programming or Computer language (students have hands-on experience in related projects)

Requirement	
Textbooks and Teaching Materials	Self-made teaching materials:Presentations Using teaching materials from other writers:Videos
References	
Grading Policy	◆ Attendance： 10.0 % ◆ Mark of Usual：10.0 % ◆ Midterm Exam： 20.0 % ◆ Final Exam： 20.0 % ◆ Other〈Homework and project〉：40.0 %
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.**