Tamkang University Academic Year 113, 2nd Semester Course Syllabus

Course Title	OBJECT ORIENTED PROGRAMMING	Instructor	HUANG-WEN HUANG
Course Class	TEIDB1A DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION ENGINEERING (ENGLISH-TAUGHT PROGRAM), 1A	Details	◆ General Course ◆ Required ◆ One Semester ◆ 3 Credits
Relevance to SDGs	SDG4 Quality education SDG9 Industry, Innovation, and Infrastructure		

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 Java! OOP organizes code around objects that encapsulate data and behavior, making programs modular and easier to manage. 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 Interfaces, defining consistent contracts for class behavior. 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 Java programming language.	Cognitive
2	Students are able to understand Java operators, basics and statements. Particularly it is based on object-oriented methodology.	Cognitive
3	Students are able to understand Java control statements in programs.	Cognitive
4	Students are able to understand Java graphics and user interface design.	Cognitive
5	Students are able to practically write Java programs in classes.	Cognitive
6	Enhancing students' ability to write read and speak technical English especially in Java programming language.	Psychomotor

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, Discussion	Testing, Study Assignments, Discussion(including classroom and online), Practicum, Report(including oral and written)

2	A	2	Lecture, Discussion, Practicum	Testing, Study Assignments, Discussion(including classroom and online), Practicum
3	A	25	Lecture, Discussion, Practicum	Testing, Study Assignments, Discussion(including classroom and online), Report(including oral and written)
4	A	25	Lecture, Discussion, Practicum	Testing, Discussion(including classroom and online), Report(including oral and written)
5	A	123	Lecture	Testing
6	A	27	Lecture	Testing, Study Assignments, Discussion(including classroom and online), Report(including oral and written)

Course Schedule

Week	Date	Course Contents	Note
1	114/02/17 ~ 114/02/23	Introduction to programming and the Java language (1);	
2	114/02/24 ~ 114/03/02	Programming building blocks – Java Basics (2);	Shown in the Parentheses are corresponding sections in the textbook.
3	114/03/03 ~ 114/03/09	Object-Oriented programming, part 1: using classes (3);	
4	114/03/10 ~ 114/03/16	The string class (3.7);Math class (3.13);JoptionPane Dialog boxes (3.16);	
5	114/03/17 ~ 114/03/23	Introduction Applets and Graphics (4)	
6	114/03/24 ~ 114/03/30	Flow of control: selection (5)	
7	114/03/31 ~ 114/04/06	Flow of control: looping (6)	
8	114/04/07 ~ 114/04/13	Object-oriented programming: user-defined classes (7)	
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	Polymorphim	
11	114/04/28 ~ 114/05/04	Single-Dimensional arrays (8)	

12	114/05/05～ 114/05/11	Multidimensional arrays (9)	
13	114/05/12～ 114/05/18	Object-oriented programming: inheritance, polymorphism and interfaces (10)	
14	114/05/19～ 114/05/25	Exceptions and input/output operations (11)	
15	114/05/26～ 114/06/01	Graphical user interfaces (12)	
16	114/06/02～ 114/06/08	Graphical user interface making up (12.1)	
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	Grading policy may vary according to circumstances when school starts.
Textbooks and Teaching Materials	Using teaching materials from other writers:Textbooks Name of teaching materials: Java Illuminated: An Active Learning Approach by Anderson, SBN：9781284140996
References	1. Walter Savitch,” Absolute Java” 3rd, Pearson International Edition 2008. 2. Gary J. Bronson “Object-Oriented program development using Java”,2006, Thomson course technology, enhanced edition.
Grading Policy	◆ Attendance： 10.0 % ◆ Mark of Usual：10.0 % ◆ Midterm Exam： 25.0 % ◆ Final Exam： 25.0 % ◆ Other〈Homework and project〉：30.0 %

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.**