Tamkang University Academic Year 114, 1st Semester Course Syllabus

Course Title	PROGRAMMING AND DATA STRUCTURES	Instructor	REN-XIANG LIN
Course Class	TLMXB2B DEPARTMENT OF INFORMATION MANAGEMENT, 2B	Details	◆ General Course ◆ Required ◆ 1st Semester ◆ 3 Credits
Relevance to SDGs	SDG4 Quality education		

Departmental Aim of Education

Ⅰ. Refining information management skills.

Ⅱ. Enhancing information technology capabilities.

Ⅲ. Thinking independently with logic analysis.

Ⅳ. Reinforcing team-working spirit.

Ⅴ. Valuing business and information ethics.

Ⅵ. Cultivating global view.

Subject Departmental core competences

A. Problem analysis and critical thinking.(ratio:5.00)

B. Functional business Areas and business practices.(ratio:5.00)

C. Applications of information systems.(ratio:5.00)

D. Computer programming.(ratio:65.00)

E. Network system planning.(ratio:5.00)

F. Database design and management.(ratio:5.00)

G. Analysis, design and integration of information system.(ratio:5.00)

H. Project management.(ratio:5.00)

Subject Schoolwide essential virtues

1. A global perspective. (ratio:5.00)

2. Information literacy. (ratio:30.00)

3. A vision for the future. (ratio:5.00)

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:10.00)

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

Course Introduction	This course will introduce data structures using JAVA. The topic include algorithm analysis, array, stack and queue, linked list, recursive, tree structure and binary search tree.

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 could understand the basic concepts of data structure.	Cognitive

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

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	ABCDEFGH	12345678	Lecture, Practicum	Testing, Study Assignments, Practicum

Course Schedule

Week	Date	Course Contents	Note
1	114/09/15 ~ 114/09/21	Course introduction	
2	114/09/22 ~ 114/09/28	Object-oriented programming Ⅰ	
3	114/09/29 ~ 114/10/05	Object-oriented programming Ⅱ	

4	114/10/06～ 114/10/12	Holiday	
5	114/10/13～ 114/10/19	Inheritance I	
6	114/10/20～ 114/10/26	Holiday	
7	114/10/27～ 114/11/02	Inheritance II	
8	114/11/03～ 114/11/09	Polymorphism	
9	114/11/10～ 114/11/16	Abstract class and interface	
10	114/11/17～ 114/11/23	Midterm exam	
11	114/11/24～ 114/11/30	Algorithm analysis	
12	114/12/01～ 114/12/07	Array	
13	114/12/08～ 114/12/14	Stack and queue I	
14	114/12/15～ 114/12/21	Stack and queue II	
15	114/12/22～ 114/12/28	Linked list	
16	114/12/29～ 115/01/04	Final exam	
17	115/01/05～ 115/01/11	Final Week of Diverse Assessments/Flexible Teaching Week for Teachers	
18	115/01/12～ 115/01/18	Flexible Teaching Week for Teachers	

Key capabilities	
Interdisciplinary	
Distinctive teaching	
Course Content	Computer programming or Computer language (students have hands-on experience in related projects)

Requirement	
Textbooks and Teaching Materials	Using teaching materials from other writers:Textbooks, Presentations
References	
Grading Policy	◆ Attendance： 20.0 % ◆ Mark of Usual：20.0 % ◆ Midterm Exam： 30.0 % ◆ Final Exam： 30.0 % ◆ Other〈 〉： %
Note	This syllabus may be uploaded at the website of Course Syllabus Management System at https://web2.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. ※"Adhere to the concept of intellectual property rights" and "Do not illegally photocopy, download, or distribute." Using original textbooks is advised. It is a crime to improperly photocopy others' publications.