Tamkang University Academic Year 113, 1st Semester Course Syllabus

Course Title	DISCRETE MATHEMATICS	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:15.00)

B. Mathematical reasoning ability.(ratio:40.00)

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:20.00)

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

4. Moral integrity. (ratio:20.00)

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)

No.	Course Introduction	
	This course will teach the students to be familiar with discrete mathematics which is an important fundamental knowledgement in computer science and software engineering. It will further teach the students to understand the major topics and functions in discrete mathematics.	

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 introduce the concepts of logic, definitions of logic and its relationship with computer logic.	Cognitive
2	To teach students technical terms used and concepts in discrete mathematics; as well as the differences between continuous and discrete mathematical models.	Cognitive
3	To introduce concepts of set and quantity; furthermore, understand function, sequence, sum, numbers, growth of function and matrices.	Cognitive
4	To introduce concepts of induction, graphs and relation as well as their definitions and applications.	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, Experience	Testing, Study Assignments
2	B	125	Lecture, Discussion, Experience	Testing, Study Assignments
3	B	125	Lecture, Discussion, Experience	Testing, Study Assignments
4	B	125	Lecture, Discussion, Experience	Testing, Study Assignments, Practicum

Course Schedule			
Week	Date	Course Contents	Note
1	113/09/09 ~ 113/09/15	Introduction Logic	
2	113/09/16 ~ 113/09/22	Formal Logic	
3	113/09/23 ~ 113/09/29	Propositional Logic	
4	113/09/30 ~ 113/10/06	Predicate Logic	
5	113/10/07 ~ 113/10/13	Logic in Mathematics	
6	113/10/14 ~ 113/10/20	Sets	
7	113/10/21 ~ 113/10/27	Growth of Functions	
8	113/10/28 ~ 113/11/03	Numbers theory	
9	113/11/04 ~ 113/11/10	Midterm Exam Week	
10	113/11/11 ~ 113/11/17	Discussion	
11	113/11/18 ~ 113/11/24	Functions,	
12	113/11/25 ~ 113/12/01	Matrix	
13	113/12/02 ~ 113/12/08	Recursion 2	
14	113/12/09 ~ 113/12/15	Sequences and Sums	
15	113/12/16 ~ 113/12/22	Relations 2	
16	113/12/23 ~ 113/12/29	Graphs 1	
17	113/12/30 ~ 114/01/05	Final Exam Week	
18	114/01/06 ~ 114/01/12	Flex week, learning activities should be arranged.	
Key capabilities			
Interdisciplinary			

Distinctive teaching	
Course Content	Logical Thinking
Requirement	If a student's class absence reaches one-third of the total class hours (in a semester) for a particular course, the course instructor will notify the Office of Academic Affairs, and the student will not be allowed to take part in the remaining course examinations and will receive a semester grade (for that course) of zero. 依本校學則第三十八條第二款規定辦理扣考 There will be four quiz and six assignments.
Textbooks and Teaching Materials	Using teaching materials from other writers:Textbooks Name of teaching materials: "Discrete Mathematics and Its Applications", 8th edition, by Kenneth Rosen, ISBN10: 125967651X | ISBN13: 9781259676512
References	
Grading Policy	◆ Attendance： 5.0 %　◆ Mark of Usual：20.0 %　◆ Midterm Exam： 25.0 % ◆ Final Exam： 25.0 % ◆ Other〈小考2次、作業8次〉：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.**