Tamkang University Academic Year 112, 2nd Semester Course Syllabus

Course Title	RESEARCH METHODOLOGY	Instructor	HSIA-HSIANG CHEN
Course Class	TEIBM1A MASTER'S PROGRAM, DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION ENGINEERING (ENGLISH-TAUGHT PROGRAM), 1A	Details	◆ General Course ◆ Required ◆ 2nd Semester
Relevance to SDGs	SDG4 Quality education SDG8 Decent work and economic growth SDG9 Industry, Innovation, and Infrastructure		

Departmental Aim of Education

Ⅰ. Cultivate the ability to conduct independent research and problem solving.

Ⅱ. Strengthen creativity and research capacity.

Ⅲ. Build profound professional knowledge in computer science and information engineering.

Ⅳ. Engage in self-directed lifelong learning.

Subject Departmental core competences

A. Independent problem solving ability.(ratio:20.00)

B. Independent innovative thinking ability.(ratio:20.00)

C. Research paper writing and presentation ability.(ratio:10.00)

D. Research & development (R&D) ability in information engineering.(ratio:20.00)

E. Project execution and control ability.(ratio:10.00)

F. Lifelong self-directed learning ability.(ratio:20.00)

Subject Schoolwide essential virtues

1. A global perspective. (ratio:20.00)

2. Information literacy. (ratio:20.00)

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

4. Moral integrity. (ratio:10.00)

5. Independent thinking. (ratio:10.00)

6. A cheerful attitude and healthy lifestyle. (ratio:10.00)

7. A spirit of teamwork and dedication. (ratio:10.00)

8. A sense of aesthetic appreciation. (ratio:10.00)

Course Introduction	In the course, we will introduce and explore the research method in the computer science field. The course covers the procedure of research, which is for problem definition, theoretical formulation, methodology, experimental design, statistical analysis, and measurement index. Moreover, there will be relevant aspects of reading, writing, evaluating literature, and researching publications in the lectures.

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	The course aims to teach students to understand how to survey topics, build research models, carry out experiment problems, and present results during the semester.	Cognitive

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

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	ABCDEF	12345678	Lecture, Discussion	Study Assignments, Discussion(including classroom and online), Report(including oral and written)

Course Schedule

Week	Date	Course Contents	Note
1	113/02/19 ~ 113/02/25	Course introduction	
2	113/02/26 ~ 113/03/03	Digital library for research	
3	113/03/04 ~ 113/03/10	Digital library for research	
4	113/03/11 ~ 113/03/17	Formulation, theory and model	

5	113/03/18 ~ 113/03/24	Formulation, theory and model	
6	113/03/25 ~ 113/03/31	Student presentation I	
7	113/04/01 ~ 113/04/07	Student presentation I	
8	113/04/08 ~ 113/04/14	Experiment design and performance evaluation	
9	113/04/15 ~ 113/04/21	Experiment design and performance evaluation	
10	113/04/22 ~ 113/04/28	Midterm exam	
11	113/04/29 ~ 113/05/05	Student presentation II	
12	113/05/06 ~ 113/05/12	Student presentation II	
13	113/05/13 ~ 113/05/19	Qualitative research and quantitative research	
14	113/05/20 ~ 113/05/26	Qualitative research and quantitative research	
15	113/05/27 ~ 113/06/02	Student presentation III	
16	113/06/03 ~ 113/06/09	Student presentation III	
17	113/06/10 ~ 113/06/16	Final exam	
18	113/06/17 ~ 113/06/23	Complementary materials	

Key capabilities	self-directed learning Information Technology Problem solving Interdisciplinary
Interdisciplinary	STEAM course (S:Science, T:Technology, E:Engineering, M:Math, A field:Integration of Art and Humanist)
Distinctive teaching	Methodology course
Course Content	Computer programming or Computer language (students have hands-on experience in related projects) Logical Thinking AI application
Requirement	Students should prepare their laptops or mobiles in the classroom.

Textbooks and Teaching Materials	Self-made teaching materials:Presentations, Handouts Using teaching materials from other writers:Textbooks, Presentations, paper or report
Grading Policy	◆ Attendance： 10.0 % ◆ Mark of Usual：40.0 % ◆ Midterm Exam： % ◆ Final Exam： % ◆ Other〈presentation/report〉：50.0 %
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.**