Tamkang University Academic Year 114, 2nd Semester Course Syllabus

Course Title	SEMINAR (I)	Instructor	CHIH-CHUN TSAI
Course Class	TSXAD1A DOCTORAL PROGRAM IN APPLIED SCIENCES, 1A	Details	◆ General Course ◆ Selective ◆ 2nd Semester ◆ 2 Credits
Relevance to SDGs	SDG3 Good health and well-being for people SDG4 Quality education		

Departmental Aim of Education

To cultivate high-level spiritual talents demanded by industry and academia as well as with solid knowledge in material science and ability to do transnational and interdisciplinary research independently.

Subject Departmental core competences

A. To have solid knowledge and ability to carry out relevant research in material science. (ratio:40.00)

B. To acquire capabilities in comprehensive vision and conducting transnational interdisciplinary research.(ratio:20.00)

C. To obtain ability in innovation, independent thinking and independent research. (ratio:15.00)

D. To have good oral and written skills as well as a good sense in teamwork.(ratio:15.00)

E. To have a comprehensive understanding in professional morality and ethics.(ratio:10.00)

Subject Schoolwide essential virtues

1. A global perspective. (ratio:20.00)
2. Information literacy. (ratio:20.00)
3. A vision for the future. (ratio:20.00)
4. Moral integrity. (ratio:10.00)
5. Independent thinking. (ratio:10.00)
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 cultivates doctoral students' core research capabilities. Experts will share practical experience on addressing academic challenges, and specialized sessions will enhance essential programming skills for research. The integrated training aims to equip students with comprehensive problem-solving competencies.

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 equip students with the ability to critically analyze and adopt the merits of exemplary research, develop robust problem-solving methodologies, and master the professional skills essential for effective academic reporting.	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	Study Assignments, Report(including oral and written)

Course Schedule

Week	Date	Course Contents	Note
1	115/02/23 ~ 115/03/01	Course Introduction	
2	115/03/02 ~ 115/03/08	Computational Research	
3	115/03/09 ~ 115/03/15	Computational Research	
4	115/03/16 ~ 115/03/22	Computational Research	

5	115/03/23 ~ 115/03/29	Scholarly Communication	
6	115/03/30 ~ 115/04/05	Teaching and administrative observation day (holiday)	
7	115/04/06 ~ 115/04/12	Scholarly Communication	
8	115/04/13 ~ 115/04/19	Scholarly Communication	
9	115/04/20 ~ 115/04/26	Introduction to Visualization Tools	
10	115/04/27 ~ 115/05/03	Programming Workshop I: Data Wrangling for Research	
11	115/05/04 ~ 115/05/10	Programming Workshop I: Data Wrangling for Research	
12	115/05/11 ~ 115/05/17	Programming Workshop I: Data Wrangling for Research	
13	115/05/18 ~ 115/05/24	Programming Workshop II: Data Analysis & Visualization	
14	115/05/25 ~ 115/05/31	Programming Workshop II: Data Analysis & Visualization	
15	115/06/01 ~ 115/06/07	Programming Workshop II: Data Analysis & Visualization	
16	115/06/08 ~ 115/06/14	Programming Workshop II: Data Analysis & Visualization	
17	115/06/15 ~ 115/06/21	End-of-term multi-dimensional assessment week / Teacher flexible teaching week	
18	115/06/22 ~ 115/06/28	End-of-term multi-dimensional assessment week / Teacher flexible teaching week	

Key capabilities	self-directed learning Problem solving
Interdisciplinary	STEAM course (S:Science, T:Technology, E:Engineering, M:Math, A field:Integration of Art and Humanist)
Distinctive teaching	
Course Content	Logical Thinking Sustainability issue

Requirement	
Textbooks and Teaching Materials	Self-made teaching materials:Handouts
References	
Grading Policy	◆ Attendance： 40.0 % ◆ Mark of Usual： % ◆ Midterm Exam： % ◆ Final Exam： % ◆ Other〈Class Participation〉：60.0 %
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.