

## Tamkang University Academic Year 107, 2nd Semester Course Syllabus

Course Title	SEMINAR (IV)	Instructor	CHAO CHOUNG-LII
Course Class	TEBXD2A DOCTORAL PROGRAM, DEPARTMENT OF MECHANICAL AND ELECTRO-MECHANICAL ENGINEERING, 2A	Details	<ul style="list-style-type: none"> <li>◆ Required</li> <li>◆ One Semester</li> <li>◆ 1 Credits</li> </ul>
<p>Departmental Aim of Education</p>			
<p>I. To prepare students who have a comprehensive understanding of the principles of applied sciences and engineering to be innovators in the field of mechanical and electromechanical engineering.</p> <p>II. To train emerging professionals who possess a high level of expertise and ethical standards who will become independent research and development leaders in the industry.</p> <p>III. To motivate students who will pursue continuing education as a means to stay on the cutting edge of global competitiveness and meet changes in their careers and the workplace with confidence and ease.</p>			
<p>Departmental core competences</p>			
<p>A. Head: Knowledge of mechanical and electromechanical engineering.</p> <p>B. Hand: Hands-on skills and practical realization.</p> <p>C. Heart: Love of learning and innovation.</p> <p>D. Eye: Vision of progress and improvements.</p>			
Course Introduction	<p>This course aims to help students learn how to think up an idea for research, collect/organize the related information, decide on a research method, execute the problem solving process, analyze data and write up/publish results by studying, analyzing and discussing the related research papers, books and patents.</p>		

## The Relevance among Teaching Objectives, Objective Levels and Departmental core competences

I. Objective Levels (select applicable ones) :

- (i) Cognitive Domain : C1-Remembering, C2-Understanding, C3-Applying,  
C4-Analyzing, C5-Evaluating, C6-Creating
- (ii) Psychomotor Domain : P1-Imitation, P2-Mechanism, P3-Independent Operation,  
P4-Linked Operation, P5-Automation, P6-Origination
- (iii) Affective Domain : A1-Receiving, A2-Responding, A3-Valuing,  
A4-Organizing, A5-Characterizing, A6-Implementing

II. The Relevance among Teaching Objectives, Objective Levels and Departmental core competences :

- (i) Determine the objective level(s) in any one of the three learning domains (cognitive, psychomotor, and affective) corresponding to the teaching objective. Each objective should correspond to the objective level(s) of ONLY ONE of the three domains.
- (ii) If more than one objective levels are applicable for each learning domain, select the highest one only. (For example, if the objective levels for Cognitive Domain include C3, C5, and C6, select C6 only and fill it in the boxes below. The same rule applies to Psychomotor Domain and Affective Domain.)
- (iii) Determine the Departmental core competences that correspond to each teaching objective. Each objective may correspond to one or more Departmental core competences at a time. (For example, if one objective corresponds to three Departmental core competences: A, AD, and BEF, list all of the three in the box.)

No.	Teaching Objectives	Relevance	
		Objective Levels	Departmental core competences
1	Think up an idea to research, write a research proposal and collect/organize the related information.	C4	AC
2	To decide on a research method, execute the problem solving process	C4	AB
3	To analyze data and write up/publish results	C4	AB
4	To explore and learn the motivation of scientific and engineering research	C2	AD

### Teaching Objectives, Teaching Methods and Assessment

No.	Teaching Objectives	Teaching Methods	Assessment
1	Think up an idea to research, write a research proposal and collect/organize the related information.	Lecture, Discussion, Problem solving	Report, Participation
2	To decide on a research method, execute the problem solving process	Lecture, Discussion, Problem solving	Report, Participation
3	To analyze data and write up/publish results	Discussion, Problem solving	Report, Participation
4	To explore and learn the motivation of scientific and engineering research	Discussion	Report, Participation

This course has been designed to cultivate the following essential qualities in TKU students

Essential Qualities of TKU Students	Description
◆ A global perspective	Helping students develop a broader perspective from which to understand international affairs and global development.
◆ Information literacy	Becoming adept at using information technology and learning the proper way to process information.
◇ A vision for the future	Understanding self-growth, social change, and technological development so as to gain the skills necessary to bring about one's future vision.
◇ Moral integrity	Learning how to interact with others, practicing empathy and caring for others, and constructing moral principles with which to solve ethical problems.
◆ Independent thinking	Encouraging students to keenly observe and seek out the source of their problems, and to think logically and critically.
◇ A cheerful attitude and healthy lifestyle	Raising an awareness of the fine balance between one's body and soul and the environment; helping students live a meaningful life.
◇ A spirit of teamwork and dedication	Improving one's ability to communicate and cooperate so as to integrate resources, collaborate with others, and solve problems.
◇ A sense of aesthetic appreciation	Equipping students with the ability to sense and appreciate aesthetic beauty, to express themselves clearly, and to enjoy the creative process.

#### Course Schedule

Week	Date	Subject/Topics	Note
1	108/02/18 ~ 108/02/24	Introduction	
2	108/02/25 ~ 108/03/03	Papers reading, analyzing and discussion	
3	108/03/04 ~ 108/03/10	Papers reading, analyzing and discussion	
4	108/03/11 ~ 108/03/17	Papers reading, analyzing and discussion	
5	108/03/18 ~ 108/03/24	Papers reading, analyzing and discussion	
6	108/03/25 ~ 108/03/31	Papers reading, analyzing and discussion	
7	108/04/01 ~ 108/04/07	Papers reading, analyzing and discussion	
8	108/04/08 ~ 108/04/14	Papers reading, analyzing and discussion	
9	108/04/15 ~ 108/04/21	Papers reading, analyzing and discussion	
10	108/04/22 ~ 108/04/28	Midterm Report	
11	108/04/29 ~ 108/05/05	Papers reading, analyzing and discussion	
12	108/05/06 ~ 108/05/12	Papers reading, analyzing and discussion	

13	108/05/13 ~ 108/05/19	Papers reading, analyzing and discussion	
14	108/05/20 ~ 108/05/26	Papers reading, analyzing and discussion	
15	108/05/27 ~ 108/06/02	Papers reading, analyzing and discussion	
16	108/06/03 ~ 108/06/09	Final Report/Presentation/Group Discussion	
17	108/06/10 ~ 108/06/16	Final Report/Presentation/Group Discussion	
18	108/06/17 ~ 108/06/23	Final Report/Presentation/Group Discussion	
Requirement			
Teaching Facility	Computer, Projector		
Textbook(s)	The selected research papers, books and patents		
Reference(s)	The selected research papers, books and patents		
Number of Assignment(s)	12 (Filled in by assignment instructor only)		
Grading Policy	◆ Attendance : 15.0 %   ◆ Mark of Usual : 15.0 %   ◆ Midterm Exam : 30.0 % ◆ Final Exam : % ◆ Other (FinalReport/Present. ) : 40.0 %		
Note	This syllabus may be uploaded at the website of Course Syllabus Management System at <a href="http://info.ais.tku.edu.tw/csp">http://info.ais.tku.edu.tw/csp</a> or through the link of Course Syllabus Upload posted on the home page of TKU Office of Academic Affairs at <a href="http://www.acad.tku.edu.tw/CS/main.php">http://www.acad.tku.edu.tw/CS/main.php</a> . <b>※ Unauthorized photocopying is illegal. Using original textbooks is advised. It is a crime to improperly photocopy others' publications.</b>		