Tamkang University Academic Year 111, 1st Semester Course Syllabus

Course Title	DESIGN AND PRACTICE FOR AERO-ELASTIC TESTS	Instructor	HUANG, MING-HUI
Course Class	TECXM1A MASTER'S PROGRAM, DEPARTMENT OF CIVIL ENGINEERING, 1A	Details	◆ General Course ◆ Selective ◆ One Semester
Relevance to SDGs	SDG9 Industry, Innovation, and Infrastructure		

Departmental Aim of Education

Ⅰ. Develop students' ability and knowledge of civil engineering to meet the requirements of employability and further education.

Ⅱ. Equip students with the ability to integrate engineering profession and information technology to strengthen their competitiveness.

Ⅲ. Enable students to understand the international trends, and to activate a lifelong learning concept.

Subject Departmental core competences

A. Each student should have the advanced professional knowledge of engineering design and analysis.(ratio:40.00)

B. Each student should have the ability to integrate interdisciplinary knowledge and information technology.(ratio:20.00)

C. Each student should have independent thinking and ability of research conducting and dissertation writing.(ratio:10.00)

D. Each student should have the ability of effective communication, team work integration and leadership.(ratio:10.00)

E. Each student should the concept of lifelong learning and international sustainability. (ratio:20.00)

Subject Schoolwide essential virtues

1. A global perspective. (ratio:25.00)

2. Information literacy. (ratio:25.00)

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

4. Moral integrity. (ratio:5.00)

5. Independent thinking. (ratio:20.00)

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	To learn about aero-elastic behavior and aeroelastic wind tunnel testing. The aero-elastic model will be actually designed and fabricated, and the elastic model will be verified by wind tunnel tests.

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	Understanding the behaves and principle of Aero-elasticity.	Cognitive
2	designing and manufacturing a aero-elastic model	Psychomotor

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

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	AE	124	Lecture	Discussion(including classroom and online)
2	BCD	35678	Lecture, Discussion	Study Assignments, Discussion(including classroom and online), Practicum

Course Schedule

Week	Date	Course Contents	Note
1	111/09/05 ~ 111/09/11	Introduction	
2	111/09/12 ~ 111/09/18	Wind-induced vibration of structures	

3	111/09/19～ 111/09/25	Aero-dynamics	
4	111/09/26～ 111/10/02	Aero-elastic	
5	111/10/03～ 111/10/09	Aero-elastic	
6	111/10/10～ 111/10/16	Similarities of Wind Tunnel Test	
7	111/10/17～ 111/10/23	Design of Aerodynamic Modes	
8	111/10/24～ 111/10/30	Design of Rigid Aeroelastic Model	
9	111/10/31～ 111/11/06	Design of Flexible Aeroelastic Model	
10	111/11/07～ 111/11/13	Midterm Exam	
11	111/11/14～ 111/11/20	Practice Work	
12	111/11/21～ 111/11/27	Practice Work	
13	111/11/28～ 111/12/04	Practice Work	
14	111/12/05～ 111/12/11	Practice Work	
15	111/12/12～ 111/12/18	Practice Work	
16	111/12/19～ 111/12/25	Practice Work	
17	111/12/26～ 112/01/01	Final Reports	
18	112/01/02～ 112/01/08	Final Exam	

Requirement	
Teaching Facility	Computer, Projector
Textbooks and Teaching Materials	lecture
References	現代橋梁抗風理論與實踐，項海帆 等著，人民交通出版社 Wind Effects on Structures, E. Simiu and R. H. Scanlan Wind Loading of Structures, John D. Holmes
Number of Assignment(s)	(Filled in by assignment instructor only)
Grading Policy	◆ Attendance： 20.0 % ◆ Mark of Usual：30.0 % ◆ Midterm Exam： % ◆ Final Exam： 50.0 % ◆ Other〈 〉： %

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.**