

Tamkang University Academic Year 108, 2nd Semester Course Syllabus

Course Title	JUNIOR STRUCTURAL DYNAMICS	Instructor	LO, YUAN-LUNG
Course Class	TECAB4P DEPARTMENT OF CIVIL ENGINEERING-DIVISION OF INFRASTRUCTURE, 4P	Details	<ul style="list-style-type: none"> ◆ General Course ◆ Selective ◆ One Semester
D e p a r t m e n t a l A i m o f E d u c a t i o n			
<p>I. Develop students' ability and knowledge of civil engineering to meet the requirements of employability and further education.</p> <p>II. Enable students to have management knowledge and literacy to meet challenges of workplace.</p> <p>III. Equip students with the information technology skills to strengthen their competitiveness.</p> <p>IV. Develop students' literacy of Literature, Art, Language, History, Society, Politics, Futurology, International Situation, Religious Law, Nature and such general courses to have the understanding of humanity emotions and to proceed on-going development.</p>			
Subject Departmental core competences			
A. Civil Engineering Professional Proficiency.(ratio:100.00)			
Subject Schoolwide essential virtues			
<p>1. A global perspective. (ratio:25.00)</p> <p>2. Information literacy. (ratio:25.00)</p> <p>5. Independent thinking. (ratio:50.00)</p>			
Course Introduction	<p>Introduction to Dynamics of Structures is a bridge course connecting the learning subjects in undergraduate courses and the future subjects in graduate courses. The content is mainly focused on the construction of governing equation of a SDOF system and its four approaches to solve. Students will learn these approaches based on what they' ve already learned in their first three years and develop a picture of a general analysis tree including static and dynamic analysis.</p>		

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	This course enables students to review what they' ve learned in the past three years in regard to structural analysis, especial in derivation of ordinary differential equations, routine programming, and static analysis of frames, trusses, and beams and so on.	Cognitive

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

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	A	125	Lecture, Discussion, Experience	Testing, Discussion(including classroom and online), Report(including oral and written), Activity Participation

Course Schedule

Week	Date	Course Contents	Note
1	109/03/02 ~ 109/03/08	Derivation and solutions of 2nd order ODEs	
2	109/03/09 ~ 109/03/15	Static analysis of trusses, beams, and frames	
3	109/03/16 ~ 109/03/22	Equation of motion, problem statement, and solution methods	
4	109/03/23 ~ 109/03/29	Free vibration	
5	109/03/30 ~ 109/04/05	Free vibration	
6	109/04/06 ~ 109/04/12	Response to harmonic and periodic excitations	
7	109/04/13 ~ 109/04/19	Response to harmonic and periodic excitations	
8	109/04/20 ~ 109/04/26	Response to arbitrary, step and pulse excitations	
9	109/04/27 ~ 109/05/03	Midterm Exam Week	

10	109/05/04 ~ 109/05/10	Response to arbitrary, step and pulse excitations	
11	109/05/11 ~ 109/05/17	Routine programming learning	
12	109/05/18 ~ 109/05/24	Numerical evaluation of dynamic response	
13	109/05/25 ~ 109/05/31	Numerical evaluation of dynamic response	
14	109/06/01 ~ 109/06/07	Graduate Exam Week	
15	109/06/08 ~ 109/06/14	Supplementary teaching: Earthquake response of linear system	
16	109/06/15 ~ 109/06/21	---	
17	109/06/22 ~ 109/06/28	---	
18	109/06/29 ~ 109/07/05	---	
Requirement			
Teaching Facility	Computer, Projector		
Textbooks and Teaching Materials	Dynamics of Structures – Theory and Applications to Earthquake Engineering 4th ed by Anil K. Chopra		
References			
Number of Assignment(s)	(Filled in by assignment instructor only)		
Grading Policy	◆ Attendance : 20.0 % ◆ Mark of Usual : 20.0 % ◆ Midterm Exam : 20.0 % ◆ Final Exam : 20.0 % ◆ Other 〈Report〉 : 20.0 %		
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.		