Tamkang University Academic Year 109, 2nd Semester Course Syllabus

Course Title	APPLIED MECHANICS	Instructor	CHIEH-HSUN WU
Course Class	TECXB1B DEPARTMENT OF CIVIL ENGINEERING, 1B	Details	◆ General Course ◆ Required ◆ One Semester
Relevance to SDGs	SDG8 Decent work and economic growth SDG9 Industry, Innovation, and Infrastructure		

Departmental Aim of Education

Ⅰ. Cultivate students' professional knowledge of civil engineering and attitude towards self-learning to satisfy demands for employment and advanced studies.

Ⅱ. Cultivate students' abilities of engineering project execution and practical views of coordination.

Ⅲ. Cultivate students' information technology skills for innovation implementation.

Ⅳ. Cultivate students' engineering ethics, liberal arts mind, and global perspectives.

Subject Departmental core competences

A. Civil Engineering Professional Proficiency.(ratio:75.00)

D. Globalization and Continuous Learning.(ratio:25.00)

Subject Schoolwide essential virtues

2. Information literacy. (ratio:20.00)

5. Independent thinking. (ratio:80.00)

Course Introduction	This is the first course in mechanics. It introduces the resultant and resolution of forces, the calculation of moment, equilibrium of rigid body, supports and reactions, centroids and moment of inertia of an area, analysis of truss, frame and beam. The main objective is to enlighten the student the ability to analyze engineering problem in a logical manner. The knowledge is expected to apply to other advanced courses.

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	1. Learn how to compute the resultant, resolution and moment of forces. 2. Learn how to compute the centroids and moment of inertia of an area, and know the concept of equilibrium of rigid body. 3. Learn the types of supports, and know how to compute reactions. 4. Learn how to analyze structures such as trusses, frames and beams.	Cognitive

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

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	AD	25	Lecture	Testing, Study Assignments

Course Schedule

Week	Date	Course Contents	Note
1	110/02/22 ~ 110/02/28	力學基本概念，單位系統	
2	110/03/01 ~ 110/03/07	質點靜力學，合力，分解力	和平紀念日補假一天(3/1(一))
3	110/03/08 ~ 110/03/14	質點平衡	
4	110/03/15 ~ 110/03/21	空間上的力，直角座標系統上力表達	
5	110/03/22 ~ 110/03/28	單位向量，合力	(第一次考試)
6	110/03/29 ~ 110/04/04	剛體，向量乘積	教學行政觀摩日
7	110/04/05 ~ 110/04/11	力矩	清明節補假(4/5(一))
8	110/04/12 ~ 110/04/18	剛體平衡，自由體圖	
9	110/04/19 ~ 110/04/25	支撐與連接點的反力	

10	110/04/26～ 110/05/02	Midterm Exam Week	
11	110/05/03～ 110/05/09	靜不定反力，二力體及三力體的平衡	
12	110/05/10～ 110/05/16	形心與重心	
13	110/05/17～ 110/05/23	結構分析，Truss, Frame	
14	110/05/24～ 110/05/30	結構分析，樑的剪力與彎矩	(第三次考試)
15	110/05/31～ 110/06/06	樑上的力	
16	110/06/07～ 110/06/13	樑上的力	
17	110/06/14～ 110/06/20	慣性矩	端午節放假(6/14(一))
18	110/06/21～ 110/06/27	Final Exam Week	

Requirement	專心上課,課後複習,勤作習題
Teaching Facility	Computer, Projector
Textbooks and Teaching Materials	"Vector Mechanics for Engineers--Statics" by Beer, Johnston and Mazurek 11th ed.
References	
Number of Assignment(s)	(Filled in by assignment instructor only)
Grading Policy	◆ Attendance： % ◆ Mark of Usual：40.0 % ◆ Midterm Exam： 20.0 % ◆ Final Exam： 20.0 % ◆ Other〈實習課參與，表現〉：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.**