Tamkang University Academic Year 110, 2nd Semester Course Syllabus

Course Title	STATICS		Instructor	KUAN OU YANG
Course Class	TENXB1B DEPARTMENT OF AEROSPACE ENGINEERING, 1B		Details	◆ General Course ◆ Required ◆ One Semester
Relevance to SDGs	SDG3 Good health and well-being for people SDG9 Industry, Innovation, and Infrastructure			

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

Ⅰ. Apply scientific knowledge and engineering techniques to analyze and solve fundamental aerospace engineering problem.

Ⅱ. Through fundamental theory to design and implement experiments, and be able to analyze experimental data.

Ⅲ. Maintain the spirit of independent thinking, self-elevate, and continuous learning.

Ⅳ. Uphold the responsible attitude of work ethics and team work.

Ⅴ. Will have access to information, using basic knowledge, diversification, and better ability to adapt to circumstances.

Subject Departmental core competences

A. With basic aerospace engineering expertise.(ratio:30.00)

B. Able to solve basic engineering problems via fundamental theory.(ratio:30.00)

C. Capable of lifelong learning and research capacity for further studies.(ratio:20.00)

D. To work with a sense of mission and responsibility.(ratio:5.00)

E. Have team spirit and the ability to communicate with each other.(ratio:5.00)

F. With an international perspective, have the ability to connect with the world.(ratio:5.00)

G. Taking full advantage of information and utilization of computer-assisted problem solving skills.(ratio:5.00)

Subject Schoolwide essential virtues

1. A global perspective. (ratio:10.00)

2. Information literacy. (ratio:50.00)

3. A vision for the future. (ratio:10.00)

5. Independent thinking. (ratio:30.00)

	Course Introduction	Statics is a part of the broad field of mechanics which is the study of the action of forces on material bodies. In the course, the rigid bodies in equilibrium, the elements of statics in two and three dimensions, centroids, analysis of structures and machines are considered.

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	To make students understand the equilibrium of a system of particles or rigid bodies in two and three dimensions.	Cognitive
2	To make students understand the analysis of a basic engineering structure - trusses.	Cognitive

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

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	ABCDEFG	1235	Lecture, Discussion	Testing, Study Assignments, Discussion(including classroom and online)
2	ABCDEFG	1235	Lecture, Discussion	Testing, Study Assignments, Discussion(including classroom and online)

Course Schedule

Week	Date	Course Contents	Note
1	111/02/21 ~ 111/02/25	Introduction, basic laws	
2	111/02/28 ~ 111/03/04	Forces and Particle Equilibrium	

3	111/03/07～111/03/11	Equilibrium of a System of Particles	
4	111/03/14～111/03/18	Moment of a Force About a Point	
5	111/03/21～111/03/25	Moment of a Force About a Line	
6	111/03/28～111/04/01	Equilibrium of Force Systems	
7	111/04/04～111/04/08	Equilibrium of Force Systems	
8	111/04/11～111/04/15	Fundamental Applications of the Equilibrium Equations	
9	111/04/18～111/04/22	Trusses-The Method of Joints	
10	111/04/25～111/04/29	Midterm Exam Week	
11	111/05/02～111/05/06	Trusses- The Method of Sections	
12	111/05/09～111/05/13	Space Trusses	
13	111/05/16～111/05/20	Centroids and Mass Centers	
14	111/05/23～111/05/27	The Method of Composite Parts	
15	111/05/30～111/06/03	The Theorems of Pappus	
16	111/06/06～111/06/10	Inertia Properties of Plane Areas	
17	111/06/13～111/06/17	The Parallel –Axis Theorem	
18	111/06/20～111/06/24	Final Exam Week	

Requirement	
Teaching Facility	Computer, Projector
Textbooks and Teaching Materials	"Vector Mechanics for Engineers: Statics," 11th Ed., by F. Beer, Mc Graw Hill.
References	"Engineering Mechanics - Statics," 11th Ed., by R. C. Hibbeler, Pearson & Prentice Hall
Number of Assignment(s)	(Filled in by assignment instructor only)
Grading Policy	◆ Attendance： 10.0 % ◆ Mark of Usual：30.0 % ◆ Midterm Exam： 30.0 % ◆ Final Exam： 30.0 % ◆ 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 .
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