



Philadelphia University
Faculty of Engineering
Department of Mechanical Engineering
Second semester, 2008/2009

Course Syllabus

Course Title: Engineering Mechanics :Statics	Course code: 640231+620211
Course Level: 2th year	Course prerequisite (s) and/or co requisite (s): Mathematics
Lecture Time: 12-13:10 Sun/Tues/Thurs	Credit hours: 3

Academic Staff Specifics

Name	Rank	Office Number and Location	Office Hours	E-mail Address
Dr. A. Qandil	Assis. Prof	E Department of Mechatronics	13:30-15:00	Qand4@Hotmail.it

Course module description:

This course provides the material needed for the basic understanding of the theory and applications of rigid body statics. This course is standard requirement in any engineering as well as in most engineering technology disciplines.

Course module objectives:

- Understand Statics Fundamentals
- Analyze Forces and Calculate Equilibriums for rigid bodies
- Develop Free Body Diagrams
- Calculate centers, moments of inertia, and work
- Gain a working insight into the design and analysis of practical static structures.

Method of instruction:

Lectures, class demonstrations, chalkboard, digital and digitized media, presentation, discussions, in class problem solving, computer simulation, homework assignment of problem.

Course/ module components

- **Books**
Title: Engineering Mechanics: Statics
Author: R.CHibbeler
Publisher: Prentice Hall
Edition : Tenth edition, 2004
- **Support material (s)** Lecture notes soft copy (vcs, acs, etc).
- **Study guide (s)**
- **Homework and laboratory guide (s) .**

Teaching methods:

- 3 Lectures a week
- 1-2 Appointments for tutorials and problem solving after each chapter

Assessment instruments

- Short reports and/ or presentations, and/ or Short research projects
- Quizzes.
- Home works
- Final examination: 50 marks

<u>Allocation of Marks</u>	
Assessment Instruments	Mark
First examination	20
Second examination	20
Final examination: 50 marks	50
Reports, research projects, Quizzes, Home works, Projects	10
Total	100

Learning outcomes:

1. Provide the best learning environment and concepts and technical education needed to achieve the above indicated student objectives and for a career in Engineering Technology.
2. Demonstrate the knowledge and dexterity to perform effectively in the workplace with the communication skills needed to deal with fellow workers, clients and public.
3. Emphasize the understanding of societal implications of engineering decisions and design in both a local and global context and the ethical training to evaluate those implications.
4. Encourage class participation, questions and class related discussions.
5. Incite critical analysis in the solution of problem and application of innovation in technology.
6. Stimulate team work inside and outside the classroom.
7. Keep students informed of their progress during the semester.
8. Provide support inside and outside the classroom.

Documentation and academic honesty

- Documentation style (with illustrative examples)
- Protection by copyright
- Avoiding plagiarism.

Course/module academic calendar

week	Basic and support material to be covered	Homework/reports and their due dates
(1)	General Principles Tutorial and problem solving	Selected typical Problems
(2)	Force Vectors Tutorial and problem solving	Selected typical Problems
(3)	Equilibrium of a Particle Tutorial and problem solving	Selected typical Problems
(4)	Force System Resultants Tutorial and problem solving	Selected typical Problems
(5)	Force System Resultants Tutorial and problem solving	Selected typical Problems
(6)	Equilibrium of a Rigid Body Tutorial and problem solving	Selected typical Problems
(7) Mid Examination	Equilibrium of a Rigid Body Tutorial and problem solving	Selected typical Problems
(8)	Structural Analysis Tutorial and problem solving	Selected typical Problems
(9)	Structural Analysis Tutorial and problem solving	Selected typical Problems
(10)	Internal Forces Tutorial and problem solving	Selected typical Problems
(11) Mid Examination	Friction Tutorial and problem solving	Selected typical Problems
(12)	Center of Gravity and Centroid Tutorial and problem solving	Selected typical Problems
(13)	Center of Gravity and Centroid Tutorial and problem solving	Selected typical Problems
(14)	Moments of Inertia Tutorial and problem solving	Selected typical Problems
(15)	Moments of Inertia Tutorial and problem solving	Selected typical Problems
(16)	Virtual Work Tutorial and problem solving	Selected typical Problems
Final Examination	Tutorial and problem solving	Selected typical Problems

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

Module references

Books

- **Das, Kassimali, Sami , “Engineering Mechanics Statics”, IRWIN., 1994.**
- **James R.Ogden Mechanics: Statics - Dynamics (Rea's Problem Solvers) Powells Books**
- **F.P.Beer, E.R.Johnston.Jr..and E.R.Eisenberg.Vector Mechanics for Engineers- Statics,8 edition,WCB McGraw-Hill,2007**

Websites

<http://www.yourotherteacher.com>

Find all the study resources for Engineering Mechanics by R. C. Hibbeler. Samenvatting Engineering Mechanics: Statics colleges. 42Pages: 22year: 15/16. 22. 15/16. 42. Static - Notes. 14Pages: 37year: 17/18. 37. Engineering Mechanics: Statics & Dynamics 83 lectures | 101,527 views. Environmental Fluid Mechanics: Textbook and Lecture Slides 0 lectures | 1,568 views. Tutorial on Tensors in Engineering 15 lectures | 15,160 views. Engineering Mechanics: Statics & Dynamics. Start Course Visit Official Site. Course Description. Mechanics, the study of forces and physical bodies, underpins a very large proportion of all forms of engineering. A thorough understanding of mechanics is essential to any successful engineer.