



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

**Course Syllabus**

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

**Academic Staff Specifics**

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

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

### 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

<b>week</b>	<b>Basic and support material to be covered</b>	<b>Homework/reports and their due dates</b>
(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) <b>Mid Examination</b>	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) <b>Mid Examination</b>	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
<b>Final Examination</b>	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>

Detailed Description Engineering Mechanics is one of the core courses that all engineering students must take. Broadly, mechanics is broken into topics: Statics and Dynamics. In this course, we begin to focus on Engineering Statics, where we solve force systems in static equilibrium. First, we review Newton's Laws, Units, and Trigonometry. Next, we learn how to add vectors together using triangles and trigonometry. Engineering Mechanics: Statics, 13th Edition Engineering Mechanics: Statics, 13th Edition. ISBN: 9780132915540 / 0132915545. Table of Contents. Now is the time to redefine your true self using Slader's free Engineering Mechanics: Statics answers. Shed the societal and cultural narratives holding you back and let free step-by-step Engineering Mechanics: Statics textbook solutions reorient your old paradigms. NOW is the time to make today the first day of the rest of your life. Engineering Mechanics: Statics & Dynamics excels in providing a clear and thorough presentation of the theory and application of engineering mechanics. Engineering Mechanics empowers students to succeed by drawing upon Prof. Hibbeler's everyday classroom experience and his knowledge of how students learn. This text is shaped by the comments and suggestions of hundreds of reviewers in the teaching profession, as well as many of the author's students.