



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>

ENGINEERING MECHANICS statics and Dynamics Fourteenth Edition Ltd. Pearson Education, Inc., Hoboken, New Jersey Printed in the United States of America 10 9 8 7 6 5 4 3 2 1 ISBN-10: 0-13-391542-5 0-13-391892-0 ISBN-13: 978-0-13-391542-6 978-0-13-391892-2 to the Student With the hope that this work will stimulate an interest in Engineering Mechanics and provide an acceptable guide to its understanding. Engineering Mechanics - Statics Chapter 2 The beam is to be hoisted using two chains Meriam Kraige Engineering Mechanics Statics 6th Edition book. 608 Pages 2012 60.61 MB 11,121 Downloads. Meriam Kraige Engineering Mechanics Statics 6th Edition book dynstab2/ThePirateBay Engineering Mechanics Solutions Statics (5 th Edition). 984 Pages 2016 45.86 MB 10,939 Downloads New! Engineering Mechanics Solutions Statics (5 th Edition) J L Meriam|Kraige Statics is typically the first engineering mechanics course taught in university-level engineering programs. It is the study of objects that are either at rest, or moving with a constant velocity. Statics is important in the development of problem solving skills. It teaches you to think about how forces and bodies act and react to one another. You learn how to analyze word problems, pull out the important information and then solve. One of the most important aspects of this course is the use of free body diagrams.