

ENGINEERING MECHANICS: STATICS

1. COURSE TITLE

- Statics 20-011 (98-99 2nd Semester)

2. INSTRUCTORS

- Lecturer: M. Ghaemian, Room 421, Ext. 4242
- Teaching assistant: M. A. Ameri Fard

3. COURSE OUTLINE

Introduction to Statics, Force Systems, Equilibrium, Structures
Distributed Forces, Friction, Virtual Work, Area and Mass Moments of Inertias

4. CLASS-HOURS

Three (3) hours of lectures per week (Sunday and Tuesday 10:30-12:00)
One (1) hour of tutorial per week

5. OBJECTIVE AND SCOPE

The main objective of the course is to enable students to perceive, and visualize problems related to Engineering Mechanics, Statics. We will be concerned with the development of principles of mechanics and their application, which are rigorously expressed by mathematics.

Newton's first law contains the principle of the equilibrium of forces, which is the main topic of concern in Statics. This law is the consequence of the second law of Newton that will be discussed in the course titled as Dynamics.

6. RELATION OF THE COURSE TO PAST AND FUTURE STUDIES

Mathematic(I) is prerequisite of Statics. The course is the first course for students with interest in structural engineering.

7. TEXT

The material covered in the course follows closely the treatment presented in the following textbook:

**Engineering Mechanics, Statics, 9th Edition,
By: J.L. Meriam; L.G. Kraige & J. N. Bolton**

8. EVALUATION

The course is consisted of 8 set of **assignments**, **one midterm** examination which will be held during the term and a **final** examination.

The evaluation scheme is as follows:

	Points
-Assignments	5
-Midterm examination	30
-Final examination	65
-Total	100

Assignments have equal weights and each is marked out of (100).

The midterm examination will be held on Tuesday 2nd of Ordibehesht and consists of chapters 1, 2, 3 and 4. Students need to pass the final exam in order to credit the course.

LIST OF ASSIGNMENTS

Numbering is the same as appears in the textbook.

Month/day	Chapters	Sub Chapters	Problems
11/20	Orientation		
11/27	Chapter 1	1.1→1.5	2-4 1-7, 1-9, 1-10, 1-11
11/29	Introduction	1.6→1.8	Assignment #1 Due Date 12/4 (12:00 Noon)
12/4	Chapter 2	2.1→2.3	5-6-10-13-15-18-21
12/6	Force systems	2.4→2.6	39-43-50-54-61-65-72-73-84-85-88
12/11		2.7→2.9	92-95-100-102-126-141-146-160 Assignment #2 Due Date 12/13 (12:00 Noon)
12/13	Chapter 3	3.1→3.2	A-B-C
12/20	Equilibrium	3.3	1-6-10-17-18-25-32-43-52
12/25		3.4	59-67-75-78-82-94 Assignment #3 Due Date 1/17 (12:00 Noon)
1/17	Chapter 4	4.1→4.3	7-19-23-29
1/19	Structures	4.4	36-40-49 Assignment #4-part1 Due Date 1/24 (12:00 Noon)
1/24		4.5	59-61-62
1/26		4.6	65-66-70-83-110 Assignment #4-part2 Due Date 1/31 (12:00 Noon)
1/31	Midterm Preparation- Questions and Answers		
2/2	Midterm – Chapters 1, 2, 3 and 4		
2/7	Chapter 5	5.1→5.2	3-12-18-26
2/9	Distributed Forces	5.3	35-36-37 Assignment #5-part1 Due Date 2/23 (12:00 Noon)
2/14		5.4→5.5	45-50-55-77-83-
2/16		5.6→5.7	91-92-97-107-119-127
2/21		5.8	134-136-139-144-197 Assignment #5-part2 Due Date 2/23 (12:00 Noon)
2/23	Chapter 6	6.1→6.3	2-6-8-10-11-12-18-22-24-28-29-30-39-44-123
2/28	Friction	6.4→6.8	64-65-68 out of the scope
2/30		6.9	- Assignment #6 Due Date 3/6 (12:00 Noon)
3/6	Chapter 7	7.1→7.3	2-14-16-17-25
3/11	Virtual Work	7.4	34-47-53-57 Assignment #7 Due Date 3/5 (12:00 Noon)
3/13	Area and Mass Moment of Inertia	Appendix A A1-A3 Appendix A A4 Appendix B	10-16-22-30-42-43-49-60-71-79 Assignment #8 Due Date on the day of final Exam