

STATICS
ENGINEERING 8

FALL 1999

INSTRUCTOR: C. L. Glaves

OFFICE: FEM-4D

PHONE: 638-3641 ext. 3215

OFFICE HOURS: M W F 9:00 - 9:50 AM

~~M 2:40 - 3:30 PM~~ CG ,
or by arrangement

TEXT: Engineering Mechanics : Statics, Eighth Edition, R. C. Hibbeler

GRADING: 80% Exam scores (Four exams plus final exam, all equally weighted.
The lowest of the five exam scores will be dropped).

10% Homework

10% Group project

HOMEWORK: This is a problem solving course. There are relatively few principles and little memorization in Statics. Most class periods you will be assigned homework problems that require you to apply the principles of Statics, sometimes in creative ways. Exams will be like the homework. It is essential that you attempt the homework.

LATE WORK AND MAKEUPS: There will be no makeup exams without prior approval. If you must miss an exam you need to let me know before the exam. Late homework will not be given credit.

GRADING SCALE: 87% A
77% B
65% C
50% D

ATTENDANCE: Mandatory (may be dropped if miss > two weeks, i.e. six class sessions)

DROP DATE: Friday, Oct. 15, is the last day to drop this course.

HOLIDAYS: Monday, Sept. 6, Labor Day
Thursday-Friday, Nov. 25-26, Thanksgiving Day Holidays

FINAL: Wednesday, Dec. 15, 10:30 AM - 12:30 PM

COURSE OBJECTIVES:

1. Learn to apply algebraic, graphical, and vector analysis problem solving techniques to simple mechanical systems in static equilibrium.
2. Learn how to determine the center of mass, centroid, and moment of inertia for objects of various geometries.
3. Learn to solve distributed force statics problems.
4. Define the concept of friction and learn to solve applications involving friction.

COURSE OUTLINE:

1. Introduction to Statics
 - a. Forces, vectors, Newton's laws, units
 - b. Equilibrium of a particle
2. Force Systems
 - a. Force components, couples, resultants
 - b. Moments
3. Equilibrium of a Rigid Body
 - a. Two dimensions
 - b. Three dimensions
4. Structures (applications)
 - a. Trusses
 - b. Frames and machines
5. Internal Forces
 - a. Shear and bending moment in beams
6. Friction
 - a. Definitions
 - b. Applications
7. Center of Gravity and Centroid
 - a. Simple geometry
 - b. Composite bodies
8. Moments of Inertia