

**MIAMI UNIVERSITY
SCHOOL OF ENGINEERING AND APPLIED SCIENCE
DEPARTMENT OF ENGINEERING TECHNOLOGY**

ENT 271	STATICS	3
Course Number	Title	Credit Hours

DESCRIPTION:

The course is an introduction to the application of force and moment equilibrium equations to the solution of problems involving rigid body structures such as frames and trusses. The definition of sliding friction is introduced as an additional equation to be used in the solution of equilibrium problems.

PERIODS PER WEEK: 3 Lectures

PREREQUISITE(S): MTH 125 or equivalent

TEXT

Applied Mechanics for Engineering Technology, 7th Ed. , Keith M. Walker, Prentice Hall, 2000

METHOD OF PRESENTATION:

Class room discussions, individual tutorial sessions, computer laboratory assignments, regularly scheduled in-class tests, and final examination

METHOD OF EVALUATION:

The final grade for the course will be determined by the evaluation of two components to be generated by each course student. These components are listed below with the relative percentage weighting of each. The homework portfolio will consist of the solutions to the end of chapter home work problem list taken from the text book and shown above. Please refer to the homework portfolio grade sheet document on this disk and also provided on the engineering technology web sit file server. The home work solutions must exhibit clear indication that they were created by the student and are not simply copies of the instructor solutions provided on this disk and on the web site.

Homework / Portfolio	40%
Midterm Exam	30%
Final Exam	30%

GENERAL OBJECTIVES:

Upon completion of the course the student should be able to

- 1) demonstrate a working knowledge of the basic principles of equilibrium.
- 2) apply these principles to the solution of simple engineering mechanics problems.

COMPUTER SOFTWARE:

Working Model[®]

COURSE ASSESSMENT CRITERIA

This course is a constitute course and is therefore not directly assessed. It will contribute to **Outcome 2** "Fundamental knowledge of engineering materials and how these materials are used in the design of machine components and systems" which is assessed in ENT 278.

ASSESSMENT TOOLS:

Employer Surveys
Graduate Surveys
Student Evaluations
Design/Lab Projects
Tests

TOPICAL OUTLINE:

Week	Subject	Chapter	Homework
1	Introduction	Chapter 1	13, 15, 19, 28, 29
2 and 3	Forces, Vectors, and Resultants	Chapter 2	13, 14, 16, 21, 30
4 and 5	Moments and Couples	Chapter 3	6, 11, 13, 18, 21
6 and 7	Equilibrium	Chapter 4	11, 15, 19, 35, 52, 61, 66
8 and 9	Structures and Members	Chapter 5	22, 43, 57, 68, 77
10 and 11	Three Dimensional Equilibrium	Chapter 6	4, 9, 42
12 and 13	Friction	Chapter 7	4, 5, 12, 21, 32, 43
14	Centroids and Centers of Gravity	Chapter 8	8, 18, 21
15	Moments of inertia	Chapter 9	Compute the moment of inertia with respect to a horizontal centroidal axis using the areas of problems 8 and 18 in chapter 8

MIAMI UNIVERSITY LEARNING COMMUNITY:

Miami University is committed to fostering a supportive learning environment for all students irrespective of individual differences in gender, race, national origin, religion, handicapping conditions, sexual preferences, or age. Students should expect, and help create, a learning environment free from all prejudice. Disparaging comments, sexist or racist humor, or questioning the academic commitment of students based upon these individual differences are behaviors that undermine our learning community. If such behaviors occur in class, please seek the assistance of your Instructor or the Department Chair.

Prepared by: Professor Ron Earley, May 17, 2005