

GEN ENG 205-2  
ENGINEERING ANALYSIS 2: *Statics and Dynamics*  
Winter 2007

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**Class Times and Locations:** MTWThF 8-8:50, Tech L361

**Class Website:** Northwestern Course Management System  
<http://courses.northwestern.edu>

## REQUIRED TEXTBOOK

Bedford, A. and Fowler, W. (2005); *Engineering Mechanics: Statics & Dynamics*, Fourth Edition; Prentice-Hall, Inc.; Upper Saddle River, New Jersey.<sup>1</sup>

## COURSE OBJECTIVES

- Introduce basic concepts in **engineering mechanics**, including statics and dynamics of particles and rigid bodies, and linear elastic deformation;
- Understand the process of engineering analysis in which fundamental concepts are employed through a logical step-by-step method of **problem solving**;
- Further understand and apply of **mathematical tools**: vectors, linear algebra, calculus, etc; and
- Extend the **programming skills** and concepts introduced in Engineering Analysis 1 to make MATLAB an everyday tool for solving engineering design and analysis problems.

## COURSE ASSESSMENT

Grading is based on the following components that are weighted as described below:

1. Homework: 20%
2. Design Problem: 20%
3. Midterm Examinations (2): 15% each
4. Final Exam: 30%

Grades will be posted periodically on the class website. Please check your grades to make sure your scores are recorded correctly.

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<sup>1</sup>Earlier editions of the book are acceptable as long as it is understood that each student is fully responsible for completing the “assigned” homework problems.

## Homework

- Homework will be assigned weekly and will be due on Fridays. The general policy is that homework is to be turned in during class on Friday. **Extensions to turn the homework in by 5 PM on Friday are granted in advance and under special circumstances.**
- There will be at least one problem assigned each week that will require you to use MATLAB.
- Solutions to the homework problems will be posted on the course website at 5 PM on Fridays. Therefore, no late homework can be accepted under any circumstance.
- Be professional, e.g., use engineering graph paper, write neatly, and show all work.
- Each week we will grade the MATLAB problem and approximately half of the “pencil-and-paper” problems. Lowest homework score (by percentage) will be dropped from final score.

Please make sure to start early so that you can ask questions during class, recitations, or office hours.

## Design Problem

The design problem will be assigned in week 5 and will be due on week 9. It will be an in-depth problem emphasizing creative thinking, integrating the material from the class, and requiring an organized written report. Detailed instructions will be included with the assignment.

## Examinations

We will have 3 exams as detailed below. Additional information will be provided as we near the exam dates.

1. EXAM #1: Thursday, February 1 in class.
2. EXAM #2: Thursday, February 22 in class.
3. FINAL EXAM: Thursday, March 15 from 12-2 (Room TBA).

Special arrangements must be discussed with the instructor at least 2 weeks in advance of the exam dates. Travel plans ARE NOT sufficient to warrant special accommodations.

## COMMENTS, SUGGESTIONS, AND ADDITIONAL INFORMATION

1. There will be two TAs who will be assigned to our section. Their contact information and office hours will be posted on the class website on Wednesday, January 3.
2. Take advantage of office hours! This is time we have set aside to meet with students. In addition to our office hours, you will have access to office hours of the TAs for other EA2 sections. All office hours will be posted on the class website.
3. Announcements, hints for homework problems, homework solutions, grades, errata, etc. will be posted on the class website (frequently). Check the site once or twice per week.
4. The best way to reach us is via email. We can usually get back to students within 24 hours.
5. Questions about grading should be raised with the TA during his/her office hours. If a question is not answered to your satisfaction, then (and only then) you should raise it with the instructor (also during office hours).
6. Suggestions:
  - Spend time mastering the fundamental concepts introduced in the early part of the course.
  - Solve problems! Learning Mechanics is like learning to play a musical instrument. It is possible, albeit extremely unlikely, to learn to play by watching somebody else play. At a minimum, you should understand the homework problems, the examples presented in class, and the examples in the textbook.