

Intro. to Linear Algebra and Differential Equations

Instructor: Nancy Stanton

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Office hours: by appointment or

4:00-5:00 p.m. M

8:45-10:00 a.m. T

2:30-3:45 p.m. W

8:45-9:30 or 10:00 a.m. Th

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Teaching Assistants:

Shuangcai Wang (28BT-01, H 3:30)

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Textbooks: Strang, *Introduction to Linear Algebra*, 3rd edition

Boyce and DiPrima, *Elementary Differential Equations and Boundary Value Problems*, 8th edition

Syllabus: We will cover chapters 1-7 of Strang and chapters 1-3 of Boyce and DiPrima. The linear algebra topics are matrices, solving systems of linear equations, vector spaces, orthogonality, determinants, eigenvalues, eigenvectors, and linear transformations. The differential equations topics are first order and linear constant coefficient second order ordinary differential equations.

Homework: Homework assignments will be posted on the course web site on Friday. The problems will generally be due the following Friday. The first assignment is below (and posted); it is due Friday of next week. There may also be extra credit assignments, which will usually be due on Mondays. I do not accept unexcused late homework.

The homework assignments will include reading as well as problems. Read each section of the text before it is covered in class. To do well, you **must** keep up with the homework and review frequently.

Paper: You will work on this in groups of three or four. The paper will be on a linear algebra topic which we do not have time to cover. I will suggest some possible topics.

Credit will depend on doing good work, *and* holding your group together, getting everyone to contribute.

Computers: I will occasionally send an email message to the class. There will be occasional computer demonstrations in class. Some assignments will require the use of Matlab.

Web Site: The web page for this section is

<http://www.nd.edu/~nancy/Math228/info.html>

On this page you will find general information about the course (including a copy of this handout), homework assignments, and announcements.

Examinations: There will be two midterms, eleven quizzes and a final exam.

Exam I: Thursday, September 23, 8:00-9:15 a.m. in DBRT 136

Exam II: Tuesday, November 9, 8:00-9:15 a.m. in DBRT 136

Final: Thursday, December 16, 1:45-3:45 p.m.

Quizzes: In tutorials weekly except the weeks of the midterms

For Quiz 1 (August 26) you will work in groups on some questions and problems which require knowledge you all have and give hints of where we are heading. Beginning with Quiz 2, quiz problems will be similar to lecture examples, text examples and homework problems. More than half the points on exams will be problems similar to lecture examples, text examples and homework problems. You may use calculators on quizzes and exams.

Grading:

Midterms 200 points (100 points each)

Quizzes 100 points (10 points each, the lowest quiz score will be dropped)

Final 150 points

Homework 100 points (after scaling)

Group paper 50 points

Absence from examinations and quizzes: If you are absent from an examination or quiz without an official excuse, you will receive a grade of zero for that examination or quiz. If you are officially excused, you will not be penalized. If you miss a test or quiz for any reason, send me an email message, call me or call the Mathematics Department as soon as possible.

Honor Code: Testing will be done under the Honor Code. On homework, you are allowed and encouraged to work together and discuss the problems. However, you may not copy work from anyone else, or from another group in the case of group assignments. Copying a solution from any source is considered plagiarism. Your name on an assignment, quiz or exam indicates your adherence to the honor code.