

P. Greim

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Office hours

We, Th, Fr 9:00 - 9:30

Mo, We, Fr 10:30 - 11:00

Mo, We 15:15 - 15:45

and **other times by appointment!**

Normally I'll also be in my office on Thursday evenings:

Th 19:30 - 20:30 CA234A

Th 20:30 - 22:00 for help in the PC Lab CA313

Text

Advanced Engineering Mathematics, 7th ed.

By Erwin Kreyszig

John Wiley & Sons (ISBN 0-471-55380-8)

Covered material Chapters 1-4, 6, 7 (details below)**Goals**

This is an integrated course in Linear Algebra and Differential Equations, with the emphasis on the latter. The Linear Algebra portion serves, to a large extent, as one of the tools for the solution of differential equations.

Specific goals in Linear Algebra are your ability to solve linear systems of equations, your familiarity with the language of matrices, your ability to perform basic matrix operations such as finding inverses and computing determinants - by hand for small matrices, by computer for larger ones. You will be exposed to the notions of vector space, linear independence, and basis. You will also learn how to find eigenvalues and eigenvectors.

In Differential Equations, you should learn to recognize situations that can be described and analyzed in the language of differential equations, to decide which methods are appropriate for the solution, to solve the equation(s) by hand or by computer, and to interpret the mathematical solution.

By the end of the course, you should have a library of types of DEs that you can solve, and the appropriate methods. Details in the syllabus.

Technology

There are many software programs on different platforms that are suitable for use in that course - some are general purpose software - Mathematica, Maple, MatLab, Derive, MathCad (for part of the course), others are written specifically for DEs (Phaser, MDEP, ...) . For details (a partial list of available software, with reviews) check out <http://aslan.math.hmc.edu/codee/home.html>"

Two more web sites of interest : <http://math.rice.edu/> and <http://math.bu.edu/odes/> .

MatLab is available on the Novell network. You will be able to use it in homework and projects. You may use other software, if you like. I will use MatLab and other software for demonstrations in class.

Homework

is essential. Do it! It will enable you to test your understanding of the material and prepare you for the tests. In many cases you will learn more from solving the problems than from attending the lecture. When you work problems, *first* try to do them by yourself. *After that*, whether you succeed or not, you may discuss them with others. You will learn from talking about mathematics. Discussing a problem solution with a classmate, understanding it, and then formulating it in your own words is allowed. However, *copying a solution* from others is not. (The rules for take-home tests or test portions are different - see below.)

I will grade some of your daily homework sporadically, and I'll quiz you on it. Late homework will not be accepted. If you *miss a class* period, get the homework assignment from me or somebody in the class. You will still have to turn it in at the due date. If you can't do it, come and see me.

Homework **format**: Put your name and the date in the top right corner, the textbook page in the left corner. Draw a horizontal line across the page after each problem. (The easier you make grading for me, the more I can grade.)

There will be some MatLab projects, that you are encouraged to do in groups of two cadets. You will have to submit one copy of the report per group, but each group member has to be able to present the report orally.

Take-home tests

I have no take-home tests scheduled, but if I let you do or redo a *test* problem as take-home, then you may not discuss the problem with anybody else - except myself.

Legitimate help

is available. The MathLab staff, consisting of faculty, a graduate assistant, and cadet tutors, will be available in CAPERS 207 Sunday - Thursday night. One-on-one tutoring service is offered by the Department free of charge in the afternoons, perhaps also some mornings. Check the details on the web: follow the link on the MACS homepage.

I am available during my office hours, and at other times by appointment, when possible. You may even take a chance, drop by my office, and see if I'm available.

Grades

are based on the final (25%), 4 written tests (50%), homework and projects (together 25%). If your final is better than your semester average, then I'll let it count 1/3 and the semester average 2/3. I am using the 10%-per-grade scheme as a guideline. I will give partial credit as appropriate. If after grading a test the statistics show a particularly bad performance of the whole class at one problem, I usually adjust that problem's weight within the whole test.

Missing a test

unexcused will result in a score of zero. I will not allow you to miss a test because of lack of preparation.

If your absence is excused, I may choose to drop it and prorate the other test and homework scores, or give you a make-up test. *To be excused from a test you need to give me advance notice* - if possible at or before the class period preceding the test.

Missing class

excessively is not a good idea either. Read the section "Class Attendance Policy" on page 27/28 of the 1995-1997 catalog. I consider sleeping in class as absence from class. If you have to miss a class or if you can't stay awake, talk to me.

Syllabus

A tentative day-by-day syllabus follows. However, I want to be flexible and base decisions about the following class period on the way the class progresses.