Math 285: Introduction to Differential Equations

Monday, Wednesday, and Friday,
C1: 10:00-10:50 am, 314 Altgeld
D1: 11:00-11:50 am, 314 Altgeld
F1: 2:00-2:50 pm, 116 Roger Adams Lab

Prerequisite: Math 241.

Credit: 3 undergraduate hours (Credit not given for both Math 285 and any of Math 284, Math 286, or Math 441)

Instructor:
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Phone: 333-0217 (not recommended)

Office hours: TBA
or set an appointment by e-mail.

Tutoring: 443 Altgeld Hall, Mon.-Thu., 4-8 pm

Webpages:
http://learn.illinois.edu
http://piazza.com/illinois/fall2017/math285c1d1f1
http://webassign.net


Course description and goals

This course is an introduction to differential equations. It is intended for engineering students and others who require a working knowledge of differential equations. Topics to be covered include techniques for solving and applications of ordinary differential equations and an introduction to partial differential equations, separation of variables and Fourier series. The focus will be on understanding the physical meaning of the equations and their solutions, and not on rigorous proofs.
Attendance and class preparation

Class attendance is expected. While attendance will not constitute part of your grade, coming to lecture regularly can increase your chances for success in the course. You can assume that anything that is covered in class may be tested in the written exams (unless we say otherwise). The time in class will be divided between lecturing (mostly for proofs or important concepts) and discussion and problem solving. Therefore your participation is encouraged. We will inform you in advance of the material that will be covered and strongly encourage you to read ahead. That way you can come to class prepared for the discussion and know which topics you want to have further clarified.

Homework, tests, final exam, and grading

You will receive a numerical score rather than a letter grade on assignments and tests, and your final score will then be converted to a letter grade. But after each test we will indicate approximate grade ranges, so that you have some idea of how you are doing. Also, 20% of your grade will depend on the homework, 5% on your lowest graded test, and 25% on each of the remaining tests (Tests include midterms and final).

Homework

Following most lectures a WebAssign assignment will be posted designed to develop the computational skills and understanding for that lecture. It must be completed within 5 days of the time it is assigned. The due time will always be 11:59 pm.

You are free to discuss the homework with your classmates, but we strongly encourage you to understand the solution yourself. Do not assume you understand something just because someone told you how to do it. Remember that no collaboration will be allowed during in-class tests and exams.

Your homework assignment with the lowest score will be dropped. Your homework average makes up 20% of your final grade.

Midterms and final exam

There will be three written midterm tests, given during regular class times, and a comprehensive final exam. You may not use notes, books, calculators
or computers during any of the tests. The test with your lowest score will count for 5% of your grade. If you miss a test, that will count as your lowest graded test. (Note that University policy requires that you take a final exam.) Each of the remaining tests will be worth 25% of your final grade.

Make up tests will be given only if you present written evidence, as soon as possible, that you did (or will have to) miss an exam for a legitimate reason. Medical conditions, religious time conflicts and university related sports competition are examples of reasons for a justified absence. A note that you have visited McKinley is not proof of a legitimate reason. Travel and leisure plans are not a legitimate reason.

**Grading**

Letter grades will be assigned at the end of the semester based on your combined score in the class (from graded homework, midterms, and final). However, at any time during the semester you are welcome to ask us what grade your performance so far corresponds to so that you have an idea of how you are doing.

**Suggestions for success in the class**

- Please come to class prepared. This does not mean you have to understand everything. In fact, if you don’t understand something you will have the opportunity to ask about it and we can discuss it in class.

- Please let us know if you are having trouble with something, and do so before it becomes an issue on a test or exam. Do make use of office hours.

- While reading your text we strongly encourage you to work through the proofs and examples yourself on paper. This is a very useful way to increase your understanding of the material.

- After reading something, try to summarize the important concepts. This will help create a mental framework into which to fit the problems you will be working on.

- We will setup an anonymous feedback page on the website. Please use it to improve the class.