M427K
ADVANCED CALCULUS FOR APPLICATIONS I
UNIQUE #57055
FALL 2013

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Lectures: MWF, 12:00pm - 1:00pm, CAL 100
Discussion sessions: TTh, 5:00pm - 6:00pm, PHR 2.108

Course webpage: www.ma.utexas.edu/users/bfroese/M427K

Required text: Boyce and DiPrima, Elementary Differential Equations and Boundary Value Problems (Ninth Edition)

Prerequisite: One of M408D, M408L, M408S or the equivalent, with a grade of at least C-.

Course description. M427K is a basic course in ordinary and partial differential equations, with Fourier series. It should be taken before most other upper division, applied mathematics courses. Geared to an audience primarily consisting of engineering and science students, the course aims to teach the basic techniques for solving differential equations which arise in applications. The approach is problem-oriented and not particularly theoretical. Most of the time is devoted to first and second order ordinary differential equations with an introduction to Laplace transformations, Fourier series, and partial differential equations at the end.

Grading. Your grade will be computed according to the following breakdown:

Homework and quizzes: 20%
Two midterm exams: 40%
Final exam: 40%

Your final score will be rounded to the nearest integer and assigned a letter grade using a scheme at least as generous as the following:
A: 92-100, A-: 90-91, B+: 88-89, B: 82-87, B-: 80-81,
C+: 78-79, C: 67-77, C-: 65-66, D+: 63-64, D: 53-62, D-: 51-52, F: <50.

Homework and quizzes. Weekly problem sets will be posted on the course webpage; these will consist of two sections.

Part A will consist of problems that must be handed in at the beginning of the discussion session on the specified due date, which will typically be a Tuesday. These assignments will be graded for correctness, completeness, and clarity of the solutions. Solutions should be written out with sufficient detail, clarity, and legibility that they can be easily understand by an average student in this class. No late assignments will be accepted.

Part B of the problem set does not need to be handed in. However, there will occasionally be short quizzes in the lectures or discussion sessions. Quizzes will consist of one or more problems from the most recently completed problem set. The quiz mark will be based 50% on completion and 50% on your solutions. Missed quizzes cannot be made up.

Each homework assignment and quiz will receive the same weight towards your final grade. Homework assignments and quizzes will count for 20% of your final grade. There will be no opportunity to make up late assignments or missed quizzes. However, the lowest two scores from this category will be discarded.

Exams. There will be two midterm exams held during the class time. These will take place on Friday October 4 and and Friday November 8. Each midterm will count for 20% of your final grade. Missed midterms cannot be made up. However, your lowest midterm score will be replaced with your final exam score if this has the effect of raising your final grade.

The final exam will be held on Tuesday December 17 from 9:00am - 12:00pm. This exam will be cumulative and will count for 40% of your final grade.

A valid photo ID must be available to present upon request at all exams. For the final exam, you are permitted to bring a single 8.5"x11" double-sided sheet of notes. These notes must be written in your own handwriting; no typing or photocopying is permitted. No other notes, books, calculators, phones, or electronic devices are permitted during exams.

E-mail guidelines. When e-mailing the instructor or TA, please include the class name "M427K" in the subject line and sign the e-mail with your full name. This will make it easier for us to provide a prompt and helpful response.

If you need to make an appointment with me outside of my regular office hours, please suggest several time periods when you will be available during the following 2-3 days.

Special needs. Any student with a documented disability who requires academic accommodations should contact Services for Students with Disabilities (SSD) at (512) 471-6259 (voice) or 1-866-329-3986 (video phone).

Academic dishonesty. Each student in this course is expected to abide by the University of Texas Honor Code. All work you submit in this course, whether homework

or exams, must be your own. Working together on assignments is allowed and encouraged. However, the assignment you turn in must be your own work; simply copying someone else's solutions is not acceptable. Instances of cheating will be dealt with severely.

Religious holy days. By UT Austin policy, you must notify me of your pending absence at least fourteen days prior to the date of observance of a religious holy day. If you must miss a class, an examination, a work assignment, or a project in order to observe a religious holy day, I will give you an opportunity to complete the missed work within a reasonable time after the absence.

Deadlines for dropping a course.

- September 3: Last day of the official add/drop period.
- September 13: Last day to drop a class for a possible refund.
- November 5: Last day an undergraduate student may, with the deans approval, drop a class except for urgent and substantiated, nonacademic reasons.

Tentative course schedule. Tentatively, we will work through the textbook according to the following schedule. However, as the semester progresses, this timeline may be altered to improve the learning experience.

Week of	**Monday**	**Wednesday**	**Friday**
Aug. 26	no class	1.1	1.2, 1.3
Sept. 2	no class	2.1	2.2
Sept. 9	2.3, 2.4	2.5	2.6
Sept. 16	2.7	3.1, 3.2	3.3
Sept. 23	3.4	3.5	3.6
Sept. 30	3.7	review	**Midterm #1**
Oct. 7	4.1	4.2	5.2
Oct. 14	5.3	5.4	5.5
Oct. 21	6.1, 6.2	6.3	6.4
Oct. 28	6.5	6.6	7.4
Nov. 4	7.5	review	**Midterm #2**
Nov. 11	7.6	10.1	10.2
Nov. 18	10.2	10.3, 10.4	10.5
Nov. 25	10.6	10.7, 10.8	no class
Dec. 2	extra/review	extra/review	review
Final exam: Tuesday December 17, 9:00am - 12:00pm			