Math 427K Advanced Calculus for Applications I
Fall 2012   Section 55965

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Tentative office hours: Wed 1-2pm, other time by appointment.
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Recommended book: Differential Equations by Polking, Boggess and Arnold. This is not required. However, it is a well-written text which you might use to supplement your reading.
Prerequisite: one of 408D, M408L or M408S, with a grade of at least C-.
Course content/Topics: A differential equation is an equation relating the derivatives of an unknown function to each other. The goal of this course is to learn various techniques for finding such unknown functions and using these techniques to solve physical problems. After studying first and second- order equations, we look at the Laplace transform methods, then eigenvector methods for solving systems of linear DE’s, and then at Fourier series techniques for partial differential equations.
Course objectives: Your goal in this course, as in every course that you ever take, should be a complete mastery of the material. Anything less is aspiring to mediocrity and doing yourself a disservice. I expect you to read the section in the text that we will be covering before we meet. Come to class ready to ask questions about what you do not yet know. After class, re-read the text and your notes, and do exercises to complete your mastery of the material.
Grading policy:

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The maximum of Plans I and II will be your grade. The letter grade will be assigned as follows: A(90–100%), B(80–89%), C(70–79%), D(60–69%), F(0–59%).

Exam Schedule:

Exam1   Exam2   Final
Oct 5 Friday  Nov 16 Friday  Dec 14 Friday

Exams: The exams will be given during the regular class time. Final will be held on Dec 14 from 2-5pm. Calculators will NOT be allowed on the exams and final. Important: Remember to bring your UT student ID with you for all exams!

Homework: Homeworks will be due every Tuesday at the start of class. No late homework will be accepted for ANY reason! However the two lowest homeworks will be dropped before computing the average.
Quizzes: Short quizzes will be given every Thursday (with a few exceptions) near the end of class. No make-ups will be given for quizzes but the lowest 3 scores will be dropped.
Tentative Schedule:
Week 1-3  Chapters 1-2 (possibly excluding 1.4, 2.3, 2.5, 2.7, 2.9)
Week 4-5  Chapter 3 (excluding 3.7-3.8)
Week 6  Review and Exam 1
Week 7-8  Chapters 4-5
Week 9  Chapter 6
Week 10-11  Chapter 7
Week 12  Review and Exam 2
Week 13-14  Chapter 10
Week 15  Review

Computer Accounts: A computer account on the Mathematics Department network can be obtained in the Undergraduate Computer Lab, RLM 7.122.

Make-up Policy: There are no make-ups for homework or quizzes for ANY reason. If you have a valid reason (medical or family emergency) for missing an exam, then I will give you an alternative exam, preferably before the scheduled exam. Missing an exam without a valid reason will result in a score of zero for that exam. To be excused you must notify me (acknowledged email or written) prior to date of absence if such notification is feasible.

Quantitative Reasoning: This course carries the Quantitative Reasoning flag. Quantitative Reasoning courses are designed to equip you with skills that are necessary for understanding the types of quantitative arguments you will regularly encounter in your adult and professional life. You should therefore expect a substantial portion of your grade to come from your use of quantitative skills to analyze real-world problems.

Documented Disability Statement: 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). Faculty are not required to provide accommodations without an official accommodation letter from SSD.

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.

Copyright policy: The handouts used in this course are copyrighted. By "handouts," I mean all materials generated for this class, which include but are not limited to syllabi, quizzes, exams, in-class materials, review sheets, and additional problems sets. Because these materials are copyrighted, you do not have the right to copy the handouts, unless I expressly grant permission.

University of Texas Honor Code: The core values of The University of Texas at Austin are learning, discovery, freedom, leadership, individual opportunity, and responsibility. Each member of the university is expected to uphold these values through integrity, honesty, trust, fairness, and respect toward peers and community.

Note: The instructor reserves the right to make any changes he considers academically advisable. It is your responsibility to attend classes and keep track of the proceedings.