Math 5410 - 1  Introduction to Ordinary Differential Equations  Sept. 7, 2017

Homepage:  http://www.math.utah.edu/~treiberg/M5410.html

Instructor:  A. Treibergs, JWB 224, 581 - 8350.
Office Hours: M, T, F 11:45 - 12:45 (tent.) & by appt.
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Prerequisites:  "C" or better in (MATH 2250 OR MATH 2280). Experience with
higher level courses and computation is recommended.

Texts:  Morris Hirsch, Stephen Smale & Robert Devaney, Differential
Equations, Dynamical Systems, and an Introduction to Chaos 3d ed,

Grading

Homework:  To be assigned weekly. Homework will be due Fridays and will be
collected in class. Papers turned into my mailbox in the math mail
room (JWB 228) by 4:00 PM Fridays before I leave will be regarded
as being turned in on time. Homework that is late will receive
half credit.

Term Project:  Students will write a short mathematical paper on an approved
topic of their choice. This paper will allow students to explore
in some detail a mathematical theory or a model from science or
engineering beyond what's covered by lectures. Students will meet
individually with the instructor to discuss an their proposed
project for approval. Written project outlines will be due Oct.20.
Completed projects are due the last day, Dec. 6.

Exams:  Exams will be closed book except that you will be allowed
to bring a "cheat sheet," an 8.5" x 11" piece of paper with
notes on both sides. Your text, notes, homework papers,
calculators laptops, tablets, phones, text messaging devices,
and other books will not be allowed.

Midterms:  There will be two in-class one-hour midterm exams on Wednesdays
Sept. 20 and Nov. 1.

Final Exam:  Mon., Dec. 11, 1:00 - 3:00 PM. Half of the final will be
devoted to material covered after the second midterm exam. The
other half will be comprehensive. Students must take the final
to pass the course.

Course grade:  Two midterms 40% + Project 10% + HW 20% + final 30%.

Withdrawals:  Last day to register is Aug.25. Last day to drop class is Sept.1.
Until Oct. 20 you can withdraw from class with no approval at all.
After that date you must petition your dean's office to be allowed
to withdraw.

Objectives:  Cover the theory of linear and nonlinear ordinary differential
equations and dynamical systems, introduce initial-value problems
and behavior of solutions, discusses existence-uniqueness-
perturbations-continuous dependence of solution on initial
conditions, and introduce nonlinear dynamical systems with
applications.

Tentative Course Schedule:
Part I:  Linear systems: Chapters 2 - 6
Part II:  Fundamentals: Chapters 7, 8, 17
Part III:  Nonlinear equations and dynamical systems: Chapters 9 -15

ADA:  The University of Utah seeks to provide equal access to
its programs, services and activities for people with
disabilities. If you will need accommodations in this
class, reasonable prior notice needs to be given the
Center for Disability Services, 162 Olpin Union Building,
581-5020 (V/TDD). CDS will work with you and the
instructor to make arrangements for accommodations. All
information in this course can be made available in
alternate format with prior notification to the Center for
Faculty and Student Responsibilities:
All students are expected to maintain professional behavior in the classroom setting, according to the Student Code, spelled out in the Student handbook. Students have specific rights in the classroom as detailed in Article III of the Code. The Code also specifies proscribed conduct (Article XI) that involves cheating on tests, plagiarism and/or collusion, as well as fraud, theft, etc. Students should read the Code carefully and know they are responsible for the content. According to the Faculty Rules and Regulations, it is faculty responsibility to enforce responsible classroom behaviors, beginning with verbal warnings and progressing to dismissal from class and a failing grade. Students have the right to appeal such action to the Student Behavior Committee. Faculty must strive in the classroom to maintain a climate conducive to thinking and learning (PPM 6-316). Students have a right to support and assistance from the University in maintaining a climate conducive to thinking and learning (PPM 6-400).

Note:
The syllabus is not a binding legal contract. It may be modified by the instructor when the student is given reasonable notice of the modification.