Math 5410 – 1   Introduction to Ordinary Differential Equations   Sept. 7, 2017
Math 6840 – 1   M, T, W, F, 2:00 – 2:50 PM in LS 101.

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.
                 E–mail: treiberg@math.utah.edu

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,
                 Academic Press, Waltham, 2013. ISBN 978–0–12–382010–5

Grading
   Homework: To be assigned weekly. Homework will be due Fridays and will be
                 collected n 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

Disability Services
                    (www.hr.utah.edu/oeo/ada/guide/faculty/)

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 conductive 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.