

Differential Equations
MthSc 208 section 3

August 1996

Class meets at 10:10 MWF and 9:30 on Thursday in room M-101,

* If the instructor is late, you are expected to wait 15 minutes before leaving.

Teacher: D. D. Warner - office Martin O-203(656-524)

Office Hours 1:00-2:30 MWF and by appointment.

Objective: Construct solutions of elementary differential equation problems, learn how these problems arise in applications, and study how solutions vary as problem parameters change.

We will use Hewlett Packard HP 48-GX(or HP48-G) programmable calculators available at Radio Shack or the bookstore. Although you are not required to purchase any equipment except the textbook and the calculator, one of the two manuals listed below is recommended.

We are particularly interested in developing skills to read (study) the textbook. Not all material will be presented in class. We will expect you to acquire some of the material on your own. Our responsibility is to point out where you should concentrate your study and to help pace your progress through the course. **Homework checking and class discussion** will force you to proceed on a steady pace rather than concentrating study just before tests.

SYLLABUS FOR MATH SCIENCES 208

Differential Equations by Blanchard, Devaney and Hall (PWS, 1996, preliminary edition)

Differential Equations using the HP-48G/GX by T. G. Proctor (Charles River Media, Inc.)

HP-48G/GX Calculator Enhancement for Science and Engineering Mathematics by Donald R. LaTorre (Saunders College Publishing.) The last two are the manuals mentioned above.

Chapter 1- First Order Differential Equations -----	4 weeks
Chapter 2- First Order Systems -----	2 weeks
Chapter 3- Linear Systems-----	4 weeks
Chapter 5- Forcing and Resonance-----	2 weeks
Chapter 8- Laplace Transforms-----	2 weeks
Chapter 4- Nonlinear Systems-----	1 week

Class attendance is required. Spotty attendance almost always results in a lower grade !

Four in-class tests 40% of grade, two team projects 20% of grade, Home work: 15% of grade, and Final Exam: 25% of grade (exam given on Univ Schedule).

One hour tests are scheduled as follows: September 12, October 3, October 31, and November 21. Final exam is on Monday, December 9 at 1:00 PM.

Calculators can be used on tests, and grading will be on a 10 point scale.

No make-up tests will be given for unexcused absences. The final exam will serve as the make-up test for an excused absence. The University policy on academic dishonesty will be strictly enforced.

Prerequisites:

Demonstrated calculus proficiency by satisfactory completion of MthSc 206.

Calculator Skills: Be able to graph $Y = F(X)$, $a \leq X \leq b$

Calculator skills to be acquired during semester: Use built-in initial value problem solution grapher and direction field grapher. Learn to use program for Euler's method and two dimensional direction field grapher. Use keystrokes for solutions of linear systems and matrix eigenvalues and eigenvectors.