MATH 411 - Summer 1998
Ordinary Differential Equations
http://www.math.psu.edu/alm/math411.html

MTRF - 11:10 - 12:35, 106 Osmond
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This course will be divided in two parts. First I will discuss linear differential equations. The main topics will be

- Properties of linear systems
- Constant coefficient problems
- Analytic coefficient problems
- Problems with singularities

Then, in the second part, I will cover qualitative aspects of dynamical systems, e.g., phase portraits, stability, bifurcation, etc. This will be based on the book by Strogatz.

Prerequisite:
Math 230 or 231 and Math 250 or 251.

Textbook(required):
Earl A. Coddington and Robert Carlson, *Linear ordinary differential equations*, SIAM, 1997.

Optional books:
Steven H. Strogatz, *Nonlinear dynamics and chaos, with applications to physics, biology, chemistry, and engineering*, Addison-Wesley Pub., 1994.
D.W. Jordan and P. Smith, *Nonlinear ordinary differential equations*, Oxford University Press, 1987.

All the above books are on reserved in the Math library.

Homeworks: I will assign several homeworks throughout this course, probably twice a week. The homeworks will be posted in the web page for this course (see the top of this syllabus).

Grades: The final grade will be based on the homework assignments (70%), and two take-home exams (30%), each covering one half of the course. Your grades will be posted in the course's web page.