San José State University
Department of Mathematics

Fall 2005

Math 133A: Ordinary Differential Equations

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Prerequisite: Math 32 (with a grade C– or better) or instructor consent.

Office hours: MW 10:30-11:30 and 2:30-3:30, F 10:30-11:30

Homework: Weekly homework assignments will be collected and graded.

It is essential that you do all the homework problems on time. The late homework policy is: one day late – 50% penalty, two days late – no credit.

Tests: There will be two midterms and occasional short quizzes based on the homework. The exam schedule is:

Midterm 1: September 28
Midterm 2: November 2
Final exam: December 15, 9:45-12:00

There will be no make-up tests.

Grading policy: Homework 10%, Quizzes 10%, Midterms 40%, Final 40%
Course outline: First-order differential equations (CHAPTER 1, sec. 1.1–1.6, 1.9). First-order systems (CHAPTER 2, sec. 2.1–2.4). Linear systems, including second-order linear equations (CHAPTER 3, sec. 3.1–3.7). Forcing and resonance (CHAPTER 4, sec. 4.1–4.3). Nonlinear systems (CHAPTER 5, sec. 5.1). Laplace transforms (CHAPTER 6, sec. 6.1–6.6).

Main goals: Our main goal will be to understand the behavior of solutions of differential equations from a dynamical systems point of view. This means that instead of focusing on specialized tricks and techniques for solving differential equations (although we will learn some of those as well), we will study qualitative properties of solutions.

Therefore, this class will be different from the standard MATH 133A course taught at SJSU.

More generally, my goal will be to help you to further develop the ability for logical, exact, and clear reasoning.

Calculator policy: I will not require you to have calculators or to use them in class. Moreover, calculators will not be permitted on exams.

Technology: I will use MATLAB and other ODE software, including the package that comes with the book.

Participation: During class please feel free to stop me at any time and ask questions. I encourage and greatly appreciate students’ participation.

Feedback: I appreciate constructive feedback which you can give me via the anonymous feedback form on the class web page, by email, or in person.

Academic integrity: A priori, I consider all my students honest and mature individuals. I therefore expect of them to abide by the University policy on academic integrity (see the web site for the link).