

**Ordinary differential equations**

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**Text.** Required: *Elementary Differential Equations* by Boyce and Di Prima, 9th ed., 2008.

**Prerequisite.** You must have earned a grade of C or better in MATH 241 and 544 or equivalent courses to be approved by the instructor. This pre-requisite is essential.

**Overview.** After a refresher of the computational material of MATH 242 (chapters 1, 2, 3). we will focus on more advanced techniques for solving and interpreting the behavior of solutions of differential equations. Topics will be selected from chapters 4, 5, 7, and 9.

**Learning Outcomes.** Students will understand the concepts of and be able to solve problems drawn from first and second order equations, linear systems, and qualitative behavior of nonlinear systems.

**Grades.** Three major tests will be given, each worth 100 points, on Thursday, 9 February (day 10); Thursday 15 March (day 18); and Thursday 12 April (day 26). The final exam is scheduled for Tues, 1 May at 2 pm and is comprehensive. Your percentage will be used to replace your lowest exam score if this helps you. At least seven ten-point quizzes will be given; the six highest scores will be counted. **No make-ups will be given for quizzes or exams** A total of 510 points may be earned:

Exams	300	(three at 100 pts each)
Quizzes	60	(best six)
Final	150	

Letter grades will be assigned according to the scale 85–100 A, 75–84 B, 65–74 C, 55–64 D, below 55 F on a percentage basis. Note that the deadline to drop this course without a grade of WF is Monday, 27 February; you should have a pretty good idea before then how you are doing.

**Collaboration.** One of the goals of this course is to learn how to communicate mathematical ideas. You will be expected to work with one another in class and I expect that you will do so on homework. However, you will have to take the exams individually, so don't get too dependent upon one another. According to the USC Student Handbook code of student academic responsibility, "**the first law of academic life is intellectual honesty.**" I expect this of all of you. If you are ever in the least bit uncertain about the ground-rules, ask for clarification!

**Attendance.** Regular attendance is crucial for success in this course. This class has 29 meetings; university policy states that if more than 10% of the meetings are missed, whether excused or unexcused, then the instructor may impose a penalty. I intend that this be a very rich and varied class, often with non-lecture activities. If you feel that a class is nothing more than a series of exams and quizzes, with attendance optional, then this is not the class for you.