

SYRACUSE UNIVERSITY

MAT 414, SPRING 2013 - INTRODUCTION TO ORDINARY DIFFERENTIAL EQUATIONS

Instructor: Dr. G. C. Verchota, Professor of Mathematics, Room 229A Physics Building.

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Location: Class meets in Room 300 Carnegie, 3:45pm – 5:05pm, Monday and Wednesday.

Office Hours: Monday 8-9:30am Tuesday 8:30-10:00am

Textbook: *Elementary Differential Equations and Boundary Value Problems*, 9th edition, William E. Boyce and Richard C. DiPrima.

Course Description: We will cover parts of Chapters 1-3 and 5-7, including: the analytic and qualitative aspects of first-order differential equations (linear and nonlinear), second-order linear equations, power series solutions, and Laplace transforms. The book is a standard, well-written text; you are strongly encouraged to read the new material before class.

Mathematics Prerequisites: 12 Credits of Calculus or equivalent. Students are expected to be able to:

- take partial derivatives; set up and evaluate integrals; do integration by parts; and work with elementary linear algebra.

Important Note: Credit will not be given for both Mat 414 and Mat 485.

Grading: Your grade will be based on your scores on two midterm tests, a final exam and quizzes. Each midterm test will each count 25%, the final exam 25% and the quizzes 25% toward your grade. The dates for exams are listed on the day-by-day syllabus below.

Quizzes: Quizzes will be based on the most recent material and homework and will be given most days. Homework is listed for each section below. It is imperative that you attempt all assigned problems. The best way to learn this material is to attend class, read the notes and do problems. Time will be allotted to answering questions on the homework at the beginning of the class period before the quiz.

Makeups: There will be no makeups. For an absence to be excused, you must let your instructor know as soon as possible, preferably before the exam or quiz. If not before, you need to provide evidence that the absence was unavoidable - for example a doctor's note. Some quizzes will be dropped at the end of the term.

Attendance: You are required to attend class. In particular a poor quiz grade will affect your course grade. You are responsible for any announcements made in class. If you have an emergency and miss class be sure to get the day's notes from another student.

Academic Integrity: The Syracuse University Academic Integrity Policy holds students accountable for the integrity of the work they submit. Students should be familiar with the Policy and know that it is their responsibility to learn about instructor and general academic expectations with regard to proper citation of sources in written work. The policy also governs the integrity of work submitted in exams and assignments as well as the veracity of signatures on attendance sheets and other verifications of participation in class activities. Serious sanctions can result from academic dishonesty of any sort.

Disabilities: Students who may need academic accommodations due to a disability are encouraged to discuss their needs with the instructor at the beginning of the semester. In order to obtain authorized accommodations, students should be registered with the Office of Disability Services (ODS), 804 University Avenue, Room-309, 315-443-4498 and have an updated accommodation letter for the instructor. Accommodations and related support services such as exam administration are not provided retroactively and must be requested in advance.

Day-by-Day Syllabus: The following is an approximation to what will be covered in class each day. We may get a little ahead or even behind this schedule.

M	1/14	1.1 1.2	1, 2, 3, 7, 13, 15-20, 22, 29 3, 5, 7, 9, 15, 19
W	1/16	1.3	2, 4, 6, 10, 18, 20, 26
W	1/23	2.1	2, 4, 6, 20, 23, 35, 36
M	1/28	2.2	13, 15, 18
W	1/30	2.4	2, 8, 15, 21, 28
M	2/4	2.5	3, 9, 16
W	2/6	2.6	4, 8, 21, 27
M	2/11	2.8	1, 5, 9, 14
W	2/13		Questions Exam I (55 Minutes)
M	2/18	3.1 3.2	2, 10, 15, 22, 28 4, 5, 11, 14, 16, 18, 23, 24
W	2/20	3.3	3, 7, 12, 15, 18, 21
M	2/25	3.4	2, 5, 7, 9, 11, 18
W	2/27	3.5	2, 5, 9, 14, 25, 36
M	3/4	3.6	2, 3, 6, 8, 13, 15, 19
W	3/6	5.1	1, 2, 4, 6, 8, 12, 14, 15, 16, 20, 24, 26
M	3/18	5.2	1, 4, 6, 7, 20, 22
W	3/20	5.3	1, 4, 6, 8
M	3/25	Sing. Pts 5.7	2, 4, 5, 6
W	3/27		Questions Exam II (55 Minutes)
M	4/1	6.1	3, 6, 7, 9, 18, 19, 22, 24
W	4/3	6.2	2, 4, 8, 10, 15, 17, 20, 22, 26, 30, 34
M	4/8	6.3	3, 5, 6, 8, 12, 13, 15
W	4/10	7.1	1, 3, 8, 10
M	4/15	7.2	2, 9, 11, 13, 16, 23, 24
W	4/17	7.3	1, 2, 3, 6, 10, 17, 21, 24
M	4/22	7.4	
W	4/24	7.5	2, 4, 6, 10, 12, 14, 18
M	4/29		Review
Tues	5/7		Final Exam