

MAT 514 — FALL 2007 — COURSE SYLLABUS
INTRODUCTION TO ORDINARY DIFFERENTIAL EQUATIONS

Instructor: Professor Graham Leuschke
Office: 206C Carnegie
Phone: 443-1469
email: gjleusch@math.syr.edu or graham@leuschke.org
IM: leuschkeg on AIM; graham_leuschke on Yahoo!; leuschke@gmail.com

Time & Place: MW 2:15–3:35, Carnegie 306
Office hours: TBA. Also by appointment, and any time my door is open
Webpage: <http://www.leuschke.org/Teaching/Math514Fall2007>

Prerequisites: 12 credit hours of Calculus or equivalent. Credit will not be given for both MAT 514 and 485. 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.

Textbook: *Elementary Differential Equations and Boundary Value Problems*, 8th ed., William E. Boyce and Richard C. DiPrima. We will cover parts of Chapters 1–3 and 5–6, 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, and very well-written; you are strongly encouraged to read the new material before class.

Calculators: You are allowed to use a graphing calculator on all assignments, quizzes, and exams for this class, including the final. Symbolic calculators (e.g., the TI-89/92) may not be used.

Grading:

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| First test: | Wednesday, October 3 | 20% |
| Second test: | Wednesday, November 7 | 20% |
| Final exam: | Wednesday, December 12, time and place TBA | 35% |
| Homework and quizzes: | alternate Wednesdays | 25% |

Tests will be given in lecture. The final exam will be cumulative. There will be no makeups for the test or final exam. If you have an excused absence for one of the tests, your grade on the relevant portion of the final will be used.

Homework: The key to success in this course is to master the homework. Homework will be assigned at each class and collected weekly at the beginning of class, usually on Wednesdays. **Late homework will not be accepted.** A portion of the homework problems will be graded. You are encouraged to discuss the homework problems with your classmates and to work together, but the work you submit must be your own. The exam problems will be very similar to those on the homework.

Quizzes: There will be a quiz given in class about every other week. Your lowest quiz score will be dropped in figuring your grade.

Attendance: You are expected to attend every lecture, recitation, quiz, exam, and the final exam. If you miss a class, it is your responsibility to get lecture notes for that class from another student. You are also responsible for any announcements about changes to the course schedule or exam schedule, or other administrative announcements that were made in that class. You are **highly encouraged** to ask questions and be vocal in class.

Note: Students who may need special consideration because of any sort of disability should make an appointment to see me during office hours. This should be done as soon as possible.

Tips for Success:

- (1) It is absolutely essential that you understand how to solve all the assigned problems. Once you understand how to solve a problem, write your solution down neatly and in full detail with explanations that make your reasoning clear.
- (2) Don't fall behind! The material builds on itself, so you must be on top of the material at every stage.
- (3) Come to office hours.
- (4) Form study groups with your classmates.
- (5) Questions in class are strongly encouraged.
- (6) You can be successful in this course! Don't be discouraged if you find some of the material difficult. Be persistent and patient.