

MATH 246H SECTION 0101 (Fall 2001)
**ORDINARY DIFFERENTIAL EQUATIONS
FOR SCIENTISTS AND ENGINEERS**

MTH 0106 TuTh 11-12:15

Instructor

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Office Hours: Tu 3:30-5, We 2-3 (or by appointment)

Texts

W.E. Boyce and R.C. DiPrima, *Elementary Differential Equations*, Seventh Edition, John Wiley and Sons, Inc (2001); ISBN 0-471-31998-8.

K.R. Coombes, B.R. Hunt, R.L. Lipsman, J.E. Osborn, and G.J. Stuck, *Differential Equations with Matlab*, John Wiley and Sons, Inc (2000); ISBN 0-471-32227-X.

Syllabus

- §1. Introduction: 1-1-1.2 (1 lecture).
- §2. First Order Differential Equations: 2.1-2.7 (5 lectures).
- §8. Numerical Methods: 8.1-8.3 (2 lectures).
- §3. Second Order Linear Equations: 3.1-3.8 (6 lectures).
- §6. The Laplace Transform: 6.1-6.4 (3 lectures).
- §7. Systems of First Order Linear Equations: 7.1-7.8 (6 lectures)..
- §9. Nonlinear Differential Equations and Stability: 9.1-9.5 (3 lectures).

Grading Policy

EXAM 1 (20%): October 16, §§1, 2, 8, 3.1-3.3.

EXAM 2 (20%): November 29, §§3, 6, 7.

FINAL (30%): Friday Dec 14, 8-10AM, §§1, 2, 3, 6, 7, 8, 9.

QUIZZES (10%): There will be a 10/15 min quiz about every two weeks, unless stated otherwise, which will cover the material developed in the previous three or four classes. Quizzes will be (a slight modification of) homework problems.

MATLAB (15%): There will be four Matlab assignments (Problem Sets B, C, D, and F). Students are encouraged to work in groups of three students but must hand in an individual project report. These assignments are mandatory to pass this course. The Problem Set A, which familiarizes students with Matlab, will be collected on Th Sep 13 but not graded. It is the students' responsibility to read §§1-4 of the Matlab book since this elementary material will not be discussed in class but is necessary to solve Problem Set A. All students should apply for WAM or GLUE computer accounts right away.

HOMEWORK (5%): Homeworks will be assigned each class. One problem will be graded per week.