Mathematics 212
SYLLABUS
Spring 2006

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Office Hour: To be announced weekly on the class conference

Course Content: Mathematics 212 is a first course on ordinary differential equations. The course includes appropriate topics involving first-order differential equations, linear differential equations, linear systems, and series solutions.

Course Objectives: At the end of the course, the students should be able to solve various ordinary differential equations (o.d.e.) by various methods; be familiar with and be able to apply the main points in the general theory of o.d.e.s; and be able to investigate some qualitative aspects of a given o.d.e. even if it cannot be solved explicitly.

Textbook:
Dennis Zill, *A First Course in Differential Equations: The Classical Fifth Edition*

Reference Books (available at the library):
George Simmons, *Differential Equations with Applications and Historical Notes*, Second Edition, 1991
Morris Kline, Mathematical Thought from Ancient to Modern Times, 1972
Abramovitz and Stegun, *Handbook of Mathematical Functions*, 1970
Vladimir I. Arnol'd, *Ordinary Differential Equations*, Third Edition, 1992

Attendance: Students are expected to attend all classes and are responsible for all material covered in class as well as any changes made in the schedule regarding homework and tests. Class attendance and consistent preparation for class will determine the success or failure the student realizes in this course.

Written Work: Thoughts are expressed by sentences. Your written work must be in complete sentences. Use mathematical symbols wherever appropriate; do not use a lot of words. Pay attention to how the problems are worked out in the textbook. Your work should be neat and legible. It is common practice to rewrite solutions once they are found.

Homework: Homework will be assigned on a regular basis in class, but will not be collected. It is important that you complete most of the problems assigned. Handouts with additional problems and information will be used to supplement the textbook.

Tests: There will be three tests and a final exam. Each test will have an in-class part and a take-home part. Details will be given prior to the tests. Your textbook and your own notes may be used on some sections of the tests. Other sections may require that you use

no notes and that you complete the segment in one sitting. Help from another person may not be sought or used on either section.

Grading:

3 tests @ 250 points each	750
Final Exam	250
Total points	1000

The following scale will be used to assign letter grades:

A:	900 – 1000	points
B:	800 – 899	points
C:	700 - 799	points
D:	600 - 699	points
F:	Below 600	points

Grades of A-, B+, B-, C+, C-, D+ may be assigned for sums of points near the above cutoffs in total points.

HONOR CODE: THE HONOR CODE OF OXFORD COLLEGE APPLIES TO ALL WORK SUBMITTED FOR CREDIT. ALL SUCH WORK WILL BE PLEDGED TO BE YOURS AND YOURS ALONE. THIS IS THE CASE WHEN YOU PLACE YOUR NAME ON WORK SUBMITTED.

Tentative Outline of Topics:

The following chapters from the textbook will be covered (subject to adjustments): (more detailed outline of each period will be posted regularly on the class conference)

Introduction: Basic Definitions (Syllabus, Chapter 1)

Chapter 2 First Order Differential Equations

Chapter 3 Applications of First-Order Differential Equations

Chapter 4 Linear Differential Equations of Higher-Order

Chapter 6 Differential Equations with Variable Coefficients

Chapter 8 Systems of Linear Differential Equations