Math 212 – Differential Equations
Spring 2007

Instructor: Dr. Kevin D. Yeomans; http://userwww.service.emory.edu/~kyeoman/

Office Hours: 2 to 4 p.m. daily

Course Content: First and second-order ordinary differential equations, systems of ordinary differential equations, power series solutions, applications.

Course Objectives: Primary emphasis will be placed on developing techniques for the solution of differential equations. Some time will be spent on theory and applications.

Textbook: *A First Course in Differential Equations with Modeling Applications* by Dennis G. Zill, 8th Edition.

Attendance: Be present and on time!

Problem Sets: Due at the BEGINNING of class on the date indicated on the assignments. Homework problems from each section that we cover in the text will be provided during class time. The problem sets will consist primarily of these assigned homework problems. Additionally, I may add additional questions from other sources. **You are allowed to receive help from anyone/anything to complete these assignments.** This means that others are allowed to explain concepts/techniques to you, and you can compare/verify your work with other students. However, you must be actively engaged in the process of completing the assigned problems. Simply copying the work of another student and submitting it as your own will result in zero credit. **All work is expected to be professionally submitted!**

Tests: May include both in-class and take home portions. This will be determined at a later date. The Oxford Honor Code applies to all tests and are **individual effort** on all portions.

Grades: Determined by your performance in the following areas:

Problem Sets	25%
Tests	50%
Final Exam	25%
Total	100%

Grades may include plus/minus marks. Maximum grade lines are 90%, 80%, 70%, and 60% for an A,B,C, and D respectively.

Final Exam: Comprehensive with no exemptions.

Expectations: They're high! I expect that you will read the text (several times) and attempt all the assigned homework (and more). Written responses to questions should be **grammatically correct**! I welcome your comments, criticisms, and suggestions. Please feel free to stop by my office or e-mail me with any concerns or questions that you may have.

Date	Reading	Topic
Jan 18	1.1	Definitions and Terminology
	1.2	Initial-Value Problems
Jan 23	1.3	DE's as Mathematical Models
Jan 25	2.1	Solution Curves
Jan 30	2.2	Separable Variables
Feb 1	2.3	Linear Equations
Feb 6	2.4	Exact Equations
Feb 8	2.5	Solutions by Substitutions
Feb 13		**Test #1**
Feb 15	3.1	Linear Models
Feb 20	3.2	Nonlinear Models
Feb 22	3.3	Modeling with Systems of DEs
Feb 27	4.1	Theory of Linear DEs
Mar 1	4.2	Reduction of Order
Mar 6	4.3	Homogeneous Linear Equations
Mar 8	4.4	Undetermined Coefficients
Mar 20	4.6	Variation of Parameters
Mar 22	4.7	Cauchy-Euler Equation
Mar 27		**Test #2**
Mar 29	5.1	Linear Models: IVPs
Apr 3	6.1	Series Solutions - Ordinary Points
Apr 5	6.2	Series Solutions - Singular Points
Apr 10	6.2	Series Solutions - Singular Points
Apr 12		Appendix II
Apr 17	8.1	Theory of Linear Systems
Apr 19	8.2	Homogeneous Linear Systems
Apr 24	8.2	Homogeneous Linear Systems
Apr 26		**Test #3**
May 1		Course Review & Evaluation