Course Syllabus

420: MATH 277 - 01
Ordinary Differential Equations
Dr. Goutziers
Fall 2002

Room:	HIRC 120AB	
Time:	MWF	3:00 - 3:50 pm
Office:	Fitzelle Hall 230	
Phones:	Office:	(607) 436-3658
	Department Office:	(607) 436-3708
E-Mail:	GoutziCJ@oneonta.edu	
Web Site:	http://www.oneonta.edu/faculty/GoutziCJ	
Office Hours:	**M 8:00 am W 2:00 pm** **R 8:00 am F 1:00 pm**	
Textbook:	Differential Equations • *Authors:* Paul Blanchard, Robert L. Devaney, Glen R. Hall • *Edition:* Second • *Publisher:* Brooks/Cole • *Year of Publication:* 2002 • *ISBN:* 0-534-38514-1	
Symbolic Software:	Maple, Release 8	
Numerical Software:	The CD included with the textbook	

College Catalog Description:
MATH 277 Ordinary Differential Equations. The course offers an overview of qualitative, quantitative, and numerical techniques for solving ordinary differential equations, with an emphasis on mathematical modeling. Topics include separation of variables, slope fields, the phase line and equilibrium solutions, bifurcations, linear systems and phase plane analysis, the harmonic oscillator - forcing and resonance, Laplace transforms. *(LA) Prerequisite:* 8 s.h. calculus.

Course Goals and Objectives:
MATH 277 provides a working knowledge of ordinary differential equations. The goal of the course is to familiarize the student with the qualitative, numeric and analytic techniques, required to obtain an understanding of the solutions. The objective is to engage the students through collaboration in small groups on the solution of problems designed to illustrate the material. A computer algebra system will be used to support the computational processes involved.

To achieve these goals, students will, upon completion of homework assignments, quizzes, and exams:

1. use a problem-solving approach to investigate and understand the mathematical content;

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2. demonstrate an understanding of the principles and techniques of applying mathematics to other disciplines and to real world problems;
3. understand and apply numerical computations and extend them to algebraic expressions;
4. use mathematical modeling to solve problems from fields such as the natural sciences, social sciences, business, and engineering;
5. use computer software to explore and solve problems involving differential equations.

Course content:
Separation of variables; Slope fields; Equilibrium solutions; Bifurcations; First order systems; Euler's method; Eigenvalues; Resonance; Linearization and equilibrium point analysis; Laplace transforms.

Methods of Evaluation and Grading Policies:
There will be three tests and approximately four quizzes during the course of the semester. Tests and quizzes will be announced on my Web site at least four days in advance. A comprehensive final exam is scheduled for Wednesday, December 18, 11:00 am - 1:30 pm, in HIRC 120AB. Homework will be assigned daily and is due at the beginning of the next class meeting. Quizzes may be completed by groups of at most three students; homework, tests and final exams are an individual responsibility. All submitted homework should include a coversheet indicating the course, the date, the assignment number and the student's name. Homework assignments, including quiz and test announcements, and coversheets are published on my Web site and updated daily. Homework grades depend on the percentage of assignments submitted.

00 - 50%	no homework credit
51 - 80%	half homework credit
81 - 100%	full homework credit

Submitted homework does not have to be perfect, but should show "reasonable attempt". Merely copying the problems does of course not constitute reasonable attempt.

Course grades are computed according to the following:

Tests:	40%	90 - 100 A	77 - 80 B-	64 - 67 D+
Quizzes:	20%	87 - 90 A-	74 - 77 C+	60 - 64 D
Final Exam:	20%	84 - 87 B+	70 - 74 C	57 - 60 D-
Homework:	20%	80 - 84 B	67 - 60 C-	0 - 57 E

Attendance Policy:
It is the student's obligation to take the tests and the final exam at the scheduled times and allow for on time submitting of homework assignments.

Make-up Test and Late Assignment Policy:
Make-ups will not be given. If a student misses a test, her/his grade for that test will be considered equal to her/his grade on the final exam. Late homework cannot be accepted.