

Math 374

Differential Equations

Class Policies

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Fall 2008

TuTh: 2:00-3:15, YR 126

Section: 001

Office Hours: TuTh 1-2

Prerequisites: MATH 274

Catalog Description: Theory and application of linear ordinary differential equations. Solutions of non-linear ordinary differential equations of the first order.

Learning Objectives:

1. To understand the basic terminology of differential equations, including the notions of solutions, linear equations, and the order of an equation.
2. To understand the various methods of solving first order ordinary differential equations.
3. To be able to use an understanding of first order equations to solve realistic problems involving first order equations.
4. To understand the basic theorems that guarantee the existence and uniqueness of solutions to first order ordinary differential equations.
5. To understand the various methods for solving homogeneous and nonhomogeneous second order linear differential equations with constant coefficients, including notions of linear independence and the Wronskian.
6. To be able to use an understanding of second order equations with constant coefficients to solve realistic problems involving these equations.
7. To understand how power series methods can be used to solve ordinary differential equations; to be able to use these methods to solve the common equations of mathematical physics, including Bessel's equation.
8. To understand how linear systems of differential equations can be written in matrix form.

Academic Integrity: The nature of higher mathematics requires that students adhere to accepted standards of academic integrity. Violations of academic integrity include cheating, plagiarism, falsification and fabrication, complicity in academic dishonesty, personal misrepresentation and proxy, bribes, favors and threats. Cheating is a serious offense that will have grave consequences for your academic life.

Students who violate these standards will either fail the course outright or, at the instructor's discretion, may merely receive a zero on any assignment for which the student receives inappropriate assistance.

Instructional Material: The primary required text is *A First Course in Differential Equations* (8th edition) by Dennis Zill.

Methods of Instruction: We shall use lectures, class discussion, group work, and laboratory work.

Attendance: Attendance is expected; you should only miss a class for a compelling reason. If you do miss a class, you are responsible for any material that you miss, including any homework assignments given in that class.

Homework: The only way to learn mathematics is by doing problems, problems, and more problems. In addition to the labs, homework will be assigned on a regular basis, and will form a substantial portion of your final grade. Expect to spend a substantial amount of time studying and working on homework. The general rule is two to three hours outside class for each hour inside; this translates to about 6-9 hours of homework and personal study per week.

Some of the homework assignments will be traditional pencil and paper assignments; others will be online assignments. Details of the online component will be given in class. No distinction in grading will be drawn between these two types of assignments.

Quizzes: Occasional unannounced quizzes may be given. For purposes of determining the final grade, they shall be treated as a homework assignment.

Midterms: There shall be three midterm examinations, tentatively scheduled for October 2, November 6, and December 4. Attendance is expected. Make-up exams shall only be given for compelling reasons; all excuses are subject to verification.

Final Exam: The Final Exam is scheduled for **Friday, December 19 from 12:30 p.m.- 2:30 p.m.** The final exam will not be rescheduled. Attendance is expected; a make-up exam will not be given without an extremely compelling reason. The final exam shall be comprehensive.

Final Grade: Final grades shall be determined by the following method:

Midterms	40%	Final	30%	Homework/Quizzes	30%
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Note the weight of the final.

The last day to withdraw from the course with a grade of "W" is November 12.

Help: If you have difficulty completing a homework assignment, do not hesitate to ask for help, either from your classmates or from me. You are welcome to stop by my office, for whatever reason, and at whatever time, even if there are no office hours scheduled then. However, I have many other commitments and can sometimes be difficult to reach. Feel free to call me (410-704-4757) or email me (moleary@towson.edu) at any time to set up an appointment.

Web Page: My web page at <http://www.towson.edu/~moleary> has copies of all of the old exams that I have given while at Towson.