Syllabus for MA 361: Differential Equation
Spring 2008

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Office Hours: 9:00a.m.-10:00a.m. MWThF, and by appointment.

Note: I am available to help students whenever I am in my office; please feel free to drop by.

Course Information:

Class meets MWRF at 11:00a.m.-11:50a.m. in WS 2901 for lecture and discussion.

Textbook:

A first course in differential Equations with modeling applications, 8th Edition by Dennis G. Zill, Brooks/Cole (2005).

The following chapters and some additional material will be covered.

Chapter 1- Introduction to Differential Equations

Chapter 2- First-Order Differential Equations

Chapter 3- Modeling with First-Order Differential Equations

Chapter 4- Higher-Order Differential Equations

Chapter 7- The Laplace Transform

Chapter 8- Systems of Linear First-Order Differential Equations

Chapter 9- Numerical Solution of Ordinary Differential Equations

Software:

Maple can be loaded to your ThinkPad for free at the Help Desk in LRC.

Course Description:

Differential equations (DEs) are the fundamental models of mathematical physics, and, as such, are fundamental in engineering and the physical sciences.

In this course we study the most important DEs, and we discuss several different solution techniques (theoretical as well as numerical). An integral part of the course will be using computer software (Mathematica) together with the techniques learned in class to produce useful solutions or approximate solutions.

Attendance:

Attendance and participation are crucial to your success in this course. I will be counting on you to be in class and to be prepared. If you are unable to attend a class due to an illness or personal loss, you should contact me as soon as possible. Students are limited to five unexcused absences. For more than five unexcused absences, I reserve the right of deducting points from your total participation points.

Grading Policy:

The final grade will be based on the homework, worksheet, quizzes, three midterm exams and one final exam weighted as follows:

Class Participation, Homework, Worksheet and Quizzes	150 points
Midterm Exams (4)	600 ($4\times$ 150) points
Final Exam	250 points
Total	1000 points

Your scores on all assignments will be combined (according to the above weights) into a single percentage P. Your letter grade will then be determined as follows:

$\geq 93\%$	A
$92 - 88\%$	A-
$87 - 84\%$	B+
$83 - 80\%$	B
$79 - 77\%$	B-
$76 - 74\%$	C+
$73 - 70\%$	C
$65 - 69\%$	D+
$60 - 64\%$	D
$< 60\%$	F

Homework, Worksheet and Quizzes:

Homework assignments and worksheet will be given, some of which will be collected and graded. Homework and worksheet are one of the most crucial parts of the class. It is expected that you will complete them to the best of your ability.

A number of in-class quizzes will be given during the semester. The content of the quizzes will be closely related to the assigned homework problems. It is to your advantage, then, to carefully complete each homework problem and ask questions about those you do not fully understand.

Exams:

Four semester exams and a comprehensive final exam will be given. All exams may include calculator and non-calculator sections.

Help: Help is available from many different sources, including:

1. I am available to help you during posted office hours and whenever I am in my office.
2. Math Lab.

Disability Services:

If you have a need for disability-related accommodations or services, please inform the Coordinator of Disability Services in the Disability Services Office by: coming into the office at 2001 C. B. Hedgcock; calling 227-1700; or e-mailing disserv@nmu.edu. Reasonable and effective accommodations and services will be provided to students if requests are made in a timely manner, with appropriate documentation, in accordance with federal, state, and University guidelines.

Succeeding in Precalculus and other college courses

The following excerpt is from the article Teaching at the University Level by Steven Zucker (Johns Hopkins University), which appeared in the Notices of the American Mathematical Society, August 1996. What follows is what an entering freshman should hear about the academic side of university life.

1. You are no longer in high school. The great majority of you, not having done so already, will have to discard high school notions of teaching and learning and replace them by university-level notions. This may be difficult, but it must happen sooner or later, so sooner is better. Our goal is more than just getting you to reproduce what was told to you in the classroom.

2. Expect to have material covered at two to three times the pace of high school. Above that, we aim for greater command of the material, especially the ability to apply what you have learned to new situations (when relevant).

3. Lecture time is at a premium, so it must be used efficiently. You cannot be "taught" everything in the classroom. It is your responsibility to learn the material. Most of this learning must take place outside the classroom. You should be willing to put in two hours outside of the classroom for each hour of class.

4. The instructor's job is primarily to provide a framework, with some of the particulars, to guide you in doing your learning of the concepts and methods that comprise the course. It is not to "program" you with isolated facts and problem types nor to monitor your progress.

5. You are expected to read the textbook for comprehension. It gives the detailed account of the material of the course. It also contains many examples of problems worked out, and these should be used to supplement those you see in the lecture. The textbook is not a novel, so the reading must often be slow-going and careful. However, there is the clear advantage that you can read it at your own pace. Use pencil and paper to work through the material and to fill in omitted steps.