Math 3120 Syllabus – Fall 2011

DIFFERENTIAL EQUATIONS I

**Instructor Information**

**Instructor:** Dr. Wandi Ding  
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**Office Hours:** MW 9:00-11:00am, MWF 3:00-4:00pm or by appointment

**Course Information**


**Class Schedule:** MWF 12:40-1:35 pm in KOM 202

**Prerequisites:** MATH 1920, preferable MATH 3110.

**Content:** Three credits. First-Order differential equations, mathematical modeling and numerical methods involving first-order equations, linear second-order equations, systems and phase plane analysis and Laplace transforms.

**Objectives:**

- Learn to recognize and classify various types of ordinary differential equations.
- Get used to thinking about and working with functions as variables.
- Understand the qualitative nature of solutions to certain classes of differential equations, with emphasis on exponential growth, oscillations and equilibrium solutions.
- Learn to solve certain types of elementary differential equations analytically, with an emphasis on first order differential equations and higher order linear differential equations.
- Develop skills in formulating differential equation models to address problems arising in engineering, physics, biology and other applied areas.
- Gain exposure to a few numerical and graphical tools for studying and solving differential equations.
- To utilize a student’s background in Calculus in solving differential equations.
- To illustrate several of the many applications of differential equations.
Requirements: In general, you are expected to

1. Attend class lectures;
2. Come to class prepared (this includes completing homework in a timely manner and bringing your textbook);
3. Read the textbook and the lecture notes thoroughly and solve the assigned problems;
4. Ask question in class when you are unsure of any concept or unclear on any assigned problem;
5. Come to my office for additional assistance as necessary;
6. Take all exams on the day they are scheduled;
7. Learn a programming language: Maple or Matlab or Mathematica.

Grading Policy:

Homework: 120 pts
Projects: 50 pts
Exam 1: 100 pts
Exam 2: 100 pts
Exam 3: 100 pts
Final Exam: 130 pts

540-600 A, 480-539 B, 420-479 C, 360-419 D, Below 360 F.

Final Exam: Monday, December 12, 12:30 - 2:30 p.m.

Additional Information

Drop/Withdrawal Policy

Please note the Drop Policy and Withdrawal Procedures as they are stated in the Fall 2011 Registration Guide. The last day to drop this course without a grade is September 9. The last day to drop this course with a "W" is Nov. 2. A grade of “I” will be given only in accordance with University Policy.

No grade of “W” will be assigned after the official drop date except in situations involving extreme extenuating circumstances beyond the student’s control. In particular, a “W” will not be granted merely because the student is failing. Students should be aware that missing the official drop date and thereby receiving an “F” can have ramifications on financial aid.

Lottery Scholarships
Do you have a lottery scholarship? To retain Tennessee Education Lottery Scholarship eligibility, you must earn a cumulative TELS GPA of 2.75 after 24 and 48 attempted hours and a cumulative TELS GPA of 3.0 thereafter. You may qualify with a 2.75 cumulative GPA after 72 attempted hours (and subsequent semesters), if you are enrolled full-time and maintain a semester GPA of at least 3.0. A grade of C, D, F, or I in this class may negatively impact TELS eligibility. Dropping a class after 14 days may also impact eligibility; if you withdraw from this class and it results in an enrollment status of less than full time, you may lose eligibility for your lottery scholarship. Lottery recipients are eligible to receive the scholarship for a maximum of five years from the date of initial enrollment, or until a bachelor degree is earned; students who first received the lottery scholarship in Fall 2009 or later will additionally be limited to 120 TELS attempted hours. For additional Lottery rules, please refer to your Lottery Statement of Understanding form, review lottery requirements on the web at http://scholarships.web.mtsu.edu/telsconteligibility.htm or contact the Financial Aid Office at 898-2830.

**Disability Assistance**

If you have a disability that may require assistance or accommodation, or you have questions related to any accommodations for testing, note takers, readers, etc., speak with me as soon as possible. Students must also contact the Office of Disabled Students Services (898-2783) with questions about scheduling such services.