Math 3280 Differential Equations with Linear Algebra, 4 credits Spring 2017

**Instructor:** Laura Zimmermann  
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**Graduate Teaching Assistant:** Jingxia Liu  
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**Office hrs:** T 2-3pm and W 9-10am

**Meeting Times:**  
Lecture sec 5: MWThF 10:00-10:50am, EduE 40  
Lab sec 6: Tu 10:00-10:50am, MonH 209

Lecture sec 13: MWThF 3:00-3:50pm, SCC 21  
Lab sec 14: Tu 3:00-3:50pm, MonH 209

**Prerequisites:** A grade of at least C- in Math 1297 or 1597

**Text:** *Differential Equations and Linear Algebra*, Edwards and Penny.  

**Course Description:** This course covers first, second, and higher order equations; series methods; Laplace transforms; systems; software; modeling applications; introduction to vectors; matrix algebra, eigenvalues. The material is mostly covered in Chapters 1-7 and 9-10 with some sections omitted. Some supplemental material, not included in the text, may occasionally be presented in lecture.

**Learning Outcomes:**  
1. Demonstrate understanding of fundamental mathematical concepts and techniques.  
2. Apply mathematical techniques appropriately.  
3. Recognize how mathematics can be applied to some real life situations.  
4. Analyze information in a more effective way.

**Calculators:** A calculator may be useful at times. However, **graphing calculators will NOT be allowed on any of the exams.** You must show your work (thought process) for all problems, thus answers arrived at by calculator alone will be granted very few, if any, points. Sharing a calculator during an exam, or using a phone, tablet, or computer as a calculator during an exam, will be considered cheating and result in an immediate zero.

**Cell phones/laptops/etc:** Cell phones/ipods/laptops/etc are prohibited during class. Please inform me of any circumstance that may need special consideration.
**Homework:** Homework problems and due dates will be posted on my website.

1. On the top of all assignments, you must have
   - **Your Name**
   - **Math 3280 sec # 5/6 or 13/14**
   - **Instr: Laura**
   - **HW #**

2. Cut off all frilly edges and staple all papers turned in together.

3. Write neatly in pencil. Completely erase all mistakes, do not scribble it out. If you choose to use pen, be sure to keep your homework neat and white out any mistakes.

4. Do the problems in order with the answer circled and enough space between problems so that they are distinguishable from each other.

5. Include all work. Answers without justification will be assigned little (if any) points. Read the question carefully, and don’t forget to answer any part of it.

6. Every assigned problem must be completed. If you do not understand a problem, get help from the instructor, a friend, or a tutor before it is due. Cooperation on assignments is encouraged, but copied assignments will not be tolerated and will receive a score of zero.

7. Your homework assignments will be **due on Mondays** unless noted (In week 2, homework will be due on Wednesday). You must give your homework to the instructor either in class, her office, or under her office door. There is no alternative method for turning in your homework. **Homework turned in late will NOT receive credit.**

8. Write on one side of the paper only. You may use the back (clean) side of scratch paper.

These are the *minimum* standards for acceptable homework. Points will be removed for violations of the above rules; regardless of whether or not your answer is correct. Every problem is providing you with a chance of showing me that you understand the concepts we are discussing in class.

**Labs:** We will have computer lab assignments using the software package Mathematica. The lab assignments, examples, and due dates will be posted on the above website. The Graduate Teaching Assistant for the lab section will help you during the reserved lab class period. Cooperation is encouraged, but each student must do their own work on their own computer. Cheating will not be tolerated and will earn a score of zero.

On the top of all lab assignments, you must have
   - **Your Name**
   - **Math 3280 sec #5/6 or 13/14**
   - **TA:**
   - **Lab #**
Labs should be saved somewhere (jump drive, emailed to yourself, UMD Server, etc). Labs will be printed and turned in to your TA, or you can turn it in to Laura and she will give it to the TA. **All parts of your lab should be labeled.** This can be done within Mathematica. It is ok to print 2 pages onto 1 page and to print on the front and back of the paper. Labs will be **due on Wednesdays** unless noted. **Labs turned in late will NOT receive credit.**

**Exams and Final:** There will be four exams and one cumulative final exam given during the semester. I will announce the dates at least a week ahead of time in class and post them on my website.

The exams are tentatively scheduled for Thursday February 9th, Thursday March 2nd, Thursday March 30th, and Thursday April 20th during your regular class time.

The cumulative final for sec 5/6 is Monday May 1st from 10-11:55am. The cumulative final for sec 13/14 is Wednesday May 3rd from 2-3:55pm.

If an exam will be missed, it is the student’s responsibility to contact the instructor as soon as possible by email, phone, or in office hours. The only way to make up an exam is with a documented (signed note from a doctor, lawyer, etc on the day of the quiz or exam) excused absence. Examples include subpoenas, jury duty, military duty, religious observances, illness, bereavement for immediate family, and NCAA varsity intercollegiate athletics. For more information, please see [http://www.d.umn.edu/vcaa/ExcusedAbsence.html](http://www.d.umn.edu/vcaa/ExcusedAbsence.html). Students who miss a quiz or exam and do not have an excused absence will earn a score of zero on that quiz or exam.

**Grading:**
- Homework 20%
- Labs 10%
- Exams (4@12.5%) 50%
- Comprehensive Final 20%

**Grading Scale:**
- 93-100% A
- 83-86% B
- 73-76% C
- 60-66% D
- 90-92% A-
- 80-82% B-
- 70-72% C-
- Below 60% F
- 87-89% B+
- 77-79% C+
- 67-69% D+

I will use egradebook to keep track of your scores. There is a link on my website. Please let me know as soon as possible if you find an error. Keep all homework, labs, and exams as proof of your scores.

**Student Academic Integrity Policy:** Academic dishonesty tarnishes UMD’s reputation and discredits the accomplishments of students. Academic dishonesty is regarded as a serious offense by all members of the academic community. UMD’s Student Academic Integrity Policy can be found at [http://www.d.umn.edu/conduct/integrity/](http://www.d.umn.edu/conduct/integrity/)

Any cheating is taken seriously and will be dealt with appropriately!
**Student Conduct Code:** Appropriate classroom conduct promotes an environment of academic achievement and integrity. Disruptive classroom behavior that substantially or repeatedly interrupts either the instructor's ability to teach, or student learning, is prohibited. This includes the use of cell phones, playing games on electronic devices, etc. Students are expected to adhere to Board of Regents Policy: *Student Conduct Code.* For more information, please see [http://www.d.umn.edu/conduct](http://www.d.umn.edu/conduct)

**Mental Health Issue:** As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, homesickness, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student’s ability to participate in daily activities. University of Minnesota Duluth services are available to assist you with addressing these and other concerns you may be experiencing. You can learn more about the broad range of confidential mental health services available on campus via the UMD Health Service Counseling website at [http://www.d.umn.edu/hlthserv/counseling/](http://www.d.umn.edu/hlthserv/counseling/)

**Special Needs:** It is the policy and practice of the University of Minnesota Duluth to create inclusive learning environments for all students, including students with disabilities. If there are aspects of this course that result in barriers to your inclusion or your ability to meet course requirements – such as time limited exams, inaccessible web content, or the use of non-captioned videos – please notify the instructor as soon as possible. You are also encouraged to contact the Office of Disability Resources to discuss and arrange reasonable accommodations. Please call 218-726-6130 or visit the DR website at [www.d.umn.edu/access](http://www.d.umn.edu/access) for more information.