

MATH 251 Section S11N01

Differential Equations

Jan - Apr 2011



Time & Location: Mon & Wed 10:00-11:30, Fri 9:30-10:30 in Bldg 360 Rm 323

Instructor: Glen Pugh
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Office Hours: Mon 11:30-12:30 & 3:30-4:30, Wed 3:45-4:45, Fri 10:30-11:30, or by appointment

webpage: <http://web.viu.ca/pughg/Spring2011/math251S11N01>

This page will be updated weekly with announcements, handouts, homework assignments and quiz/test solutions.

Prerequisite: Min. "C+" in MATH 101 or MATH 122 and min. "C+" in MATH 141 or MATH 241

Text: *A First Course in Differential Equations with Modeling Applications, ninth edition* by Dennis G. Zill

Available at the Bookstore for \$206.95, or as an eBook from the publisher starting at \$94.95 (see <http://www.nelson.com>, search ISBN 9780495108245)

Course Outline: This course covers the theory and application of differential equations with an emphasis on modeling problems arising in engineering and the physical sciences.. Topics covered and corresponding sections from the text are

- ◆ Introduction: 1.1-1.3
- ◆ First Order Differential Equations: 2.1-2.6
- ◆ Modeling with First Order Differential Equations: 3.1-3.3
- ◆ Higher Order Differential Equations: 4.1-4.4, 4.6, 4.8
- ◆ Modeling with Higher Order Differential Equations: 5.1-5.3
- ◆ The Laplace Transform: 7.1-7.6
- ◆ Systems of Linear First Order Differential Equations: 8.1-8.3
- ◆ Numerical Solutions of Ordinary Differential Equations: 9.1-9.2

Homework: Weekly reading and homework assignments from the textbook will be posted on the course website.

Homework will be collected for grading every two to three weeks on Fridays: see the course website for the schedule of dates. There will be five homework assignments each worth 3% of your final grade. Feel free to collaborate on homework assignments, however your solutions must be written up independently. In cases of suspected plagiarism a zero grade will be assigned. Late assignments will not be accepted.

Labs: Four computer laboratory assignments will be given during the term. The labs will have you examine in greater detail some of the concepts presented in class, and will make use of the Maple computational software package. A written component of each lab will be collected on Fridays at the same time as the first four homework assignments. As with the homework, you are encouraged to collaborate with your class colleagues, but written submissions must be prepared independently. Again, cases of suspected plagiarism will receive a zero grade and late labs will not be accepted. Each lab is worth 3% of your final grade.

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- Tests:** We will have two 75 minute class tests given on the following **Wednesdays: Feb 9 and Mar 30**. Your best test is worth 17% of your final grade while your lower test is worth 16%.
- No make-up tests will be given, but if you miss a class test for a good reason allowances may be made. Documentation must be provided to explain your absence: doctor's note in the case of illness, death certificate in the case of death in the family, police report in the case of car accident, etc. No exceptions.
- If you are ill on test day and you elect to write the test anyway, your grade will stand.
- Final Exam:** There will be a comprehensive final exam in April worth 40% of your grade. The exam period is Apr 14-28 2011. Travel plans should not be made until the final exam schedule is released, which is one month before exams begin. **In no event will the final exam be rescheduled to accommodate travel plans.**
- Grading Summary:**
- | | |
|------------------|-----|
| Assignments (5): | 15% |
| Labs (4): | 12% |
| Class Tests (2): | 33% |
| Final Exam: | 40% |
- Grade Review:** If you do not agree with the grade received on a test, homework or lab, you may submit your paper for regrading within three days of the date it was returned to you. In such cases, the entire paper will be regraded.
- There is no possibility of end-of-term extra credit assignments or supplemental exams to improve final grades.
- Grading Scale:**
- | | | | |
|------------|-----------|-----------|----------|
| A+ 90-100% | B+ 76-79% | C+ 64-67% | D 50-54% |
| A 85-89% | B 72-75% | C 60-63% | F 0-49% |
| A- 80-84% | B- 68-71% | C- 55-59% | |
- Attendance:** Attendance will not be taken, however you are encouraged to attend all lectures. If you miss class, read the textbook sections covered and borrow notes from a classmate. I do not lend my class notes.
- Student email:** Ensure that you have an active email address listed in your student record and that you check it regularly. I occasionally email the class with reminders or notices.
- Classroom Environment:** I like the classroom environment to be relaxed yet respectful. I encourage you to ask questions, discuss the topics at hand, and quietly listen while your colleagues ask questions or offer comments. Please don't sit and chat if you don't feel like being in class on a particular day. Arrive on time, and if you must leave class early for an appointment, please advise me ahead of time so that disruption is minimized.
- Academic Misconduct:** Incidents of cheating or other academic misconduct carry severe consequences and will be dealt with seriously. Refer to VIU Policy 99.01 and Procedure 99.01.001.
- Calculators & Translators:** Calculators and translators may be used for quizzes, tests and the final exam.
- Cell Phones & Music Players:** Turn off and put away before class. Cell phones may NOT be used as clocks or calculators during tests.
- Formula Sheets:** Formula sheets may be used for tests and the final exam. I will say more on this later.