

# MATH 251 Section S19N01

## Differential Equations

### Jan – Apr 2019



VANCOUVER ISLAND  
UNIVERSITY

**Time & Location:** Mon & Wed 10:00-11:30 in Bldg 200 Rm 105  
Fri 12:30-1:30 in Bldg 370 Rm 111

**Instructor:** Glen Pugh  
glen.pugh@viu.ca (This is by far the best way to reach me!)  
Bldg 359 Rm 201  
(250)753-3245 ext. 2752

**Office Hours:** Mon 11:30-12:30, Wed 2:30-3:30, Fri 10:30-11:30 or by appointment.

I am available at office hours to answer questions and help with homework. Come prepared to show me your attempted homework, and have your class notes organized.

**webpage:** <https://web.viu.ca/pughg/Spring2019/math251S19N01>

This page will be updated weekly with announcements, handouts, homework assignments and 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, 11th Edition, Metric Version* by Dennis G. Zill, available at the Campus Store for \$217.95, or as an eBook from the publisher for about \$122. For the eBook go to

<https://www.nelsonbrain.com/shop/isbn/9780357245576>

**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: 3.1–3.2
- ◆ Higher Order Differential Equations: 4.1–4.4, 4.6, 4.7
- ◆ Modeling with Higher Order Differential Equations: 5.1–5.3
- ◆ The Laplace Transform: 7.1–7.5
- ◆ Systems of Linear First Order Differential Equations: 8.1–8.3
- ◆ Numerical Solutions of Ordinary Differential Equations: 9.1–9.2

**Homework:** Eight to ten problem sets will be assigned and collected for grading. These problem sets are worth 20% of your final grade. In addition, from the textbook I will assign supplementary practice exercises which should be completed to refine your understanding. The supplementary problems will not be graded, however they may appear on the term tests or final exam. Answers to odd numbered textbook problems can be found in the back of the text.

Collaborative problem solving on homework assignments is permitted (encouraged even!), however your handed-in solutions must be written up independently. Evidence of plagiarism on an assignment will result in a zero grade or other measures (see **Academic Misconduct** below).

## Math 251 – Differential Equations

- Tests:** There will be two 80 minute class tests given on **Wednesday: Feb 13** and **Wednesday Apr 3**. Each test is worth 20% of your final grade.  
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.  
Test absence due to religious observance may be accommodated, however you must notify me in advance of the test and provide full details of the observance in question.  
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 17-30 2019. Travel plans should not be made until the final exam schedule is released, which is at least one month before exams begin. **In no event will the final exam be rescheduled to accommodate travel plans.**
- Grading Summary:**
- |              |     |
|--------------|-----|
| Class Tests: | 40% |
| Homework:    | 20% |
| Final Exam:  | 40% |
- Grade Review:** If you do not agree with the grade received on a test, 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% |            |
- Extra Help:** In addition to help during office hours, you can get extra help from the tutors in the Math Learning Centre located in Bldg 360 Rm 303. The schedule will be posted on the room door after the first week of classes.
- 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 nor will I reteach material during office hours.
- 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:** A basic scientific non-programmable, non-graphing calculator may be used for class tests and the final exam. (The Staples BD-107i, available at Staples for about \$8, is plenty). Sharing calculators during quizzes and tests is not permitted.
- Phones:** Cell phones must be turned off and put away before tests and may NOT be used as clocks or calculators.
- Formula Sheets:** Formula sheets may be used for tests and the final exam. I will say more on this later.