

MATHEMATICS 201 Section [A01 - CRN: 30510]
COURSE OUTLINE May, 2015

INSTRUCTOR

Peter Williamson (pwilliam@uvic.ca) SSM A527. Time of office hours to be decided.

TEXT

A First Course in Differential Equations by Dennis G. Zill (Eighth edition, 2005, Ninth edition, 2009, Tenth edition, 2013). Used copies of either edition may be available from the U.Vic Bookstore (at 75% of the new price), or from SubText, the student-run bookstore in the Student Union Building (where the person offering their book for sale sets their own price). Copies of the complete solutions manual, have been placed in the Reserve Reading Room of the Library. They are available on a two-hour loan basis.

PREREQUISITES

Math 101. Note: Credit will be granted for only one of 201, 202. If all three of 200, 201 and 202 are taken, credit will be given only for 200 and 201.

TOPICS COVERED

First order equations; linear second order equations, and two-dimensional systems of linear equations with constant coefficients; elementary qualitative methods; numerical Euler and Runge-Kutta methods; Laplace transform; power series solutions about ordinary points; applications.

TEXT SECTIONS

Chapter	Sections
1	1 - 2
2	1 - 5
3	1 - 2
4	1 - 4, 6 - 7, 10 (Example 1 and 2 only)
5	1
7	1 - 5
6	1, 2
8	1, 2
9	1,2 if time permits

Handwritten note: 4.9 in old editions (with an arrow pointing to the '10' in the text for Chapter 4)

LECTURES

There are three hours of lectures each week. This course will require several more hours each week outside of classroom time.

TUTORIALS

Math 201 has a one-hour weekly tutorial component, which you should regard as the fourth hour of instruction for which you have paid. The first tutorial session takes place in the second week of class. You will hand in homework at the tutorials, and write both of the midterms there as well. The problem-solving techniques and methods presented in the tutorial will be precisely the same type that will be required for the final examination. The topics to be discussed in each tutorial are indicated on the COURSE SCHEDULE. It is important that you attend the tutorials as some topics and techniques may ONLY be discussed in the tutorial. You should plan on 100% attendance at the lectures and the tutorials, as well as completing all homework, to maximize your likelihood of passing the course.

EXAMINATIONS

There will be a three hour final examination scheduled by the University and two midterms held in your tutorial in the weeks of June 1 - 5 and July 6 - 10, 2015. Each midterm counts toward 15% of your final grade.

Assignments will be handed in regularly, as indicated on the Course Schedule, and graded. There will be a list of Required Problems from the textbook which you work through, checking your answers, but do not hand in. Off-schedule Final Examinations are not given except in accordance with the regulations on *Illness, Accident or Family Affliction at Exam Time* in the U.Vic. Calendar. Deferred status is granted only for Final Examinations. If you have a legitimate reason for missing a midterm (with documentation), then your performance on the rest of the term's work, not including the final examination, will be used to compute a numerical score for the missed midterm. There will be no make-up midterms. Your grade will be determined by assigning 30% credit to the midterms, 10% to the assignments and 60% credit to the final examination.

Visit <http://www.uvic.ca/science/math-statistics/undergraduate/course-policies/> for important Math and Stats course policy information.

MATHEMATICS 201 REQUIRED EXERCISES SUMMER 2015
(Zill, Differential Equations with Modeling Applications, 8th Edition)

Chapter 1

1.1 3, 5, 9, 13, 15, 19, 27(a, b), 35, 37, 43, 45, 53, 54

1.2 1, 3, 9, 13 – 31(odd-numbered)

Chapter 2

2.1 15(a, b), 19, 21, 23, 27, 38, 39

2.2 5, 9, 19, 23, 27, 45

2.3 3, 5, 7, 9, 15, 17, 27, 29, 33, 45, 47

2.4 3, 7, 11, 17, 21, 23, 27, 31, 33, 37, 43

2.5 3, 5, 13, 17, 23, 31, 34

Chapter 3

3.1 5, 9, 11, 13, 19, 27, 31, 33, 41

3.2 1, 3, 9, 15

Chapter 4

4.1 3, 5, 7, 9, 13 (b, c, d), 15, 17, 23, 25, 29, 31, 35, 39

4.2 1, 7, 9, 11, 17, 19

4.3 3, 5, 11, 17, 19, 23, 25, 29, 37, 43, 45, 47, 49

4.4 5, 7, 11, 13, 19, 33, 41, 43

4.6 3, 7, 15, 21

4.7 1, 3, 5, 7, 11, 15, 29, 31, 33

4.9 1, 3, 7, 11, 19

Chapter 5

5.1 23, 29, 31, 33, 39, 41, 47, 49, 53, Challenge problem: 57

Chapter 7

7.1 3, 7, 11, 17 – 37(odd), Challenge problem: 46

7.2 5, 9, 13 – 19(odd), 25, 33, 35, 37

7.3 15, 17, 21, 23, 27, 31, 41, 47, 59

7.4 5, 11, 17, 41, 49, 57

7.5 5, 13

Chapter 6

6.1 13, 15, 17, 29

Chapter 8

8.1 11, 16, 21, 25

8.2 1, 4, 6, 19, 21, 33, 37

Chapter 9

9.1 1, 3, 11, 13, 17

9.2 1, 17

MATHEMATICS 201 REQUIRED EXERCISES SUMMER 2015*
(Zill, Differential Equations with Modeling Applications, 9th Edition)

Chapter 1

1.1 3, 5, 9, 13, 15, 19, 27, 29, 39, 41, 47, 49, 57, 58

1.2 1, 3, 9, 13 – 31(odd-numbered)

Chapter 2

2.1 15(a)(b), 19, 21, 23, 27, 38, 40, 41

2.2 5, 9, 19, 23, 27, 47

2.3 3, 5, 7, 9, 15, 17, 27, 29, 33, 45, 47

2.4 3, 7, 11, 17, 21, 23, 27, 31, 33, 37, 43

2.5 3, 5, 13, 17, 23, 31, 34

Chapter 3

3.1 5, 9, 11, 13, 21, 29, 33, 35, 43

3.2 1, 3, 9, 15

Chapter 4

4.1 3, 5, 7, 9, 13 (b)(c)(d), 15, 17, 23, 25, 29, 31, 35, 39

4.2 1, 7, 9, 11, 17, 19

4.3 3, 5, 11, 17, 19, 23, 25, 29, 37, 43, 45, 47, 49

4.4 5, 7, 11, 13, 19, 33, 41, 43

4.6 3, 7, 15, 21

4.7 1, 3, 5, 7, 11, 15, 29, 31, 33

4.9 1, 3, 7, 11, 19

Chapter 5

5.1 23, 29, 31, 33, 39, 41, 47, 49, 53, Challenge problem: 57

Chapter 7

7.1 3, 7, 11, 17 – 37(odd), Challenge problem: 46

7.2 5, 9, 13 – 19(odd), 25, 33, 35, 37

7.3 15, 17, 21, 23, 27, 31, 41, 47, 59

7.4 5, 11, 17, 41, 49, 57

7.5 5, 13

Chapter 6

6.1 13, 15, 17, 29

Chapter 8

8.1 11, 16, 21, 25

8.2 1, 4, 6, 19, 21, 33, 37

Chapter 9

9.1 1, 3, 11, 13, 17

9.2 1, 17

MATHEMATICS 201 REQUIRED EXERCISES SUMMER 2015
(Zill, Differential Equations with Modeling Applications, 10th Edition)

Chapter 1

- 1.1 3, 5, 9, 13, 15, 19, 27, 29, 39, 41, 47, 49, 57, 58
- 1.2 1, 3, 9, 13 – 31(odd-numbered)

Chapter 2

- 2.1 15(a)(b), 19, 21, 23, 27, 38, 40, 41
- 2.2 5, 9, 19, 23, 27, 47
- 2.3 3, 5, 7, 9, 15, 17, 27, 29, 33, 45, 47
- 2.4 3, 7, 11, 17, 21, 23, 27, 31, 33, 37, 43
- 2.5 3, 5, 13, 17, 23, 31, 34

Chapter 3

- 3.1 5, 9, 11, 13, 21, 29, 33, 35, 43
- 3.2 1, 3, 9, 15

Chapter 4

- 4.1 3, 5, 7, 9, 13 (b)(c)(d), 15, 17, 23, 25, 29, 31, 35, 39
- 4.2 1, 7, 9, 11, 17, 19
- 4.3 3, 5, 11, 17, 19, 23, 25, 29, 37, 43, 45, 47, 49
- 4.4 5, 7, 11, 13, 19, 33, 41, 43
- 4.6 3, 7, 15, 21
- 4.7 1, 3, 5, 7, 11, 15, 29, 31, 33
- 4.10 1, 3, 7, 11, 19

Chapter 5

- 5.1 23, 29, 31, 33, 39, 41, 47, 49, 53

Chapter 7

- 7.1 3, 7, 11, 17 – 37(odd),
- 7.2 5, 9, 13 – 19(odd), 25, 33, 35, 37
- 7.3 15, 17, 21, 23, 27, 31, 41, 47, 59
- 7.4 5, 11, 17, 41, 49, 57
- 7.5 5, 7

Chapter 6

- 6.1 13, 15, 17, 29

Chapter 8

- 8.1 11, 16, 21, 25
- 8.2 1, 4, 6, 19, 21, 33, 37

Chapter 9

- 9.1 1, 3, 11, 13, 17
- 9.2 1, 17

MATHEMATICS 201 APPROXIMATE COURSE SCHEDULE

Department of Mathematics and Statistics

University of Victoria

May, 2015

Week	From - To	Holiday	Lecture (Zill 8 th /9 th ed.)	Hwk Due?	Tutorial
1	May 4 - 8		1.1-2.1	No	None
2	May 11 - 15		2.2-4	No	1.1-2.1
3	May 18 - 22	M	2.4-5	Yes	2.1-3
4	May 25 - 29		3.1	No	2.4-5
5	June 1 - 5		3.2, 4.1	No	TEST #1
6	June 8 - 12		4.2-3	Yes	3.1-2
7	June 15 - 19		4.4, 4.6	No	4.1-4
8	June 22 - 26		4.7, 4.10	Yes	4.6-7
9	June 29 - July 3	W, Th	5.1, 7.1	No	4.10, 5.1
10	July 6 - 10		7.2-3	No	TEST #2
11	July 13 - 17		7.4-5	Yes	7.1-5
12	July 20 - 24		6.1, 8.1	No	6.1, 6.2
13	July 27 - 31		8.2, 9.1-2	Yes	8.1-2

Notes

1. Two 50 minute midterm tests in tutorial sessions indicated.
2. Material to be covered in midterms will be announced one week before the date of the midterm.
3. No tutorials in Week 1.