1 Course Outline

Text: *Notes on DiffY QS*, Jiri Lebl
A free version is available here
`http://www.jirka.org/diffyqs/`

In this course, we will consider some of the basic topics in differential equations. The key topics we will consider include,

- First order problems - chapter 1

- Higher order linear problems - chapter 2

- Linear systems - chapter 3

- Laplace transforms - chapter 6

- Nonlinear sy sems - chapter 8

Depending on time constraints other topics of interest to the class may be added.
There will be homework assignments every one to two weeks.

All homework assignment, solutions and handouts will be available from the web page in pdf format. If you have any problems downloading of viewing/printing these documents please let me know.

2 General Information

Instructor David Iron

Times Tuesday and Thursday 11:30-1

Location Dunn 135

Web Page The Brightspace page

Office hours Mondays and Tuesdays 10:30-12 or by appointment

3 Instructor Information

Name David Iron

Office Chase 322

Phone (902) 494-2385

email `iron@mathstat.dal.ca`

4 Grading

Homework 40%

Term Test 20%

Final Exam 40%

The final exam will be 3 hours long and written. The midterm test will be held in class on Thursday October 21.

5 Grading Scheme

The grading scheme is as follows:

A+	A	A-	B+	B	B-	C+	C	C-	D	F
$[90, 100]$	$[85, 90)$	$[80, 85)$	$[77, 80)$	$[73, 77)$	$[70, 73)$	$[65, 70)$	$[60, 64)$	$[55, 60)$	$[50, 55)$	$[0, 50)$

6 Course Topics and Approximate Dates

week 1 First-order differential equations, basic methods - sections 1.1 - 1.4

week 2 More methods and more complex equations - sections 1.5 - 1.8

week 3 Second order linear equations - sections 2.1-2.3

week 4 Applications of higher order equations - sections 2.4 -2.6

week 5 Systems of ODEs - section 3.1-3.4

week 6 More advanced topics in system - section 3.5-3.7

week 7 Review and Mid-term

week 8 Completion of linear systems - section 3.8-3.9

week 9 Laplace Transforms I - section 6.1-6.2

week 10 Laplace Transform II - sections 6.3-6.4

week 11 Nonlinear systems, equilibria and stability - sections 8.1-8.2

week 12 Nonlinear models - sections 8.3-8.5

week 13 Review for exam

7 Final Notes

- Late homework will be penalized at 5% per day.

- Homework will be accepted as on time up to 6:00pm on the due date. Email submissions will be accepted, but must be in either pdf or postscript format. I will not accept Word documents or any other proprietary formats.

- The university policy states that all cases of academic misconduct *must* be handled through official channels. I have no latitude in this matter. I do encourage people to work in groups, but I must insist that each student write up their own homework. Please read the paragraphs on academic honesty on page 21-26 in the Calendar.

- Students with permanent or temporary disabilities who would like to discuss classroom or exam accommodations are asked to contact me as soon as possible. For information on available services see *http://studentaccessibility.dal.ca/index.php*.