
Math 1115 Mathematics for Commerce

Syllabus – Summer 2017/2018

Basic Information

Course	MATH 1115 Mathematics for Commerce (3ch)
Lectures	MW 18.05 – 21.25, Studley LSC-COMMON AREA C238
Instructor	Dr. Mayada Shahada, Mayada.shahada@dal.ca , Chase 106
Office Hours	MW 16.30 – 17.30 or by appointment
Course Website	On Brightspace

Course Description

An Introduction to matrices, linear programming, mathematics of finance, probability and differential calculus. All topics are taught with an emphasis on applications to business. This course cannot be used to partially satisfy the BSc Mathematics requirement.

Prerequisites

Nova Scotia Advanced Mathematics 11 or 12 or equivalent.

Course Objectives/Learning Outcomes

The overarching goal of this course is for students to be able to interpret word problems and solve them using a broad range of mathematical techniques. The idea is to develop a broad mathematical toolbox with skills and knowledge that can be applied to many different real world problems.

- Chapter 5 Mathematics of Finance:
Students will learn the time value of money under compound interest and be able to solve several real-world problems such as determining the monthly payment on a car or a mortgage, or determining the final payment required to pay off a loan.
- Chapter 6 Matrix Algebra:
Students will learn how to solve systems of linear equations using several methods.
- Chapter 7 Linear Programming:
Students will learn how to obtain the best outcome (i.e. maximum profit or lowest cost) for linear mathematical models with built-in restraints. For example, we will be able to determine which products a company should produce in order to make the most effective use of their assets.
- Chapter 10 Limits and Continuity:
Students will learn the basic building blocks of calculus in order to define and use the derivative. This chapter is mostly building a foundation for the material in Chapters 11 and 13.
- Chapter 11 Differentiation:
Differentiation is the process of finding the derivative of a function. The derivative is one of the most fundamental concepts in mathematics. Students will be able to take the derivative of a wide variety of functions.
- Chapter 13 Curve Sketching:
Although the chapter is called curve sketching, we will only touch on curve sketching. The primary goal for us in this chapter will be to solve max/min word problems using the derivative. We will solve a wide range of problems and will often be looking to maximize profit or minimize cost.

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- Chapter 8 Introduction to Probability and Statistics:
Students will learn the basic principles of counting and probability and will be able to solve probability problems involving cards, dice, the choosing of committee members, and much more.

Textbook

E. Haeussler, R. Paul, and R. Wood: *Introductory Mathematical Analysis for Business, Economics, and the Life and Social Sciences*, Second Custom Edition for Dalhousie University.

Assessment Overview

There are two marking schemes for this course. Your final grade will be higher one of the two calculated using scheme 1 and scheme 2.

Scheme 1

Component	Weight	Dates
Online Assignments	15%	Weekly
Midterm	40%	May 28 th , 2018
Final Exam	45%	June 13 th , 2018

Scheme 2

Component	Weight	Dates
Online Assignments	15%	Weekly
Final Exam	85%	June 13 th , 2018

Note that it is uncommon that scheme 2 applies for the final grade. This is mainly given as an option for students not performing to their abilities throughout the term due to exceptional circumstances.

Percentage grades will be rounded to the nearest percentage point and then converted into letter grades as follows (from Section 17.1 in the Undergraduate Calendar):

90-100%	85-89%	80-84%	77-79%	73-76%	70-72%
A+	A	A-	B+	B	B-
65-69%	60-64%	55-59%	50-54%	0-49%	
C+	C	C-	D	F	

Detailed Assessment Description

Assignments

There will be 6 assignments throughout the term (one for each week), the best 5 of which are counted, each worth 3% of your grade, for a total of 15%. Assignments will be done through WeBWorK. The links for each assignment can be found on Brightspace.

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The following is a tentative schedule for the course's assignments:

Assignment	Start time	Closure time	Answers available on
Assign01	Mon. May 7 th at 12.00 pm	Wed. May 16 th at 11.59 pm	Fri. May 18 th at 12.00 pm
Assign02	Wed. May 16 th at 12.00 pm	Wed. May 23 rd at 11.59 pm	Fri. May 25 th at 12.00 pm
Assign03	Wed. May 23 rd at 12.00 pm	Wed. May 30 th at 11.59 pm	Fri. June 1 st at 12.00 pm
Assign04	Wed. May 30 th at 12.00 pm	Wed. June 6 th at 11.59 pm	Fri. June 8 th at 12.00 pm
Assign05	Wed. June 6 th at 12.00 pm	Tue. June 12 th at 11.59 pm	Wed. June 13 th at 12.00 pm
Assign06	Wed. June 6 th at 12.00 pm	Tue. June 12 th at 11.59 pm	Wed. June 13 th at 12.00 pm

Note: Any changes to the above schedule will be announced in class.

Midterm and Final Exam

The midterm will take place on Monday May 28th, 2018, 18.05 – 19.35. It worth 40% of your grade. The midterm will be up to and including section 7.2. You are responsible for materials covered in class, the assignments, and the corresponding sections of the textbook. **Note** that there will be a class after writing the midterm.

The final exam will be in Wednesday June 13th, 2018. The exam will be approximately 2.5 hours long, and worth 45% of your grade. It will be cumulative.

Important Academic Dates

May 7 th , 2018	Summer term begins (first class)
May 14 th , 2018	Last day to add this course
May 21 st , 2018	Victoria Day (University closed)
May 22 nd , 2018	Last day to drop without a “W” grade
June 7 th , 2018	Last day to drop with a “W” grade
June 13 th , 2018	Last class and final exam

Preliminary Schedule

The following is a preliminary schedule for the class. This might change throughout the term but we will try to stick closely to it.

Week	Days	Monday	Wednesday
1	May 7 th and May 9 th	Syllabus & Introduction (Chapter 4)	5.1 & 5.2 & 5.3
2	May 14 th and May 16 th	5.4 & 5.5 & 5.6	6.1 & 6.2 & 6.3 & 6.4
3	May 21 st and May 23 rd	Victoria Day NO CLASS	6.6 & 7.1 & 7.2
4	May 28 th and May 30 th	Midterm & 7.4	10.1 & 10.2 & 10.3
5	June 4 th and June 6 th	11.1 & 11.2 & 11.3 & 11.4	11.5 & 13.1 & 13.2 & 13.6
6	June 11 th and June 13 th	8.1 & 8.2 & 8.3 & 8.4	Final Exam

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Recommended Practice Problems

Section	Page	Problems
Review		
4.1	184	19 – 29 (assume annual compounding for all)
4.2	191	1 – 8, 17 – 56, 58, 59
4.3	197	1 – 20, 33 – 38, 45 – 52
4.4	201	1 – 36
Homework		
5.1	212	1 – 13, 14 – 28
5.2	216	1 – 25
5.3	219	1 – 22
5.4	227	5 – 35
5.5	231	1 – 22
5.6	235	1 – 5
6.1	245	1 – 29, 32, 33
6.2	251	1 – 43, 45 – 47
6.3	262	1 – 61, 63 – 67, 71 – 74
6.4	272	1 – 33
6.6	283	1 – 38, 40 – 41, 43 – 44
7.1	298	1 – 29
7.2	305	1 – 25
7.4	320	1 – 19
10.1	467	1 – 42, 45 – 46
10.2	475	1 – 61
10.3	481	1 – 34
11.1	499	1 – 28, 32 – 33
11.2	507	1 – 82
11.3	515	13 – 28, 45, 47
11.4	525	1 – 54, 59 – 70, 71, 72
11.5	532	9 – 54, 57 – 62, 65 – 70, 73, 79, 80, 82
13.1	586	1 – 52, 67 – 71
13.2	590	1 – 14
13.6	616	1 – 38, 41, 42
8.1	363	1 – 42
8.2	373	1 – 28, 30 – 38
8.3	381	1 – 30
8.4	393	1 – 25

Notes:

- Chapter 4 problems are for review (only) by the student and should be completed as soon as possible.
- It is recommended to pick and choose as many as of the above listed problems to practice.
- Students are **not** required to hand in homework problems to the instructor. The intension is to use them for practice.
- Page numbers and text references refer to the second custom published text for Math 1115.
- If any additions or deletion are made to the above list, announcements will be made in class. More condensed list of recommended practice homework problems for the final exam is posted on Brightspace.
- Answers for odd numbered questions are in the back of the text.

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Policies

What is expected of the student?

Working knowledge of, and any needed review of, all relevant concepts; regular attendance at classes; completion of all assigned work; assumption of complete responsibility for any classes or tests which are missed. It is up to the student to seek out help when needed.

Please contact me if you require material in an alternate format or if any other arrangements can make this course more accessible to you.

Communication via email

Note that any email to be sent to the instructor **must** be addressed to Prof. Shahada and say Math 1115 in the subject line. Any email without this, and/or email sent from other than a Dal email address may be deleted unread.

Assignments, midterm and exam

Only non-programmable, non-graphing calculators will be allowed during the midterm and the final exam.

Late assignments are marked as zero points if no extension was previously granted.

If you miss the midterm without my prior permission or for a reasonable excuse, then it will count as 0. If you have my prior permission or an excuse, the weight of the midterm will be added to your final exam.

If you miss the final exam without my prior permission or for a reasonable excuse, then it will count as 0. If you have my prior permission or an excuse, you will write a different exam at a later point with everyone else who is rewriting. If you also miss this exam, you will be given a grade of 0.

Arriving late/leaving early

If you have to arrive late, or leave early, I appreciate to be informed in advance if possible and try not to distract the class when you do so.

Laptops and cell phones

Laptops should only be used for taking notes, ideally not at all since they are distracting to your classmates and yourself. Cell phones should be out of sight at all times. If you need to answer an important call, please leave the classroom to do so.

Extra help

If you need extra help, please come see me during my office hours, or visit the Learning Centre on the first floor of the Chase building during the class specific hours. The Learning Centre schedule can be found here: <https://www.dal.ca/faculty/science/math-stats/about/learning-centre.html>

Note that I will **not** answer mathematical questions by email.

Intellectual Honesty

If you receive help from a tutor or use other resources (online, other books, ect...) for your assignments, please **inform** me of this in writing before the deadline of the corresponding assignment. More information (which I expect you to read and understand) about intellectual honesty and how to avoid plagiarism and cheating can be found here:

http://www.dal.ca/dept/university_secretariat/academic-integrity.html