DALHOUSIE UNIVERSITY

Faculty of Science Course Syllabus
Department of Mathematics and Statistics
MATH 1115 Mathematics for Commerce
Winter 2019

Instructor: Vinita Mishra, vinita.mishra@smu.ca, Chase Building Room #: 125

Lectures: MWF 12:35 – 1:25 pm, Kenneth Rowe Management, room 1028

Office hours (tentative): TBD

_____

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.

Course Prerequisites
Nova Scotia Advanced Mathematics 11 or 12 equivalent.

Course Content, Course Objectives, and Learning Outcomes
The 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 determine 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 minimum cost) for linear mathematical model with built-in constraints. For example we will be able to decide the number of each product a manufacturing company should produce so as to best utilize their limited resources.
- Chapter 10: Limits and continuity
  Students will learn the basic building blocks of calculus. 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 is 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.
- 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.

Course Materials
- Required textbook – *Introductory Mathematical Analysis for Business, Economics, and the Life and Social Sciences*, Second Custom Edition for Dalhousie University (by: Ernest F. Haeussler, Jr., Richard S. Paul, and Richard J. Wood)
- Course website: can be found on BrightSpace.
- Non-programmable calculators.

Course Assessment
The final grade is computed according to the following scheme.

WebWork Assignments:	*14%*	
Test 1:	*15%*	
Test 2:	*15%*	
Final exam	*56%*	*(Scheduled by Registrar)*

Conversion of numerical grades to Final Letter Grades follows the <u>Dalhousie Common Grade Scale</u>

A+ (90-100) B+ (77-79) C+ (65-69) D (50-54)

A (85-89) B (73-76) C (60-64) F (<50)

A- (80-84) B- (70-72) C- (55-59)

Course Policies
Assignments
- Assignments will be ready on BrightSpace/WebWorks at least one week before they are due. The link for WebWorks is on BrightSpace.
- Late assignments will not be accepted. Best 8 out of the 9 assignments will be counted.
- Each assignment is due Friday by 11pm, except for assignment 9 which is due Monday, April 8 by 11 pm. The assignment due dates are as follows:
  Assignment 1: Due Friday, January 18
  Assignment 2: Due Friday, January 25
  Assignment 3: Due Friday, February 1
  Assignment 4: Due Friday, February 15
  Assignment 5: Due Friday, March 1
  Assignment 6: Due Friday, March 8
  Assignment 7: Due Friday, March 22
  Assignment 8: Due Friday, March 29
  Assignment 9: Due Monday, April 8

Tests and Final Exam:
- Tests will be held during class time
- Test 1: Wednesday, February 6:   Test 2: Wednesday, March 13.
- There will be no make up tests. If you are unable to write the test due to illness and have valid documentation, marks allocated to the missed test will be added to your final exam.
- The final exam will be cumulative.
- The final exam will be scheduled by the office of the Registrar.
- In order to pass the course, you must obtain a minimum of 50% on a weighted average of the tests and final exam **and** an overall average of 50% in the course.

_____

University Policies and Statements

This course is governed by the academic rules and regulations set forth in the University Calendar and by Senate

Academic Integrity
At Dalhousie University, we are guided in all of our work by the values of academic integrity: honesty, trust, fairness, responsibility and respect (The Center for Academic Integrity, Duke University, 1999). As a student, you are required to demonstrate these values in all of the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity.
Information: https://www.dal.ca/dept/university_secretariat/academic-integrity.html

Accessibility
The Advising and Access Services Centre is Dalhousie's centre of expertise for student accessibility and accommodation. The advising team works with students who request accommodation as a result of a disability, religious obligation, or any barrier related to any other characteristic protected under Human Rights legislation (Canada and Nova Scotia).
Information: https://www.dal.ca/campus_life/academic-support/accessibility.html

Student Code of Conduct
Everyone at Dalhousie is expected to treat others with dignity and respect. The Code of Student Conduct allows Dalhousie to take disciplinary action if students don't follow this community expectation. When appropriate, violations of the code can be resolved in a reasonable and informal manner—perhaps through a restorative justice process. If an informal resolution can't be reached, or would be inappropriate, procedures exist for formal dispute resolution.
Code: https://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html

Diversity and Inclusion – Culture of Respect
Every person at Dalhousie has a right to be respected and safe. We believe inclusiveness is fundamental to education. We stand for equality. Dalhousie is strengthened in our diversity. We are a respectful and inclusive community. We are committed to being a place where everyone feels welcome and supported, which is why our Strategic Direction prioritizes fostering a culture of diversity and inclusiveness
Statement: http://www.dal.ca/cultureofrespect.html)

Recognition of Mi'kmaq Territory
Dalhousie University would like to acknowledge that the University is on Traditional Mi'kmaq Territory. The Elders in Residence program provides students with access to First Nations elders for guidance, counsel and support. Visit the office (Rm 3037, McCain Building), e-mail (elders@dal.ca) or leave message (902-494-6803).
Information: https://www.dal.ca/campus_life/communities/native.html

Important Dates in the Academic Year (including add/drop dates)
  https://www.dal.ca/academics/important_dates.html
University Grading Practices
  https://www.dal.ca/dept/university_secretariat/policies/academic/grading-practices-policy.html

Student Resources and Support

Advising

 General Advising https://www.dal.ca/campus_life/academic-support/advising.html

 Science Program Advisors: https://www.dal.ca/faculty/science/current-students/academic-advising.html

 Aboriginal Student Centre: https://www.dal.ca/campus_life/communities/native.html

 Black Advising Centre: https://www.dal.ca/campus_life/communities/black-student-advising.html

 International Centre: https://www.dal.ca/campus_life/international-centre/current-students.html

Academic supports

 Library: https://libraries.dal.ca/

 Writing Centre: https://www.dal.ca/campus_life/academic-support/writing-and-study-skills.html

 Studying for Success: https://www.dal.ca/campus_life/academic-support/study-skills-and-tutoring.html

 Copyright Office: https://libraries.dal.ca/services/copyright-office.html

 Fair Dealing Guidelines https://libraries.dal.ca/services/copyright-office/fair-dealing.html

Other supports and services

 Student Health Services: https://www.dal.ca/campus_life/health-and-wellness/health-services/services.html

 Counselling: https://www.dal.ca/campus_life/health-and-wellness/counselling.html

 Student Advocacy: https://www.dsu.ca/services/community-student-services/student-advocacy-service

 Ombudsperson: https://www.dal.ca/campus_life/safety-respect/student-rights-and-responsibilities/where-to-get-help/ombudsperson.html

Safety

 Research Lab Safety https://www.dal.ca/content/dam/dalhousie/pdf/dept/safety/lab_policy_manual_2007.pdf

 Biosafety: https://www.dal.ca/dept/safety/programs-services/biosafety.html

 Chemical Safety: https://www.dal.ca/dept/safety/programs-services/chemical-safety.html

 Radiation Safety: https://www.dal.ca/dept/safety/programs-services/radiation-safety.html

Scent-Free Program: https://www.dal.ca/dept/safety/programs-services/occupational-safety/scent-free.html