

**Faculty of Science Course Syllabus
Department of Economics
ECON 3700
Mathematics for Economists
Fall 2017**

Instructor:	Professor Norovsambuu Tumennasan (Norov for short)		
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Office Address:	6206 University Ave. C11		
Office hours:	Tuesdays 9:00-12:00 or by appointment		
Lectures	(Section 1):	TH 14:35- 15:55 Henry Hicks Academic 212	
	(Section 2):	TH 16:05- 17:25 Henry Hicks Academic 212	
Teaching Assistants:	Zongming Ma (Michael) (email: zn366117@dal.ca)		
	Paola Beneras	(email: Paola.Beneras@Dal.Ca)	
TA Office Hours:	<i>Michael</i>	<i>Tues: 10:05-11:25</i>	<i>LSC C210</i>
	<i>Paola</i>	<i>Wed: 9.35- 10:55</i>	<i>LSC C210</i>

IMPORTANT DATES

Nov. 2, Oct. 26

No Class

Course Description

This course presents mathematical methods used in modern economics. The lectures concentrate on the basic concepts of analysis, comparative statics and optimization theory. Topics include an introduction to set theory and matrix algebra, the implicit function theorem, unconstrained optimization, constrained optimization with equality and inequality constraints, and intertemporal choice.

Course Prerequisites

ECON 2200 or ECON 2220, ECON 2201, MATH 1000 or permission of the instructor

This course has a minimum grade requirement of C for their prerequisite courses.

Course Objectives/Learning Outcomes

The main objective of the course is that students learn to apply formal and disciplined arguments when analyzing economic problems. Students are expected to obtain a working knowledge of each topic on

the list below. This means, for example, students should be able to recognize situations in which the various techniques are relevant, and should understand how to put the techniques to use.

Course Content

- Linear Models and Matrix Algebra: Vectors, Matrices in Economics, Markov processes, The Identity Matrix, Inverses, and Determinants - Cramer's rule
 - Eigenvectors, Eigenvalues, Power operator on matrices
 - Comparative Statics: Derivatives of functions of a single variable, Partial derivatives, Leontief Input-Output model
 - Differentials, Total Derivatives, Implicit Function Theorem
 - Unconstrained Optimization - First & Second Order Conditions - Positive & Negative Definiteness – Concavity
 - Constrained Optimization – Lagrangian multipliers
 - Constrained Optimization - Second Order Conditions - Examples
 - Optimization with Inequality Constraints - Kuhn-Tucker
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Course Materials

- Mathematics for Economists by C.P. Simon & L. Blume; published by Norton, 1994
- You can access to course materials through Brightspace. Please check the course website frequently for new announcements.

Course Assessment

Component	Weight (% of final grade)	Date
Midterm Exam	30%	Oct, 26
Final exam	50%	<i>(Scheduled by Registrar)</i>
Assignments	20%	TBA

Conversion of numerical grades to Final Letter Grades follows the Dalhousie Common Grade Scale

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)	

There will be eight homework problem sets and 4 of these will be graded. Each graded problem set will have the same weight, 5% of your grade. Assignments must be done individually and handed in before or on the due date. Only hard copy is acceptable.

Course Policies

Policy on Missed Materials: Assignments will NOT be accepted after the due date, unless a written proof of the emergency situation causing the delay is provided. If a student miss midterm for a valid medical

reason (original doctor notes are required), all the weight of your midterm will be shifted to the final. If a student misses the final exam for a valid medical reason, you must notify the instructor immediately, provide appropriate medical documentation and make arrangements to write a comprehensive exam as soon as health permits.

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 or e-mail the Indigenous Student Centre (1321 Edward St) (elders@dal.ca).

Information: https://www.dal.ca/campus_life/communities/indigenous.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>

Indigenous Student Centre: https://www.dal.ca/campus_life/communities/indigenous.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 & Wellness Centre: https://www.dal.ca/campus_life/health-and-wellness/services-support/student-health-and-wellness.html

Student Advocacy: <https://dsu.ca/dsas>

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>