

Economics 389 (L01)
Introduction to Mathematical Economics II

Instructor: Aamir Rafique Hashmi
Phone: +1-403-220-4604
Email: Aamir.hashmi@ucalgary.ca

Lecture Location: SA 015
Lecture Days/Time: MWF 1400-1450

Office: SS 342
Office Hours: W 1245-1345

Semester: Winter 2018

Course Description:

This course builds on the mathematical tools for economic analysis that are covered in ECON 387. It covers constraint optimization, integral calculus, differential equations, difference equations and dynamic optimization.

Course Objectives/Learning Outcomes:

The main objective of this course is to introduce the students to important mathematical tools that are an essential part of an economist's analytical toolkit.

After completing this course, the students are expected to be familiar with constraint optimization, integral calculus, differential equations, difference equations and dynamic optimization. They are also expected to be familiar with the applications of these mathematical tools to a myriad of economic problems.

Prerequisites:

ECON 357

Required Textbook(s):

Chiang, Alpha C. and Kevin Wainwright. 2004. *Fundamental Methods of Mathematical Economics*. Fourth Edition. McGraw-Hill/Irwin.

Books on Reserve:

1. Chiang, Alpha C. and Kevin Wainwright. 2004. *Fundamental Methods of Mathematical Economics*. Fourth Edition. McGraw-Hill/Irwin.
2. Sydsaeter, Knut and Peter J. Hammond. 1995. *Mathematics for Economics Analysis*. Prentice Hall.
3. Hoy, Michael, John Livernois, Chris McKenna, Ray Rees and Thanasis Stengos. 2011. *Mathematics for Economics*. Third Edition. The MIT Press.

Course Outline:

1. Review of Unconstrained Optimization (Chapters 9 and 11)
2. Optimization with Equality Constraints (Chapter 12)
3. Optimization with Inequality Constraints (Chapter 13)
4. Integral Calculus (Chapter 14)
5. Differential Equations (Chapters 15 and 16)
6. Difference Equations (Chapters 17 and 18)
7. Dynamic Optimization I: Optimal Control (Chapter 20)
8. Dynamic Optimization II: Dynamic Programming (Instructor's notes)

Desire2Learn:

This course will make use of the Desire2Learn (D2L) platform. Students who are registered in the course can log on at <http://d2l.ucalgary.ca> through their student centre. Please note that D2L features a class e-mail list that may be used to distribute course-related information. These e-mails go to your University of Calgary e-mail addresses only.

Grade Determination and Final Examination Details:

Midterm exam:	30%
Final examination:	50%
Problem sets (one for each topic):	<u>20%</u>
	100%

Grading Scale

A+	95 – 100	B	73 – 76	C-	60 – 62
A	85 – 94	B-	70 – 72	D+	56 – 59
A-	80 – 84	C+	67 – 69	D	50 – 55
B+	77 – 79	C	63 – 66	F	0 – 49

Students must receive a passing grade on the final exam to pass the course.

As per the Writing Across the Curriculum Statement in the Calendar, writing and grading thereof will be a factor in the evaluation of student work.

Any student work which remains undistributed after the last day of classes will be available to students through the instructor's office during his office hours.

The final examination will be comprehensive, scheduled by the Registrar, held in a classroom, and last 2 hours. If a student cannot write their final exam on the date assigned by the Registrar's Office, they need to apply for a deferred exam www.ucalgary.ca/registrar/exams/deferred_final. Under no circumstance will this be accommodated by the Department.

Tests and exams will not involve multiple-choice questions. Non-programmable calculators WILL be allowed during the writing of tests or final examinations.

The midterm exam will be given during the class time on **February 26th 2017 (Monday)**.

THERE WILL BE NO MAKEUP OR DEFERRED QUIZZES/TESTS/EXAMS under any circumstances, nor may the quizzes/tests/exams be written early. Students unable to write the quizzes/tests/exams because of documented illness, family emergency, religious observance, or university-sanctioned event will have the weight shifted to the final examination; otherwise a grade of zero will be assigned.

Reappraisal of Grades and Intellectual Honesty:

For reappraisal of graded term work, see Calendar I.2

<http://www.ucalgary.ca/pubs/calendar/current/i-2.html>

For reappraisal of final grade, see Calendar I.3

<http://www.ucalgary.ca/pubs/calendar/current/i-3.html>

Statement of Intellectual Dishonesty, see Calendar K.4

<http://www.ucalgary.ca/pubs/calendar/current/k-4.html>

Plagiarism and Other Academic Misconduct, , see Calendar K.5

<http://www.ucalgary.ca/pubs/calendar/current/k-5.html>

Academic Accommodation:

The student accommodation policy can be found at: ucalgary.ca/access/accommodations/policy.

Students needing an accommodation because of a disability or medical condition should communicate this need to Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities ucalgary.ca/policies/files/policies/student-accommodation-policy.

Students needing an Accommodation based on a Protected Ground other than disability should communicate this need, preferably in writing, to the course instructor.

Important Dates:

Please check: <http://www.ucalgary.ca/pubs/calendar/current/academic-schedule.html>

Student Organizations:

Faculty of Arts Students' Association (F.A.S.A.):

Economics Department Representative

Office: SS 803, E-mail: econrep@fasaucalgary.ca and Web: www.fasaucalgary.ca.

Society of Undergraduates in Economics:

<https://www.ucalgarysue.com/>.

Society of Undergraduates in Economics is a student run organization whose main purpose is to assist undergraduate economics students to succeed both academically and socially at the University of Calgary. Services include access to the exam bank, career events such as Industry Night and information sessions, mentorship programs, and social events for members. They invite you to join by contacting SUE at societyofundergradsineconomics@gmail.com.

Faculty of Arts Program Advising and Student Information Resources:

- Have a question, but not sure where to start? The Arts Students' Centre is your information resource for everything in Arts! Drop in at SS102, call them at 403-220-3580 or email them at artsads@ucalgary.ca. You can also visit the Faculty of Arts website at <http://arts.ucalgary.ca/undergraduate> which has detailed information on common academic concerns, including program planning and advice.
- For registration (add/drop/swap), paying fees and assistance with your Student Centre, contact Enrolment Services at 403-210-ROCK [7625] or visit them in the MacKimmie Library Block.
- Online writing resources are available at <http://www.ucalgary.ca/ssc/resources/writing-support>.

Evacuation Assembly Point:

In case of an emergency evacuation during class, students must gather at the designated assembly point nearest to the classroom. The assembly point for this classroom is the Social Science Food Court

Safewalk:

The Safewalk program provides volunteers to walk students safely to their destination anywhere on campus. This service is free and available 24 hrs/day, 365 days a year. **Call 403-220-5333.**

Freedom of Information and Protection of Privacy (FOIP) Act:

Personal information is collected in accordance with FOIP. For more information, see <http://www.ucalgary.ca/legalservices/foip/foip-hia>.

Internet and Electronic Communication Device information:

The use of cell phones for any purpose in class is prohibited. Computers and tablets may be used for note-taking only.

Aamir Rafique Hashmi
October 20th 2017