

University of Waterloo
Department of Economics
Econ 211 – Section 1
Introduction to Mathematical Economics
Spring 2018
Lecture: Tuesday and Thursday 2:30-3:50pm, RCH 204
Tutorial: Wednesday 1:30-2:20pm, HH 334

Territorial Acknowledgement

We acknowledge that we are living and working on the traditional territory of the Attawandaron (also known as Neutral), Anishinaabeg and Haudenosaunee peoples. The University of Waterloo is situated on the Haldimand Tract, the land promised to the Six Nations that includes six miles on each side of the Grand River.

Instructor Information

Instructor: Ryan George

Office: HH 218

Office Phone: 519-888-4567 ext. 33169 (please do not leave voice mails)

Office Hours: Monday to Thursday 1pm – 2pm, or by appointment

Email: r22georg@uwaterloo.ca

The instructor will only respond to emails that include “Econ 211” in the subject line of the message.

T.A. Information

TBA

Course Description

The course surveys basic mathematical tools of particular value for economic analysis. The core concern of the course is with optimization of real-valued functions of one and two variables and the study of systems of linear equations. Along the way we will consider such topics as functions, limits, differentiation, continuity, and concavity. Economic applications will be presented.

Course Goals and Learning Outcomes

Through lectures, reading and practice in solving problems, the course aims to

- increase students’ proficiency in the use of mathematics in the context of economic analysis

Required Text

- Hoy, M., Livernois, J., McKenna, C., Rees, R., and Stengos, T., *Mathematics for Economics*, Third Edition, The MIT Press 2011.

One copy of the 3rd edition is on reserve in the Dana Porter Library.

Readings Available on LEARN

- Announcements, practice problems and their solutions, midterm solutions.
- Recommended textbook problems.

Course Requirements and Assessment

Assessment	Date of Evaluation (if known)	Weighting
Tutorial Participation		10%
Midterm 1	June 7 th	20%
Midterm 2	July 3 rd	20%
Final Examination	Exam Period (scheduled by Registrar's Office)	50%
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Total		100%

Tutorial Participation

Students are required to attend 10 tutorial meetings over the course of the term. Exercises will be reviewed and students will be given problems to solve and submit and these will be graded (1 attended tutorial, 2 used correct approach, 3 solved problem out of 3). The best 8 out of 10 tutorial performances will be used to calculate the tutorial participation mark. A *midterm 1 review* tutorial will be held on June 6th. No tutorial will be held on July 4th, the week of the second midterm.

Midterm Examinations

The midterm exams will be **held in class on June 7th and July 3rd**. They will test students' proficiency with the material covered in the lectures, textbook and practice problems.

Final Examination

The final exam is comprehensive. The date will be set by the Registrar's Office.

Course Outline (Tentative)

Week	Dates	Lecture Topic	Lecture Readings Due
1	May 1 and 3 <i>Tutorial 1</i> May 2	<ul style="list-style-type: none"> Sets, Functions and Sequences 	Ch 2
2	May 8 and 10 <i>Tutorial 2</i> May 9	<ul style="list-style-type: none"> Limits and Continuity 	Ch 3 and Ch 4.1
3	May 15 and 17 <i>Tutorial 3</i> May 16	<ul style="list-style-type: none"> Derivative 	Ch 5
4	May 24 (no class May22) <i>Tutorial 4</i> May 23	<ul style="list-style-type: none"> Optimization of Function of One Variable 	Ch 6
5	May 29 and 31 <i>Tutorial 5</i> May 30	<ul style="list-style-type: none"> Optimization of Function of One Variable (concl'd) Integration 	Ch.6 Ch.16.1-2
6	June 5 and 7 <i>Tutorial</i> June 6 – review	<ul style="list-style-type: none"> Review Midterm 1 - June 7 	
7	June 12 and 14 <i>Tutorial 6</i> June 13	<ul style="list-style-type: none"> Linear Algebra 	Ch 7 and 8
8	June 19 and 21 <i>Tutorial 7</i> June 20	<ul style="list-style-type: none"> Matrix Determinant and Inverse 	Ch 9
9	June 26 and 28 <i>Tutorial 8</i> June 27	<ul style="list-style-type: none"> Topics in Linear Algebra Review 	Ch 10.1 and 10.3
10	July 3 and 5 No Tutorial - July 4	<ul style="list-style-type: none"> Midterm 2 - July 3 Multivariate Calculus 	Ch 11
11	July 10 and 12 <i>Tutorial 9</i> July 11	<ul style="list-style-type: none"> Unconstrained Optimization with Two Variables 	Ch 12
12	July 17 and 19 <i>Tutorial 10</i> June 18	<ul style="list-style-type: none"> Constrained Optimization with Two Variables 	Ch 13
13	July 24	<ul style="list-style-type: none"> Course Review and Exam Details 	

Missed Work and Accommodation Regarding Assessment

If a student is unable to take one midterm exam for documented reasons, its weight will be shifted to the final exam. If two midterms are missed, a make-up exam will be offered at an arranged time. ***Please note that students who decide to take an exam cannot be given accommodation after the fact due to illness or personal complicating factors that may have affected their performance.*** If you are not well on the day of an exam it is advisable that you not take the exam and obtain valid documentation of the circumstances of this decision.

Electronic Device Policy

To avoid disruptions to the learning environment handheld devices must be turned off during the lecture and laptops must be used strictly for lecture-related purposes. If a student's use of a laptop becomes a distraction for adjacent students that student will be asked to discontinue its use.

Attendance Policy

Lectures are an important component of the learning process and should be attended regularly.

Economics Department Deferred Final Exam Policy

Deferred Final Exam Policy found at <https://uwaterloo.ca/economics/current-undergraduates/policies-and-resources/deferred-final-exam-policy>.

Academic Integrity

In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility. See the [UWaterloo Academic Integrity webpage](#) and the [Arts Academic Integrity webpage](#) for more information.

Discipline

A student is expected to know what constitutes academic integrity, to avoid committing academic offences, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating) or about "rules" for group work/collaboration should seek guidance from the course professor, academic advisor, or the Undergraduate Associate Dean. When misconduct has been found to have occurred, disciplinary penalties will be imposed under Policy 71 – Student Discipline. For information on categories of offenses and types of penalties, students should refer to [Policy 71 - Student Discipline](#). For typical penalties check [Guidelines for the Assessment of Penalties \(https://uwaterloo.ca/secretariat-general-counsel/policies-procedures-guidelines/guidelines/guidelines-assessment-penalties\)](https://uwaterloo.ca/secretariat-general-counsel/policies-procedures-guidelines/guidelines/guidelines-assessment-penalties).

Grievance

A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read [Policy 70 - Student Petitions and Grievances](#), Section 4 (<https://uwaterloo.ca/secretariat-general-counsel/policies-procedures-guidelines/policy-70>). When in doubt, please be certain to contact the department's administrative assistant who will provide further assistance.

Appeals

A decision made or penalty imposed under Policy 70, Student Petitions and Grievances (other than a petition) or Policy 71, Student Discipline may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to [Policy 72, Student Appeals](#) (<https://uwaterloo.ca/secretariat-general-counsel/policies-procedures-guidelines/policy-72>).

Note for Students with Disabilities

The [AccessAbility Services](#) office, located on the first floor of the Needles Hall extension (NH 1401), collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the AS office at the beginning of each academic term.

Mental Health Support

All of us need a support system. The faculty and staff in Arts encourage students to seek out mental health supports if they are needed.

On Campus

- Counselling Services: counselling.services@uwaterloo.ca / 519-888-4567 ext 32655
- [MATES](#): one-to-one peer support program offered by Federation of Students (FEDS) and Counselling Services
- Health Services Emergency service: located across the creek from Student Life Centre

Off campus, 24/7

- [Good2Talk](#): Free confidential help line for post-secondary students. Phone: 1-866-925-5454
- Grand River Hospital: Emergency care for mental health crisis. Phone: 519-749-433 ext. 6880
- [Here 24/7](#): Mental Health and Crisis Service Team. Phone: 1-844-437-3247
- [OK2BME](#): set of support services for lesbian, gay, bisexual, transgender or questioning teens in Waterloo. Phone: 519-884-0000 extension 213

Full details can be found online at the Faculty of ARTS [website](#)

Download [UWaterloo and regional mental health resources \(PDF\)](#)

Download the [WatSafe](#) app to your phone to quickly access mental health support information