

**University of Waterloo**  
**Department of Economics**  
**Econ 211 – Section 1**  
**Introduction to Mathematical Economics**  
**Fall 2014**  
**Monday and Thursday 8:30-9:50, MC 2017**

**Instructor Information**

Instructor: Ryan George  
Office: HH 218  
Office Phone: 519-888-4567 ext. 33169 (please do not leave voice mails)  
Office Hours: Monday and Thursday 10-11am or by appointment  
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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 3<sup>rd</sup> edition is on reserve in the Dana Porter Library.

## Readings Available on LEARN

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

## Course Requirements and Assessment

Assessment	Date of Evaluation (if known)	Weighting (max of schemes #1 and #2)	
		Scheme #1	Scheme #2
Assignments (3 @ 5% each)	TBA	15%	15%
Midterm Examinations	Thursday, October 9 <sup>th</sup> Thursday, November 6 <sup>th</sup>	20% each	20% on best midterm
Final Examination	Exam Period (scheduled by Registrar's Office)	45%	65%
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Total		100%	100%

### Assignments

There will be four (3) assignments over the course of the term. Each will count for 5% of the final grade. The assignments will be posted on LEARN, and due in class. Two assignments will be due prior to the midterm and two will be due after the midterm. Due dates to be announced. Unless an arrangement has been made with the instructor, *no late assignments will be accepted*.

### Midterm Examination

The midterm exam will be **held in class on Thursday, October 9<sup>th</sup> and Thursday, November 6<sup>th</sup>**. It will test students' proficiency with the material covered in the lectures, assignments and practice problems.

### Final Examination

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

## Course Outline (Tentative)

Week	Date	Topic	Readings Due
1	Sept 8 and 11	<ul style="list-style-type: none"><li>• Sets, Functions and Sequences</li></ul>	Ch 2
2	Sept 15 and 18	<ul style="list-style-type: none"><li>• Limits and Continuity</li></ul>	Ch 3 and Ch 4.1
3	Sept 22 and 25	<ul style="list-style-type: none"><li>• Derivative</li></ul>	Ch 5
4	Sept 29 and Oct 2	<ul style="list-style-type: none"><li>• Optimization of Function of One Variable</li></ul>	Ch 6
5	Oct 6 Oct 9	<ul style="list-style-type: none"><li>• Catch-up and Review</li><li>• <b>Midterm I during lecture Thurs Oct 9</b></li></ul>	
6	Oct 13 and 16	<ul style="list-style-type: none"><li>• Linear Algebra</li></ul>	Ch 7 and 8
7	Oct 20 and 23	<ul style="list-style-type: none"><li>• Matrix Determinant and Inverse</li></ul>	Ch 9
8	Oct 27 and 30	<ul style="list-style-type: none"><li>• Topics in Linear Algebra</li></ul>	Ch 10
9	Nov 3 Nov 6	<ul style="list-style-type: none"><li>• Catch-up and Review</li><li>• <b>Midterm II during lecture Thurs Nov 6</b></li></ul>	
10	Nov 10 and 13	<ul style="list-style-type: none"><li>• Multivariate Calculus</li></ul>	Ch 11
11	Nov 17 and 20	<ul style="list-style-type: none"><li>• Unconstrained Optimization with Two Variables</li></ul>	Ch 12
12	Nov 24 and 27	<ul style="list-style-type: none"><li>• Constrained Optimization with Two Variables</li></ul>	Ch 13
13	Dec 1	<ul style="list-style-type: none"><li>• Course Review and Exam Details</li></ul>	

## **Missed Work and Accommodation Regarding Assessment**

If a student is unable to take a midterm exam for documented reasons, 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.

## **Faculty of Arts Statements**

### **Cross-listed course:**

Please note that a cross-listed course will count in all respective averages no matter under which rubric it has been taken. For example, a PHIL/PSCI cross-list will count in a Philosophy major average, even if the course was taken under the Political Science rubric.

### **Academic Integrity:**

***Academic Integrity:*** In order to maintain a culture of academic integrity, members of the University of Waterloo are expected to promote honesty, trust, fairness, respect and responsibility.

***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.

***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.

***Appeals:*** A student may appeal the finding and/or penalty in a decision made under Policy 70 - Student Petitions and Grievances (other than regarding a petition) or Policy 71 - Student Discipline if a ground for an appeal can be established. Read Policy 72 - Student Appeals.

### ***Other sources of information for students:***

Academic Integrity website (Arts) Academic Integrity Office (uWaterloo)

### **Accommodation for Students with Disabilities:**

***Note for students with disabilities:*** The AccessAbility Services office, located in Needles Hall Room 1132, 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.