York University
Faculty of Liberal Arts & Professional Studies
Department of Economics

AP/ECON 1540 3.0 W
Mathematics for Economists II
Winter 2022 Course Outline

Course Instructor Contact:
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Course Web Site: eclass
Virtual Course Consultation Hours: By appointment (Zoom connection information will be available through eclass)

Course Description (prerequisites/co-requisites):
This course extends the analysis of basic Economics ideas, topics and problems begun in AP/ECON 1530 3.00. Again, relevant mathematical ideas and techniques are recalled and/or derived so as to provide a deeper understanding of Economic issues and how they can be resolved. The issues and problems covered require functions of more than one variable for their resolution. The notion of Quantity Supplied is combined with the notion of Quantity Demanded and notions of Market Equilibrium are introduced and discussed. Equilibria are evaluated through the introduction of mathematical notions and properties of systems of equations, eventually in matrix form. A deeper understanding of theories of demand (supply) and the foundations of demand (supply) functions is developed through the introduction of mathematical notions of unconstrained and constrained optimization and linear and nonlinear programming. As in AP/ECON 1530 3.0, many topics and issues are addressed and problem framing and problem solving abilities are enhanced.

Prerequisite: AP/ECON 1530 3.00 or equivalent.
Prerequisites/Co-requisites: AP/ECON 1000 3.00 or AP/ECON 1010 3.00, or equivalent. Note: No credit will be retained for this course for students who have successfully completed or who are currently enrolled in SC/MATH 1021 3.00, SC/MATH 1025 3.00, or SC/MATH 2221 3.00.
Course credit exclusions: SC/MATH 1505 6.00, SC/MATH 1540 3.00, SC/MATH 1550 6.00, GL/MATH/MODR 2650 3.00. Note: Acceptable course substitutes are available in the Calendar.

Lecture Time and Location

Lecture:

- Online lecture delivery format (Zoom live lectures).
- Course lectures will be delivered every **Wednesday 11:30am - 2:30pm.**
- This is an online course. The entire course, including the submission of assignments, participation/discussion and test-taking, will take place on the course's eclass.

Teaching Assistants: TBA

Organization of the Course

This course is an online lecture delivery format. Lectures will be delivered through lecture notes and audio files and/or virtual live lectures with Zoom. Office hours will be held in a virtual space with Zoom. All students must have a Zoom account.

Technical requirements for taking the course:

A computer with microphone and webcam, and a high speed and reliable internet connection, and/or a smart device with these features. These technical features are required for students in order to fully participate in the course. There are some live information sessions including Q & A that will be conducted through Zoom video conferencing, where students are expected to participate. Also, you may be required to appear on video for exams/tests proctoring purposes. If you are not comfortable with these requirements, you should not enroll in this section of the course.

Students shall note the following:

- Zoom is hosted on servers in the U.S. This includes recordings done through Zoom.
- If you have privacy concerns about your data, provide only your first name or a nickname when you join a session.
- The system is configured in a way that all participants are automatically notified when a session is being recorded. In other words, a session cannot be recorded without you knowing about it.

Here are some useful links for student computing information, resources and help:

Student Guide to Moodle
Zoom@YorkU Best Practices
Zoom@YorkU User Reference Guide
Computing for Students Website
Student Guide to eLearning at York University

To determine Internet connection and speed, there are online tests, such as Speedtest, that can be run.

Required Course Text/Readings:
Knut Sydsaeter, Peter Hammond, Arne Strom, Andrés Carvajal, ***Essential Mathematics for Economic Analysis***, 5/E, ISBN-10: 1292074612 • ISBN-13: 9781292074610 ©2016 • Pearson International

Evaluation *****

The grade for this course is composed of the mark received for each of the following components:

Type of Assessment	Percent/Weight	Date
Midterm Test I (Online, 90 minutes)	Higher mark 35%	Wed: Feb 2
Midterm Test II (Online, 90 minutes)	Lower mark 15%	Wed: Mar 16
Final Exam (Online, 180 minutes)	50%	April 12-29
TOTAL	**100%**	

The following conversions will be used in converting percentage grades to letter grades:
90-100 (A+), 80-89 (A), 75-79 (B+), 70-74 (B), 65-69 (C+), 60-64 (C), 55-59 (D+), 50-54 (D), 40-49 (E), 0-39 (F).

Problem sets will be posted in the course web site throughout the semester. Some of them may be solved in class. These problems will not be graded, however, I encourage you to work through them. It will help you understanding the course material and consequently, increase the probability that you will do well in the course. Practice may not always make perfect, but it's a good start.

Deferred Exam Policy:

There are no makeups for missed midterm exams. Anyone missing the midterm exam will automatically have their final exam reweighted to be worth 100%.

NO multiple deferrals allowed: Students can defer only one of the two exams. If students defer more than one exams, the successive deferred exams will be marked zero.

Deferring the Final Exam: The deferred final exam policy will be applied only for those who completed all of the course requirements but the final exam. Students who do not complete one of the course requirements during the semester MUST attend the regular final exam session to complete the course. If a student were to miss a course requirement during the semester and has to defer the final exam as well then the student may submit a formal petition to the Faculty.

Requesting Deferred Final Exam

Students will be required to complete a Mach form requesting a deferred exam. For complete instructions for using the Mach form, please go to our website:
https://www.yorku.ca/laps/econ/undergraduate-programs/academic-resources/department-policies/deferred-standing/
The Mach form replaces the Final Exam/Assignment Deferred Standing Agreement (DSA).
A student must submit the form within 5 business days from the final exam date.

Tentative Sequence of Topics Covered and the Lecture Schedule

Session	Topics, Reading and Activity
01 W(Jan 12)	Topics: Functions of Many Variables, Tools for Comparative Statics: • Ch 11, 12
02 W(Jan 19)	
03 W(Jan 26)	
04 W(Feb 2)	**Midterm 1 (90 min + 30 extra min)**
05 W (Feb 9)	Topics: Multivariable Optimization, Constrained Optimization • Ch 13, 14
06 W(Feb 16)	
Reading Week: Feb 19 - 25	
07 W(Mar 2)	Topics: Multivariable Optimization, Constrained Optimization • Ch 13, 14
08 W(Mar 9)	
09 W(Mar 16) Drop Deadline: Mar 18	**Midterm 2 (90 min + 30 extra min)**
10 W(Mar 23)	Topics: Matrix Theory, Linear Programming • Ch 15, 16, 17
11 W(Mar 30)	
12 W(Apr 6)	
Final Exam	**April 12-29**

The above schedule may change slightly as the term progresses. Please check the course website for more info regarding the lecture notes, midterms and final exam coverage.

It may be very possible to make some adjustments of lectures and/or exams schedules. Students m ay also have handouts for the topics discussed in the class. It is students' responsibility to be aware of any policy (or schedule change), or to collect handouts from classes. If you miss classes, conta ct the instructor before or immediate after, and check if there is any policy change or handout distri buted.

There is no excuse for not knowing course policies or schedule changes, or for not having han douts.

Additional Information:

There may be tutorials offered for students in 1530 (a TA may go over problems germane to the course material). These are highly recommended. Note that any 1530 student, regardless of his/her section is welcome to bring their problems to me during my office hours. Some of the other instructors have this policy as well. (Please ensure that you **only** attend tests and exam for the section you are registered in).

There is a eclass website for this course where I post assignments, notes, old exams, announcements and the occasional bad joke. Please check regularly.

I regularly assign problem sets from the text and go over as many solutions as I can in class.

Important Course Information for Students:

All students are expected to familiarize themselves with the following information, available on the Senate Committee on Curriculum & Academic Standards webpage;
http://www.yorku.ca/secretariat/policies/index-policies.html/

- York's Academic Honesty Policy and Procedures/Academic Integrity Website

  Academic Honesty and Integrity: Conduct that violates the ethical or legal standards of the University community or of one's program or specialization is subject to severe penalties. Students are responsible for understanding the nature and consequences of these offences, as contained in the Senate Policy on Academic Honesty, found on the York University Senate WEB page:
  http://www.yorku.ca/secretariat/policies/document.php?document=69

- Ethics Review Process for research involving human participants
  http://www.yorku.ca/secretariat/policies/document.php?document=94

- Course requirement accommodation for students with disabilities, including physical, medical, systemic, learning and psychiatric disabilities
  http://www.yorku.ca/secretariat/policies/document.php?document=68

- Student Conduct Standards
  http://www.yorku.ca/oscr/standards.html

- Religious Observance Accommodation
  https://w2prod.sis.yorku.ca/Apps/WebObjects/cdm.woa/wa/regobs