

YORK UNIVERSITY

LA & PS  
DEPARTMENT OF ECONOMICS

Winter 2023

**AP/ECON 1540 3.0 R: Mathematics for Economists II**

M 16:00 - 19:00, in person, Class Location: SLH A

**Course Instructor Contact**

Instructor: Vassilios Bardis  
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Office Hours: on Zoom (TBA)  
Course website: on eClass.yorku.ca

**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. A deeper understanding of theories of demand (supply) and the foundations of demand (supply) functions and equilibrium analysis is developed through the analysis of multivariable functions and calculus, the introduction of mathematical notions of unconstrained and constrained optimization, matrix algebra 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.

**Some Important Dates**

Classes start / end	Jan. 9 / Apr. 10
Last date to add a course without / with permission of instructor	Jan. 22 / Feb. 6
<i>Last date to drop course without receiving a grade</i>	<i>March 17</i>
Course Withdrawal Period (withdraw from a course and receive a "W" on the transcript)	Mar. 18 – Apr. 10
Examination Period	Apr. 12-27
Reading Week	Feb. 18-24
Holiday (University Closed)	April 7

## Grading

The course grade will be based on **online term quizzes** (15%), a **midterm exam** (30%, in person) and a **final exam** (55%, in person). All exams in the course are **in-person**.

The course grade will be calculated as follows. Let Q denote the average of the *best two of four* online quizzes, M denote the midterm exam grade and X denote the final exam grade (each grade out of 100). Then the course grade, Y, will be

$$Y = \max ( 0.15 Q + 0.3 M + 0.55 X , 0.15Q + 0.85X).$$

*Quiz dates and the midterm exam date will be posted on the course website on the first week of classes.* There are no deferred quizzes and there is no deferred midterm exam. If the midterm exam is not taken, then the weight is transferred to the final exam. There will a deferred final exam for students who qualify (see below).

The final exam will be comprehensive and will held during the examination period on the date and time scheduled by the University (to be announced). The opportunity to write a deferred exam will be available to students for whom a religious observance coincides with the date of the final exam or who are unable to complete the exam due to reasons beyond their control. If this applies to you, please email me to let me know. (After the date of the final exam, students who did not complete the final exam must request deferred standing by completing the *required mach form*. This information is available on the department website at <https://www.yorku.ca/laps/econ/undergraduate-programs/academic-resources/department-policies/deferred-standing/>

**Observance Dates:** Students for whom the midterm test date coincides with a religious observance must let me know within the first two week of classes. If there is such a conflict with respect to the final exam, students must complete an 'Examination Accommodation Agreement' soon after the final exam date is published. (This form can be obtained from the Registrar's office.)

**Policy on Reappraisal of Term Work:** Reappraisal of students' term work should be completed during the term.

**Note on Senate Policy on Academic Honesty:** Conduct that violates the ethical or legal standards of the University community or of one's program or specialization may result in serious consequences. Students are encouraged to familiarize themselves with the Senate Policy. **Please note that only simple calculators can be used during tests.**

**Note on the use of Electronic Devices:** All electronic devices must be turned off during class. Audio/visual recordings of any type are *not* allowed. Only basic calculators are allowed during tests and exams.

## Topics

(A detailed list of topics will be available on the course website on eClass.)

- a. Functions of several variables
- b. Multivariable Unconstrained and Constrained Optimization
- c. Linear Algebra

## Course Textbook (Optional but Strongly Recommended)

*Essential Mathematics for Economic Analysis*, fifth edition, Knut Sydsaeter and Peter Hammond with Arne Strom, Prentice Hall.

## Useful Links

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

- Course requirement accommodation for students with disabilities, including physical, medical, systemic, learning and psychiatric disabilities: <https://accessibility.students.yorku.ca/>.
- [Student Guide to Moodle](#)
- [Zoom@YorkU Best Practices](#)
- [Zoom@YorkU User Reference Guide](#)
- [Computing for Students Website](#)
- [Student Guide to eLearning at York University](#)