

YORK UNIVERSITY
LA & PS
DEPARTMENT OF ECONOMICS

Winter 2022

AP/ECON 1540 3.0 M: Mathematics for Economists II
R 14:30 - 17:30, in person, Class Location: ACW 004

Course Instructor Contact

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

Please Note:

- “The Winter 2022 academic term will commence as planned on January 10 (with some exceptions, for example, Osgoode Hall Law School); however the **in-person delivery of courses and on-campus activities are planned to resume on January 24**. Between January 10 and January 24, all classes and support services will be delivered in a remote format unless it is essential that they be delivered in person.”
- Accordingly, the content of the course during the first two weeks will be delivered **asynchronously online (no live lectures)** by posting videos and/or handouts on the course website on eClass.
- The course website will become available by the first week of classes and posting of course material will begin on the officially scheduled start date/time of the class, **January 13, 2:30pm**.

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.

Grading

The course grade will be based **on two term tests** and a **final exam**.

There are no deferred term tests. There will a deferred final exam for students who qualify (see below).

The course grade will be calculated as follows. Let H and L denote the highest and lowest of the two term test grades and X denote the final exam grade (each grade out of 100). Then the course grade, Y, will be

$$Y = \max (0.25 H + 0.25 L + 0.5 X , .35 H + .65 X, 0.85X).$$

It follows from the above that

- the maximum weight of the term work is 50% and the minimum weight of the final exam is 50%.
- for students who complete both tests, the worst test will be ignored if it benefits the student.
- for students who complete only one of the two tests, the weight of the test is 35% and the final exam weight is 65%.
- if both tests are *not* completed, then a grade of *zero* will be assigned to 15% of the course grade and the weight of the final exam will be 85%.
- the weight of the final exam cannot exceed 85%.

Term Work

Each test will be held during our class times. The composition of each test will rely more heavily on the material covered in the three to four weeks preceding the date of the test.

The term test dates will be posted on the course website on the first week of classes.

Final Exam

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* attend 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/>

Reappraisal of Term Work

It is strongly recommended that reappraisal of students' term work should be completed during the course of the term and prior to the submission of final course grades.

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. Please familiarize yourself with the meaning of academic integrity by completing SPARK's [Academic Integrity module](#) at the beginning of the course. Breaches of academic integrity range from cheating to plagiarism (i.e., the improper crediting of another's work, the representation of another's ideas as your own, etc.). All instances of academic dishonesty in this course will be reported to the appropriate university authorities, and can be punishable according to the [Senate Policy on Academic Honesty](#).

Topics

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

- a. Functions of several variables
- b. Multivariable optimization
- c. Constrained optimization
- d. Linear Algebra
- e. Linear programming

Course Textbook (Optional but Strongly Recommended)

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

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 simple calculators are allowed during tests and exams.

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](#)

Some Important Dates

Classes start / end	Jan. 10 / April 10
Last date to add a course without / with permission of instructor	Jan. 23 / Feb. 7
<i>Last date to drop course without receiving a grade</i>	<i>March 18</i>
Course Withdrawal Period (withdraw from a course and receive a "W" on the transcript)	March 19 – April 10
Examination Period	April 12 - 29
Reading Week	Feb. 19 - 25
Holiday (University Closed)	Feb. 21, April 15