



**Carleton
University**

Department
of Economics

ECON 1401 A

Elementary Mathematics for Economics I

Fall 2026

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Lecture time:

Mondays: 1805-2055 HRS (TBA)

Tutorials:

Mondays 1635-1725 HRS (Tutorial, A01, SA 313)

Mondays 1535-1625 HRS (Tutorial, A02, SA 313)

Mondays 1435-1525 HRS (Tutorial, A03, SA 313)

Office Hours: 16:30-17:30 (Mondays or by appointment)

TA: TBA

Welcome to ECON 1401: Elementary Mathematics for Economics I.

Land Acknowledgement

I acknowledge that Carleton University is located on the unceded and surrendered territory of the Algonquin Anishinaabe Nation. I pay respect to the Algonquin people and all First Nations, Inuit, and Métis peoples, whose enduring presence, cultures, and contributions continue to enrich this land.

Brightspace Course Page: <https://brightspace.carleton.ca/d2l/home/449348>

Preclusions and Prerequisites

Ontario Grade-12 U Advanced Functions, or ECON 0005 with a minimum grade of C- or higher, or MATH 0005 with a minimum grade of C- or higher, or equivalent; and ECON 1001 or ECON 1000 or FYSM 1003, which may be taken concurrently with ECON 1401. Students who believe they have taken a similar background course or courses from another university should provide appropriate documentation to the Department of Economics Undergraduate Administrator, Sean Hall, seanhall3@cunet.carleton.ca to check that credit may be given for all courses.

Precludes additional credit for BIT 1000, BIT 1001, BIT 1100, BIT 1101, BIT 1200, BIT 1201, MATH 1007, MATH 1009, MATH 1104, MATH 1107, MATH 1119, MATH 1052, MATH 1152, MATH 1401.

Course Description

- This course is delivered **in person** and introduces the mathematical tools required for introductory economic analysis. Topics include linear and nonlinear functions and models, including applications to cost, revenue, profit, demand, and supply analysis. Students will also study matrices, graphing techniques (including scatterplots, time-series graphs, and functional relationships), systems of linear equations, Keynesian national income analysis, and the mathematics of finance and growth, including simple and compound interest, annuities, mortgages, and loans.

Learning Outcomes

By the end of this course, students will be able to:

- Apply elementary mathematical techniques to solve economic problems.
- Analyze and interpret linear and nonlinear economic models.
- Solve systems of linear equations and apply them to economic analysis.
- Construct and interpret graphs are commonly used in economics.
- Perform calculations involving simple and compound interest, annuities, mortgages, and loans.
- Apply matrix algebra to introductory economic applications.
- Develop the quantitative reasoning skills necessary for further study in economics.

The emphasis throughout the course is not only on mathematical techniques but also on their practical application to economic analysis.

Textbook

The textbook required for the course is: *Maths for Economics, 5th edition* By Geoff Renshaw, Oxford University Press. ISBN: 978-0-19883950-7 Available from Carleton University Bookstore. Rent for 180 days: \$53.99; for 365 days \$62.30. Buy New \$105.75 Digital \$83.06.

Course Content

- Topic I: Foundations
 - Chapter 3: Linear equations
 - Chapter 4: Quadratic equations
 - Chapter 5: Some further equations and techniques

- Topic II: Multivariable Algebra Chapter 19: Matrix algebra
- Topic III: Mathematics of Finance and Growth
 - Chapter 10: Compound growth and present discounted value
 - Chapter 11: The exponential function and logarithms
 - Chapter 12: Continuous growth and the natural exponential function
 - Chapter 13: Derivatives of exponential and logarithmic functions
- Topic IV: Some Further Topics
 - Chapter 20: Difference and differential equations

Course Evaluation

The basis for determining your final grade on this course is as follows:

Note: The dates for assignments, midterm examinations, and other assessments are **tentative** and may be adjusted depending on the pace of the course and the progress of the class. Any changes will be announced in class and posted on Brightspace well in advance.

Assessment	Date	Submission/Location	Weight (%)
Midterm I	October 19, 2026	In class (the first half of the class will be dedicated to the midterm)	20
Assignment	Due: November 16, 2026	Submit during the tutorial	10
Midterm II	November 23, 2026	In class (the first half of the class will be dedicated to the midterm)	25
Final Examination	During the University's official final examination period	In person	45
Total			100

- The final grade will be based on the following components:
- **There will be no deferred mid-term examinations.**
- If you are unable to write a midterm due to illness or another documented emergency, you must submit an [Academic Consideration for Coursework Form](#) request online **before the scheduled midterm**. The Registrar's Office will notify the instructor within one business day.
- If your request for academic consideration is approved, the weight of the missed midterm will be transferred to the final examination.

- Students who miss a midterm without an approved Academic Consideration request will receive a grade of **zero** for that midterm.
- Students who submit an approved **Academic Consideration for Coursework** request before a scheduled midterm may miss **a maximum of one midterm**. In such cases, the weight of the missed midterm will be transferred to the final examination. Consequently, the **maximum weight of the final examination will be 65%**.
- A **DEF (Deferred Final)** grade at the end of this course precludes continued registration in any course for which this course is a prerequisite until the deferred examination has been completed and a final grade assigned.
- **All midterm examinations and the final examination are closed-book**. No books, notes, or other unauthorized materials are permitted during the examinations.
- All midterm examinations and the final examination will be conducted in person.
- Students must write **all midterm examinations in pen only**. The final examination may be completed using the writing instrument(s) specified by the University for the examination.
- The **final examination is cumulative** and will assess material covered throughout the entire course.
- The final examination will be a **three-hour, in-person examination** scheduled by the University's Scheduling Office.

Deferred Final Examination

- Students who are unable to write the final examination due to illness or other circumstances beyond their control may apply for a deferred final examination through the **Registrar's Office**. Applications must be submitted **within three working days** of the originally scheduled final examination.
- A deferred final examination carries the **same weight** as the original final examination in the calculation of the final course grade. The deferred examination will **not** be identical to the original final examination.
- Students are eligible to write a deferred final examination only if they are **in good academic standing** in the course. For the purposes of this course, students are considered to be in good standing if they have completed all required coursework and have earned **at least 40% of the available marks prior to the final examination**.

Tutorial Groups

- Weekly tutorials will be conducted. The TA will show the students the applications of concepts and theories presented in classes step by step by using some examples.

Practice Problems

- Students are encouraged to work through as many textbook problems as possible, since these are the best way to learn the course and prepare for the exams as well. Moreover, I will provide four sets of practice problems.

Communication

- Brightspace and the Carleton University email system will be used extensively for course communication. Students are expected to check **Brightspace** and their **Carleton email** regularly for announcements, course materials, updates, and other important information.
- Access to Brightspace and Carleton email requires a **MyCarletonOne** account. For assistance with your MyCarletonOne account, visit the Carleton ITS website or contact the **ITS Service Desk** (4th Floor, MacOdrum Library; Tel: 613-520-3700).

Academic Integrity and Use of Generative AI

- Students are expected to uphold the highest standards of academic integrity and are responsible for familiarizing themselves with Carleton University's policies on plagiarism, academic integrity, and student responsibilities.
- Unless explicitly authorized by the instructor in writing, the use of ChatGPT or any other generative artificial intelligence (AI) tools to complete coursework, assignments, quizzes, examinations, or other graded assessments is strictly prohibited. Unauthorized use of generative AI may constitute academic misconduct under Carleton University's Academic Integrity Policy.

Requests for Academic Accommodation

- Students requiring academic accommodations are encouraged to contact the appropriate office as early as possible. Accommodation requests should be made as soon as the need becomes known.

Pregnancy obligation

- Students requiring accommodation related to pregnancy should contact the instructor during the first two weeks of the term, or as soon as possible after the need for accommodation becomes known. Additional information is available through Carleton University's Equity and Inclusive Communities Office. For more details, visit the Equity Services website:

carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf

Religious obligation

- Students requesting accommodation for religious obligations should contact the instructor during the first two weeks of the term, or as soon as the need for accommodation becomes known. Further information is available through Carleton University's Equity and Inclusive Communities Office. For more details, visit the Equity Services website:

carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf

Academic Accommodations for Students with Disabilities

- Students with documented disabilities who require academic accommodations should register with the **Paul Menton Centre for Students with Disabilities (PMC)** at 613-520-6608 or pmc@carleton.ca
- Students requiring accommodations for in-class tests or examinations must contact the **PMC no later than two weeks before** the scheduled test or examination to ensure that appropriate arrangements can be made.

Questions and Assistance

If you have questions about the course or encounter any difficulties during the term, please do not hesitate to contact me. I am happy to help and encourage you to seek assistance early whenever possible.