



Carleton University Department of Economics

Winter 2026

ECON 3001 B

Mathematical Methods of Economics

The Instructor

Instructor: Ahmad Malgarai

Email Address: ahmadshahmalgarai@cmail.carleton.ca

Office Location: Loeb D881

Office Hours: Monday 16:30 to 17:30 Hrs (4:30pm – 5:30pm)

The Course

Course Location/Delivery: In person.

Course Day and Time: M/W 14:35 – 15:55 HRS (2:30pm – 3:55pm)

TA: Man Wai Mak

Email Address: ManWaiMak@cmail.carleton.ca

Tutorials: Wednesdays 16:05 – 15:25 HRS (4:05pm – 5:25pm)

Office Location: TBD

Office Hours: TBD

Brightspace Course Page: <https://brightspace.carleton.ca/d2l/home/365086>

Course Description

This course covers mathematical tools for economic analysis. The materials covered in this course include some key mathematical concepts, matrix algebra for linear models, differentiation and integration, and optimization.

Learning Outcomes

Students are expected to learn how to set up mathematical economic models and solve them by the end of this course.

Preclusions and Prerequisites

ECON 1001 or ECON 1000 or FYSM 1003 with a grade of C- or higher; and ECON 1401 and ECON 1402 (or equivalent) with a grade of C- or higher in each and a combined grade point average in ECON 1401 and ECON 1402 of 6.50 or higher. Students who believe they have taken a similar 2 background course or courses from another university must provide appropriate documentation to the Department of Economics Undergraduate Administrator, Sean Hall. A

grade of C+ or higher from this course is required to qualify for ECON 4001, ECON 4020, ECON 4021, ECON 4025, ECON 4026 and a grade of C- or higher for ECON 4053. DEF (Deferred final grade) status at the end of this course precludes (continued) registration in any other course for which the former is a prerequisite.

Preclusions

Precludes additional credit for Econ 2400 (no longer offered).

Course Calendar

1. Key concepts (Ch. 1-3)
2. Linear models and matrix algebra (Ch. 4-5)
3. Differentiation and comparative-static analysis (Ch. 6-8)
4. Exponential and logarithmic functions (Ch. 10)
5. Unconstrained optimization (Ch. 9, 11)
6. Constrained optimization (Ch. 12, 13)
7. Integration (Ch. 14)

Textbooks and Readings

Texts

Fundamental Methods of Mathematical Economics (4th Edition).

Print edition: Available at the Carleton University Bookstore for **\$99.95**.

eBook edition: Available for **\$69.00**.

Title	Author(s)	ISBN
Fundamental Methods of Mathematical Economics (Fourth Edition)	Alpha C. Chiang and Kevin Wainwright	9780070109100

Evaluation

Evaluation

Assignment/Test	Date	Mode of Delivery	Percentage of Grade
Assignment I	Feb 02, 2026	In-Person	10
Midterm I	March 02, 2026	In-Person	20
Midterm II	April 01, 2026	In-Person	20
Final		In-person	50
			Total: 100%

Information About Assignments

The grading of the problem sets is based on effort and completeness. In answering the questions, students are expected to show their work, i.e., write down key logical steps as well as final answers.

Late Policies and Extensions for Term Work

Late submissions of problem sets will not be accepted unless arrangements are made in advance.

Midterm/Test Policies

- If you are absent for a midterm, email me as soon as possible to reschedule. I reserve the right to request a [Self-Declaration form](#) or PMC letter of accommodation depending on the length of incapacitation.
- If you are absent for a midterm, email me as soon as possible to discuss how we will weight your course evaluations differently. I reserve the right to request a [Self-Declaration form](#) or PMC letter of accommodation depending on the length of incapacitation.
- As it is required that all course evaluations be submitted to have good standing in this course, an absence from a midterm will result in withdrawal or a failing grade for this course.

Final Exam

The Final Exam will be in-person and scheduled by University Scheduling and Examination Services during the final exam period.

Students should not make travel plans during the exam schedule that may conflict with their exam dates until the exam schedule is announced, since an exam conflict with travel plans is not a valid reason for missing a final exam.

Satisfactory Performance Criteria

Students must fulfill all the course requirements, including the final exam, to achieve a passing grade (D- or higher).

Deferred Finals

Students who do not write the final examination because of illness or other circumstances beyond their control may apply for to write a deferred final examination by contacting the Registrar's Office no later than three working days after the original final examination was scheduled. If a student writes a deferred examination, the deferred examination will carry the same weight as the final examination in determining the course grade. Any deferred examination will not be identical to the original final examination.

E-Proctoring

E-proctoring will not be used for evaluations in this course. Students writing the Distance Exams may be asked to use CoMaS eProctoring to be arranged by Scheduling and Examination Services. You can find more information at <https://carleton.ca/ses/e-proctoring/>.

Distance Exams

Students who are living/studying outside of the Ottawa area may apply to Scheduling and Exam Services to write the exam at a distance. You can find information about the deadline for applying for a distance exam this term and the application here <https://carleton.ca/ses/distance-exams/>.

Standing in a course is determined by the course instructor subject to the approval of the Faculty Dean. This means that grades submitted by the instructor may be subject to revision. No grades are final until they have been approved by the Dean.

Plagiarism, Resources and Mental Health, Academic Accommodations

You are responsible for reading and knowing the information about plagiarism, Carleton University resources, and academic accommodations found [HERE](#). . Examples of plagiarism include, but are not limited to:

- any submission prepared in whole or in part, by someone else, including the unauthorized use of generative AI tools (e.g., ChatGPT).
- any submission prepared in whole or in part, by someone else.