University of Victoria | Economics

ECON 350 A01
Mathematical Economics: Introduction to Static Methods

Winter Session: 202509 – First Term, Fall 2025
CRN: 11119 (11120 for the lab)
Unit Value: 1.5

Class schedule: Takes place September 4th to December 1st, 2025
Lectures – Monday, Wednesday, Thursday, 3:30–4:20 PM, MacLaurin D010
Lab – Wednesday 4:30–5:20 PM, BEC 170
Instructor office hours – Wednesday 10:00-11:00 AM, Zoom

Instructor: Dr. Colette Salemi | csalemi@uvic.ca
There are rules about when students can email me, see below

TA: Ms. Janet Burlacu | jburlacu@uvic.ca
There are rules about when students can email the TA, see below

Course Content

This course will familiarize you with the mathematical tools most frequently used by economists. Expect there to be considerable overlap with material in your prior courses, as part of the purpose here is to give you more practice using these tools. Topics include single and multiple variable calculus, unconstrained and constrained optimization, matrix algebra and some basic real analysis. The emphasis is mostly on the tools of analysis rather than the results.

Course prerequisites/corequisites

Students must have completed **MATH 208 – Mathematics for Economics and Econometrics (1.5)** with a minimum grade of B. Alternatively, students may complete **MATH 101 – Calculus II (1.5)**, plus one of **MATH 110 – Matrix Algebra for Engineers (1.5)** or **MATH 211 – Matrix Algebra I (1.5)**, and **MATH 200 – Calculus III (1.5)**. In addition, students must have completed, or be concurrently enrolled in, **ECON 203 – Intermediate Microeconomics I (1.5).**

Textbook and Course Notes

Mathematics for Economics by Michael Hoy, John Livernois, Chris McKenna, Ray Rees, and Thanasis Stengos (MIT Press: Cambridge 2022). The instructor is working off of the second edition. Any edition second or beyond is fine. Students are not required to purchase the textbook new – the instructor encourages students to borrow from a peer, find a PDF version, or order it used online.

Metaphorically, the textbook provides a comprehensive landscape for the class. The class more directly draws from a set of notes written by Dr. David Scoones. Dr. Scoones has kindly granted permission for us to use the notes during the Fall 2025 semester. These notes are basically the map that directs us across that landscape.

Dr. Scoones' notes are for the exclusive use of students enrolled in ECON 350. They may not be shared, posted, or uploaded onto websites. They may not be sold or commercialized in any way. Failure to abide by these rules constitutes a violation of academic integrity and will be reported.

Learning Outcomes

When you have successfully completed this course, you

- will have reviewed basic properties of sets and functions underlying economic modelling
- be able to explain the meaning of logical terms used in the construction and examination of economic models
- will have practice applying algebra and calculus in the construction of economic models
- will be able to define and identify functional form restrictions satisfying properties of continuity, concavity, convexity
- define the meaning of equilibrium in a static economic model
- understand the relationship between the number of endogenous and exogenous variables and equations and the existence and form of a model's equilibrium
- be able to define and test for parameter and functional form restrictions that ensuring the existence of local and global equilibria
- be able to conduct and interpret comparative static analysis of an economic model
- will have reviewed various basic and familiar economic models when presented mathematically

Brightspace

I use Brightspace to post notes and raw grades and to make announcements. That's it.

Course Structure, Assessments, and Grading

Lecture content

I lecture on Mondays and Wednesdays. On Thursdays students complete an in-class activity for a grade.

There is a Lab on Tuesdays. The TA is working hard to make the lab useful to students. Student attendance is expected and failure to attend will be seen as a sign of poor engagement.

Use of AI

Students cannot use AI to complete their in-class activity: this is considered cheating, and any student caught using AI during Thursday in-class exercises will be reported for academic misconduct.

AI can be a useful tool for this class – I encourage students to experiment with using it for help with simple proofs, providing real-world examples, breaking down concepts step-by-step, etc. But remember that AI is not perfect, and if AI provides incorrect information that results in a loss of points on an exam or in-class activity, this is not grounds for points recovery. In other words, students are responsible for any negative consequences of relying on AI for course help.

Students are prohibited from feeding the course notes into an AI platform. This is a violation of Dr. Scoones' intellectual property rights. Failure to abide by this rule is considered academic misconduct.

Grading Scheme

There are no problem sets and the only outside work students have to do is reviewing the material, as well as review of concepts and practice.

The in-class exercises are worth 40% of the grade. There will be 11 in-class exercises and I drop the lowest two grades. Each of the nine highest score ICEs is weighted the same.

There are two short (50 minute) **midterms, each worth 15% of the grade** (30% in total). The **final exam is worth 30% of the final grade** and will be 2 hours long. The final is cumulative but will focus more heavily on content from the second half of the term.

Mandatory/Essential Course Components

The final exam is the only "mandatory" course component as defined by the university.

Dates of Assessments, Due Dates of Assignments

In-class activities: completed every Thursday class meeting in person. They are due at the end of class. There is no make-up opportunity: when students fail to complete them, they receive a zero. The lowest two are dropped to accommodate the possibility that a student occasionally misses a class for a legitimate reason, such as having a contagious illness.

Crucially, students may NOT use any electronic devices aside from calculators during in-class activities. That means no laptops, no tablets, no phones, no smart watches, etc. This is because of the potential for students to cheat using AI. Students may bring printouts of Dr. Scoones' notes, or handwritten notes.

Midterm(s): The midterm exam(s) is/are scheduled for October 9th and November 13th in class. You can have a pencil and a non-graphing calculator.

Final exam: In person. You can have a pencil and a non-graphing calculator.

Obviously, students do not qualify for an academic concession if travel plans conflict with the final examination.

Grade adjustment: the instructor reserves the right to marginally adjust grades at the end of the semester to penalize poor student conduct – repeated disengagement, distraction, and other activities that worsen the classroom experience are grounds for losing 1–5 points. The instructor also maintains the right to marginally bump grades up, typically 1-2 points, for repeatedly prosocial, positive, and hard-working behavior.

Grading Scale

A+ 90-100% |A 85-89% | A- 80-84%
B+ 77-79% | B 73-76% | B- 70-72%
C+ 65-69% | C 60-64%
D 50-59%
F or N 0-49%

Missing Assessments

If a student misses a midterm exam, they are automatically scheduled to take it on the next department exam make-up day. This represents the student's final opportunity to take the midterm exam.

Failure to appear for the final exam results in a deferral and an automatic N grade at the end of the term. The student is automatically scheduled to take the final exam on the final exam make-up day in the first month of the subsequent term. Failure to appear for the final exam during the make-up day will result in a permanent N grade.

As already stated, there are no make-up opportunities for in-class exercises under any circumstances.

Travel notice

The TA will teach the following classes to facilitate instructor research travel: October 23rd and possibly November 6th.

Course Structure

This is a tentative plan for the course. We will adjust the pacing as we go, but the schedule for in-class exercises and midterms is fixed.

Week	Dates (Fall 2025)	Topic	Chapter(s)	Due Dates / Exam Information
1	Thu Sep 4	Introduction. Sets. Truth tables.	1	No in-class exercise
2	Mon Sep 8; Tue Sep 9; Thu Sep 11	Introduction. Models & Logic. Functions	2	In-class exercise #1
3	Mon Sep 15; Tue Sep 16; Thu Sep 18	Sequences and Limits	3	In-class exercise #2
4	Mon Sep 22; Tue Sep 23; Thu Sep 25	Univariate Calculus: Continuity, Derivatives	4, 5	In-class exercise #3
5	Mon Sep 29; Tue Sep 30; Thu Oct 2	Univariate Calculus: Optimization	6	In-class exercise #4
6	Mon Oct 6; Tue Oct 7; Thu Oct 9	Linear Algebra: Systems of Equations, Matrices	7, 8	**Midterm 1 (Thu Oct 9)** — covers Weeks 1–5
7	Tue Oct 14; Thu Oct 16 *(no class Mon Oct 13 – Thanksgiving)*	Linear Algebra: Determinants and Inverses	9	In-class exercise #5
8	Mon Oct 20; Tue Oct 21; Thu Oct 23	Linear Algebra: Advanced Topics	10	In-class exercise #6
9	Mon Oct 27; Tue Oct 28; Thu Oct 30	Multivariate Calculus: Functions of n-Variables	11	In-class exercise #7
10	Mon Nov 3; Tue Nov 4; Thu Nov 6	Multivariate Calculus: Unconstrained Optimization	12	In-class exercise #8
11	Thu Nov 13 *(no class Nov 10–12 – Reading Break)*	Multivariate Calculus: Constrained Optimization	13	**Midterm 2 (Thu Nov 13)**— covers Weeks 6–10
12	Mon Nov 17; Tue Nov 18; Thu Nov 20	Multivariate Calculus: Comparative Statics	14	In-class exercise #9
13	Mon Nov 24; Tue Nov 25; Thu Nov 27	Multivariate Calculus: Concave Programming	15	In-class exercise #10
14	Mon Dec 1; Wed Dec 3	Review (Ch. 1–15)		In-class exercise #11 (Wed.)

E-mail Correspondence

The instructor only responds to student emails on Mondays, Wednesdays, and Thursdays. Emails to the instructor and TA are restricted. Students may email the instructor or TA:

1. If they have a question about the course that is NOT answered in this course overview

document.
2. If they have good reason to believe that a mistake occurred with grading, an answer key, a date on the course calendar, etc.
3. If the student needs to schedule a separate Office Hour time because they have a course at the same time as regular office hours (the student must provide the course name and number in their request).

These are the only reasons that a student is to contact the instructor or TA during the term. Upon completion of the class, students with strong performances are welcome to request a reference letter via email.

Electronic Devices

Electronic devices are discouraged but not banned on Monday or Wednesday classes or labs. But as already stated, students may not use any electronic devices on Thursdays when we complete in-class exercises.

I ask that you respect my privacy and the privacy of the TA. That **means no photography or video recording in class**. Audio recording is fine.

Cheating in ECON 350

There are three potential academic integrity violations that can occur in ECON 350:

1. A student copies off of another student or uses banned technology or notes to look up answers during a Midterm or the Final Exam
2. A student fills in and submits an In Class Exercise for a peer (or peers) who is (are) absent from class, a form of forgery.
3. A student uses AI or other banned online resources to complete their in-class exercise.

If any of these incidents arise, I will immediately file an academic misconduct report against the student.

THE REST OF THIS DOCUMENT IS STANDARDIZED UNIVERSITY CONTENT. IT APPLIES TO ECON 350 BUT IS NOT SPECIFIC TO THIS COURSE

Waitlist Policies

Instructors have no discretion to admit waitlisted students or raise the cap on the course. Students on the waitlist should discuss with the instructor how to ensure they are not behind with coursework in the event they are admitted. Registered students who do not participate as specified in this outline during the first 7 calendar days from the start of the course may be dropped from the course. Registered students who decide not to take the course are responsible for dropping the course and are urged to do so promptly out of courtesy toward waitlisted students. Waitlist offers cease after the last date for adding courses irrespective of published waitlists.

Academic Integrity

A student who is found to have engaged in unethical academic behaviour, including the practices described in the Policy on Academic Integrity in the University Calendar, is subject to penalty by the University.

University Policies and Statements

Please note that this course is executed in a manner consistent with these University statements and policies.

b. University Calendar - Section "Information for all students"
c. Creating a respectful, inclusive and productive learning environment
d. Academic Integrity
e. Academic Concession Regulations, Academic Concession and Accommodation, Academic Accommodation – Policy AC1205
f. Accommodation of Religious Observance
g. Student Conduct
h. Non-academic Student Misconduct
i. Accessibility
j. Diversity / EDI
k. Equity statement
l. Sexualized Violence Prevention and Response
m. Discrimination and Harassment Policy

Resources for students

a. Student wellness
b. Centre for Accessible Learning
c. UVic Learn Anywhere. UVic Learn Anywhere is the primary learning resource for students that offers many learning workshops and resources to help students with academics and learning strategies.
d. Library resources
e. Centre for Academic Communication (CAC)

f. Learning Strategies Program (LSP)
g. Academic Advising
h. Economics Undergraduate Advising: ecadvice@uvic.ca
i. Student Awards and Financial Aid
j. International Student Advising
k. Indigenous student services (ISS)
l. Student groups and resources including UVic Ombudsperson

Student Experience of Learning (SEL) Survey

Towards the end of term, you will have the opportunity to complete a confidential SEL survey regarding your learning experience.

UVic Land Acknowledgement

We acknowledge and respect the Lək̓ʷəŋən (Songhees and Xʷsepsəm/Esquimalt) Peoples on whose territory the university stands, and the Lək̓ʷəŋən and W̱SÁNEĆ Peoples whose historical relationships with the land continue to this day.