University of Victoria | Economics

ECON 401 A01 (CRN 21048)
Advanced Topics in Macroeconomic Theory

Winter Session: 2026 01 – CRN 21048, Unit Value 1.5, Contact hours (classes): 3.0. Course schedule: Monday, Thursday, 3:30pm–4:50pm, BEC Building, Room 363. Updated December 10th 2025.

UVic Land Acknowledgement

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

Instructor Name: Marco Cozzi

Office: BEC 368

Method of contact: E-Mail, mcozzi _@_ uvic.ca (For legitimate questions and concerns, I'll get back within two business days).

Office Hours (in person): Monday: 2:30pm–3:15pm, Thursday: 5:00pm–5:45pm

TA Name: There is no TA for the course.

Teaching and assessment modality statement

This course is face to face and all exams are held in person.

Course Content

The course discusses general equilibrium theory and introduces students to dynamic models of growth and business cycle fluctuations.

Students will learn a mix of theoretical and applied (quantitative) methods that are instrumental for the analysis of macroeconomic issues with a modern approach.

An important goal of the course is to provide the students with a set of methods useful to study dynamic economies. A sizable portion of the course will focus on the numerical computation of aggregate variables.

Learning Outcomes

Students will:

- *Apply critical thinking to interpret aggregate economic phenomena*
- *Acquire mathematical skills useful for the study of dynamic economies (e.g., optimal control and dynamic programming)*
- *Apply computational and empirical methods to perform a quantitative analysis of macroeconomic outcomes*
- *Analyze complex macroeconomic issues, using realistic models*
- *Perform formal quantitative evaluations of policy reforms*
- *Develop a critical understanding of the recent macroeconomics literature*

Course prerequisites/corequisites

Prerequisites: ECON 204; ECON 313, ECON 350, ECON 351. Declared Honours in Economics (BSc), or permission by the Economics department.

Repeating Courses

Be aware of the policy regarding the repeating of courses; see University Calendar.

Textbook/Software

Textbook: There is no single textbook presenting all the course topics in an accessible way. Therefore, there are (portions of) three suggested books. These books are available at the library for digital download. For some parts of the course, I will provide detailed lecture notes.

DD: DeJong, D. and C. Dave, *Structural Macroeconometrics* (2nd edition), Princeton University Press, 2011.

H: Heer, B., *Public Economics*, Springer, 2019.

NFR: Novales, A., Fernandez, E., and J. Ruiz, *Economic Growth, Theory and Numerical Solution Methods* (3rd edition), Springer, 2022.

For some topics, the following books are useful further references (the first one is available at the library for digital download):

L: Levendis, J., *Time Series Econometrics. Learning Through Replication*, Springer, 2018.

W: Wickens, M., *Macroeconomic Theory* (2nd Edition), Princeton University Press, 2012.

BS: Barro, R. and X. Sala-i-Martin, *Economic Growth* (2nd edition), MIT Press, 2004.

R: Romer, D., *Advanced Macroeconomics* (5th Edition), McGraw Hill, 2019.

Software: for the numerical analysis, we are going to rely heavily on Dynare (http://www.dynare.org/), a software that allows for an easy specification, numerical solution and (often) estimation of dynamic models.

Although some computer labs on campus have recent Dynare versions installed, it is a free software, and students are encouraged to install it in their own computers. Dynare relies on other platforms (Octave or Matlab) to perform the computations, so it cannot be used as a stand-alone software. Octave is a free software, but it is slow. Matlab is a more complete option, but it is also quite expensive. Currently, UVic offers free student licenses, which expire once the students graduate. Unfortunately, Dynare is not compatible with Python (yet). This is why we have to use a different programming language.

The following webpage explains how to get Matlab at UVic:

https://www.mathworks.com/academia/tah-portal/university-of-victoria-31110150.html

For Windows users, here you can get Octave (you must use version 10.3.0 with Dynare 6.x):

https://ftp.gnu.org/gnu/octave/windows/octave-10.3.0-w64-installer.exe

Here you can get the most recent version of Dynare:

http://www.dynare.org

Brightspace

Brightspace is used extensively for the course. All students are expected to be fully functional with the system. The lecture notes will be posted in *Brightspace.* Please note that the lecture notes online are only outlines of the actual lectures.

All announcements will be posted in *Brightspace*. Students are advised to check it frequently.

Course Structure, Assessments, and Grading

Use of AI

Please be advised that in this course you are not authorized to use any form of generative AI. To successfully complete course activities, generative AI is not required nor welcomed. Students should not make any use of generative AI tools such as ChatGPT, among others that use AI for content generation. As the University of Victoria states on its Academic Integrity Policy “Academic integrity requires commitment to the values of honesty, trust, fairness, respect, and responsibility.” Therefore, I expect you to comply with the course syllabus and I encourage you to enhance your academic experience in this course by refraining from use generative AI.

Grading

Grading Scheme

The course grade is determined as follows:

Assignments (2): 30% (two assignments submitted, and graded, each worth 15%).

Midterm exam: 25%.

Final Project (timed): 40%.

Participation (including attendance taken randomly): 5%.

Assignments: They are designed for the students to learn the course material in depth. They will be posted on Brightspace and submitted in the dedicated assignment drop-boxes before their deadline. Students are encouraged to discuss with other classmates how to answer them. However, every student must submit their own work, independently written up, and list all the people they worked with in the first page. During the term, there will be 2 assignments. All of them must be submitted. Answers must be submitted in specific file formats, and further details will be provided during the term. Each assignment will count 15% towards the final grade. Note: if caught copying other students' answers, the assignment will receive a grade of 0, which will be counted directly in the overall grade for the course. In addition, the standard procedures pertaining Academic Integrity will be initiated.

Participation: Details on this component will be given at the beginning of the course.

Final Project: Given the time demands of writing the Honours thesis, the final project will not be a full-blown research paper. It will be a timed project, akin to take-home exams (handled on Brightspace, and likely due in the April examination period). From the moment it will be circulated, the students will have at most one day to complete it. It will deal with the topics presented in the whole course. It will be open-book, but students must work by themselves on each of its components. UVic's rules about cheating and plagiarism do apply. The printouts of the codes used to generate the results must be submitted, and students might be asked to briefly explain them in dedicated Zoom meetings. The deadline to submit the projects will be announced during the term (for convenience, it might be the day when a final exam will be scheduled by the University).

The project must be submitted in a specific format, and further details will be provided in due time. Without illness or affliction, no extensions will be granted on the final project. If the final project is submitted late, points will be deducted per minute past the due date/time.

The quality of both the codes and the economic interpretation of the numerical results will form the basis for the assessment of the project. Since most economics students are hired based on the quality of the analysis they can perform, correct codes paired with comments that are lacking cannot receive high marks.

Grade concerns should be brought to the instructor as soon as possible. The grades of each assessment component are final after one week of being distributed. Students requesting to view their final projects must do so in writing and must request it within one week of the grades being posted.

Mandatory/Essential Course Components

Submitting all assignments is mandatory. Also, failure to submit the final project will result in a grade of N, regardless of the cumulative percentage on the course. N is a failing grade and factors into GPA as a value of 0.

Dates of Assessments, Due Dates of Assignments

Note: it is the student's responsibility to submit assignments in a timely fashion. Unless a student has a CAL accommodation, or an approved in-course extension, there will be no flexibility on when the assignments are due (or on how to submit them).

Assignments (tentative) Due Dates: The tentative deadlines are February 12th and March 30th. There may be some changes if necessary.

Midterm: The in-person midterm exam is scheduled on February 26th (TBC). More specific details will be given in due time. If you must miss the midterm test due to illness or family affliction, please contact me by email (a make-up exam for the midterm might be organized; otherwise, the weight of the midterm will be redistributed to the project and the assignments). Should you miss the exam without approval of the instructor, you will receive a grade of zero. Note: whenever needed, it is a student's responsibility to provide supporting documentation in a timely manner.

Final project: The day the project will be due could be scheduled by the University. It is cumulative, namely it covers the material presented in the whole course.

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%

Students should review the University's more detailed summary of grading.

Missing Assessments

Should students encounter a situation where they miss an exam or cannot submit an assignment/quiz at its due date, they may qualify for an academic concession. Students are required to indicate the specific grounds on which they are requesting an academic concession and to provide a justification outlining the impact of the circumstances on their ability to complete course requirements. For in-course extensions, please fill in the form and follow the instructions on the form. I will not respond to informal requests of

academic concessions. Note the automatic academic concession outlined above, such that the weight of a missed midterm for a legitimate reason might be shifted to the other components.

Students are advised not to make work or travel plans until after the examination timetable has been finalized. Students who wish to finalize their travel plans at an earlier date should book flights that depart after the end of the examination period. Students do not qualify for an academic concession if travel plans conflict with the examination.

Appeals

Depending on the nature of your concern, the order in which you should normally try to resolve the matter is:

1. Me, the course instructor
2. the Associate Chair: econassoc@uvic.ca
3. the Associate Dean of Academic Advising
4. the Senate.

If you're seeking a formal review of an assigned grade, you should also consult the regulations in the academic calendar regarding review of an assigned grade.

I only respond to grading inquiries in writing. You must file your question within 1 week of issuance of your grade. The grades of each assessment component are final after one week of being distributed.

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

Academic integrity requires commitment to the values of honesty, trust, fairness, respect, and responsibility. Students are expected to observe the same standards of scholarly integrity as their academic and professional counterparts. 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.

The University reserves the right to use a plagiarism software to detect violations of academic integrity.

University Policies and Statements

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

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

I value your feedback on this course. Towards the end of term, you will have the opportunity to complete a confidential SEL survey regarding your learning experience. The survey is vital to providing feedback to me regarding the course and my teaching, as well as to help the department improve the overall program for students in the future.

Course Structure

The following list is likely to change. Please ask me in due time for the detailed list of book sections that you are supposed to read.

1) *Math Preliminaries and Optimal Control*

Lecture notes, Mathematical Appendix in NFR, W, or BS.

2) *Economic Dynamics: the Basics*

H Ch. 1 and 2; DD Ch. 1 and 2; W Ch. 2 (No 2.7); BS Ch. 1; NFR Ch. 1.

3) *Neoclassical Growth Theory*

H Chapter 2; W Chapters 3 and 4; BS Chapter 2; NFR Chapters 2, 3 and 4.

4) *Endogenous Growth Theory*

W Chapter 3.5; BS Chapter 4.

5) *Fiscal Policy*

H Chapters 4 and 5; BS Chapter 3.

6) *The Empirics of Economic Fluctuations*

Lecture notes, DD Chapter 6; Lecture notes; L Chapters 2, 4, 5, 7, 10 and 11.

7) *Numerical Solution of DSGE Models*

Lecture notes, DD Chapter 4; NFR Chapter 5

8) *Calibration and Estimation of DSGE Models*

DD Chapters 11, 12 and 14; NFR Chapters 10 and 11.

9) *Endogenous Growth and Economic Fluctuations*

NFR Chapters 6 and 7.

E-mail Correspondence

Emails should be limited to critical matters, such as inability to attend class, an exam, or prolonged illness, and should include the course name and number in the subject line. Questions on course material should be asked during office hours or in class. The standard format for writing a letter must be used. This means it should begin with a salutation (e.g. Dear….), include full sentences and it must conclude with a signature that includes your **full name and V#**. Text message lingo should not be used. Note that it is not uncommon for Uvic's spam filters to block emails sent from non-uvic email accounts.

Electronic Devices

Countless studies unequivocally show that using electronic devices in class is detrimental to student learning. Please refrain from using your phone in class. Taking notes with paper and pencil might prove a useful commitment device to minimize the temptations of social media.

Educational Technology involving storage outside Canada

The following educational technologies, which stores or accesses your personal information outside Canada, is required for this course: Zoom. I will make you aware if this list changes.

Personal information is required by the service. The privacy policy and the terms of use list the personal information stored outside of Canada and are available at https://explore.zoom.us/en/privacy/. I encourage you to read these documents.

If you are not comfortable with your personal information being stored outside of Canada, please speak to me within the ***first week*** of class about using an alternative (such as using an alias or nickname). Otherwise, by continuing in this course, you agree to the use of the educational technology in the course and the storage of personal information outside of Canada.