

# ECON 450

## Advanced Economic Theory 1 - Honours

Department of Economics  
McGill University  
Winter 2025

**Instructor:** Rui Castro

**Office:** Leacock 519

**Phone:** 514-398-1226

**Email:** [rui.castro@mcgill.ca](mailto:rui.castro@mcgill.ca)

**Office hours:** Wednesdays, 2pm-3pm, or by email appointment. I will also make heavy use of the Discussion Board under myCourses, students are strongly encouraged to post questions about the course material, which I will answer. Please do not contact me by email with questions about the course material.

**Regular classes:** Wednesdays and Fridays, 4.05pm-5.25pm.

**Teaching assistant:** Jiyoung Kim, [jiyoung.kim4@mcgill.ca](mailto:jiyoung.kim4@mcgill.ca).

### Course Overview and Learning Outcomes

- This course introduces students to a formal treatment of modern Macroeconomic Theory. There are two main components, carefully building and understanding the basic economic model, and then applying it to address specific topics. For example, we will examine the following substantive questions:
  - What are the determinants of sustained, long-run economic growth? Why are some countries so much poorer than others? Should we expect poorer countries to converge to richer ones?
  - Why are there business cycles over the short-run? What explains how income per capita, investment, and employment behave over the business cycle? What role can economic policy play?
  - To what extent should the government redistribute income in society?
  - Why have real interest rates been so low for so long, and why have they been increasing more recently?

- Why have average stock returns been so much higher historically than the return on government bonds?

While most topics might have been previously covered in other Macroeconomics courses, namely ECON 353/4, the emphasis will now be on a more rigorous treatment.

- The course is aimed at ambitious students wishing to further their understanding of Macroeconomics, and to enhance their ability to think critically about the current economic debate and policy evaluation. It will also provide a good bridge between undergraduate and graduate-level studies.

### **Course Pre-Requisites**

The pre-requisites for this course are ECON 250D1/D2 and ECON 353/4. A good knowledge of both Macroeconomic and Microeconomic Theory is critical, as well as proficiency in calculus and basic statistics.

### **Course Materials**

There is no required course textbook. The outline follows Stephen Williamson's *Macroeconomics*, Sixth Canadian edition, Pearson Education Canada, 2021, which is very strongly recommended. Students are expected to have a very good knowledge of the material contained in this book.

The course material expands upon Stephen Williamson's more advanced notes for his book, available through myCourses. Most sections in the course content have a correspondence to these notes, and are indicated with a 'W' below. Further references will be added frequently, mostly for further discussion and to highlight applications and related current events. Students are responsible for checking myCourses regularly, at least twice a week. Class attendance is extremely important.

### **Course Content**

1. Introduction.
  - (a) Motivation and overview.
  - (b) Empirical facts.
2. Labor, consumption, and production decisions in a static model (W, Sections 1.1 and 5.1).

- (a) Applications: government spending (W, Section 1.2), resource misallocation and aggregate productivity, optimal redistribution.
3. Dynamic model without investment (W, Section 1.3).
    - (a) Applications: permanent income hypothesis (W, Section 6.1), Ricardian equivalence (W, Section 1.3).
  4. The neoclassical growth model without uncertainty (W, Chapter 3).
    - (a) Competitive equilibrium.
    - (b) Efficient allocation.
    - (c) Dynamic programming.
    - (d) Steady-state and dynamics.
    - (e) Applications: real interest rate determination, cross-country income differences.
  5. The neoclassical growth model with uncertainty (W, Section 5.2).
    - (a) Competitive equilibrium, efficient allocation, steady-state and dynamics.
  6. Endogenous growth (W, Section 4.2).
  7. Asset pricing (W, Section 6.2).
    - (a) Application: equity premium puzzle.

## Evaluation

The final grade for the course will be based on:

1. Problem sets (25%), there will be three of them throughout the semester, only a random subset of the questions will be graded per problem set.
2. Midterm exam (30%) on Wednesday, February 26, during regular class time, based upon the material covered until then. This exam is mandatory.
3. Final exam (45%), covering all the material. This exam is also mandatory.

Expectations for each assessment, and Elements of Student Learning evaluated:

1. Problem sets.

*Expectations:* Students are not only required but also strongly encouraged to answer all the questions in each problem set. The problem sets contain several questions from previous years' exams, as well as longer questions which are more challenging. The questions emphasize both the formal aspects (definitions, mathematical derivations, explicit solutions to models), and the economic intuition. Students are encouraged to collaborate, however each student must write her/his own answers, and make sure they understand them well. An answer key will be provided in MyCourses, to further help students align with the expectations. These practice exercises are *essential* for succeeding in the course. The students have several weeks to answer the problem set questions. The answers to the problem sets are to be submitted via myCourses, and students are responsible for ensuring that the submitted document is legible. Late submission policy: students will incur a penalty of 5 points out of 100 per hour after the deadline (deduction of 5 points if you submit up to 1 hour late, 10 points if you submit more than 1 hour and up to 2 hours late, and so on until 0).

*Elements Evaluated:* Students will have a chance to practice and apply the course material to specific problems, including implementing the concepts and the tools covered in class. Students will also apply the course material to new situations. This will test whether the students understand well the class material, with sufficient maturity and depth. The evaluation will concern not just the technical aspects, but also the economic interpretation. This ensures that students are able to understand basic material, and to understand and participate in sophisticated discussions about Macroeconomics.

## 2. Midterm and Final exams.

*Expectations:* Students are required to answer all the questions in each exam. Each exam will feature some questions which are straight from class, others that require filling in the gaps of arguments discussed in class, and yet others which require applying the concepts and tools to new situations, including making sense of current events. The questions emphasize both the formal aspects (definitions, mathematical derivations, explicit solutions to models), and the economic intuition, which needs to be well-grounded in the economic theory. Since the problem sets contain several questions from past years' exams, students should be able to have a clear understanding of what the expectations for the exams are. An answer key to the midterm will be provided in MyCourses, to further help students align with the expectations.

*Elements Evaluated:* The exams will test whether the students understand well the class material, with sufficient maturity and depth. The evaluation will concern not just the formal aspects, but also the economic interpretation, and how well-grounded it is in the economic theory. This ensures that students are able to understand basic material, and to understand and participate in sophisticated discussions about Macroeconomics.

Notes:

- The weighting cannot be changed on the basis of performance. The weight of the midterm can be moved to the final only via properly justified absences. Absences to the final exam also need to be properly justified, and need to be followed-up by an official request for a deferral on Minerva.
- Supplemental examination for those eligible will cover all the course material, and will count for 100% of the course grade.

### **AI Policy**

Students may use artificial intelligence tools, including generative AI, in this course as learning aids or to help produce assignments. However, students are ultimately accountable for the work they submit. Please keep in mind that (i) AI tools often produce incorrect and imprecise answers, or using imprecise language, different from the one used in the course, and that (ii) it's fundamental that the students practice developing their own reasoning. In particular, the midterm and the final exams will be in class, without the help of AI.

### **McGill Policy Statements**

- *Language of Submission:* In accord with [McGill University's Charter of Students' Rights](#), students in this course have the right to submit in English or in French any written work that is to be graded.

*En français:* Conformément à la [Charte des droits de l'étudiant de l'Université McGill](#), chaque étudiant a le droit de soumettre en français ou en anglais tout travail écrit devant être noté (sauf dans le cas des cours dont l'un des objets est la maîtrise d'une langue).

- *Academic Integrity:* McGill University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the [Code of Student Conduct and Disciplinary Procedures](#). See [McGill's guide to academic honesty](#) for more information.

*En français:* L'université McGill attache une haute importance à l'honnêteté académique. Il incombe par conséquent à tous les étudiants de comprendre ce que l'on entend par tricherie, plagiat et autres infractions académiques, ainsi que les conséquences que peuvent avoir de telles actions, selon le Code de conduite de l'étudiant et des procédures disciplinaires.

- *Copyright:* Instructor-generated course materials (e.g., handouts, notes, summaries, exam questions, etc.) are protected by law and may not be copied or distributed in any form or in any medium without explicit permission of the instructor. Note that infringements of copyright can be subject to follow up by the University under the [Code of Student Conduct and Disciplinary Procedures](#).
- *Disabilities:* If you have a disability, please contact the instructor to arrange a time to discuss your situation. It would be helpful if you contact the [Office for Students with Disabilities](#) before you do this.
- *Final Exams:* According to McGill regulations, instructors are not permitted to make special arrangements for final exams. Please consult the [eCalendar](#) for the University Regulations.
- *Extraordinary Circumstances:* In the event of extraordinary circumstances beyond the control of McGill University, assessment tasks in a course are subject to change, provided students are sent adequate and timely communications regarding the change.
- *Other:* Additional policies governing academic issues which affect students can be found in the [McGill Charter of Students' Rights](#).
- This syllabus has been prepared in accordance to [McGill's Policy Assessment of Student Learning \(PASL\)](#).