

ECON 5110: Topics in Macroeconomic Theory

Fall 2024

York University

Department of Economics

General Information

Instructor: Yanran Guo
Contact: VH 1118, yrguo@yorku.ca
Lectures: Tuesday 8:30-11:30 at R S125
Office Hours: Tuesday 11:30-12:30 at VH 1118

Land Acknowledgement

York University recognizes that many Indigenous Nations have longstanding relationships with the territories upon which York University campuses are located that precede the establishment of York University. York University acknowledges its presence on the traditional territory of many Indigenous Nations. The area known as Tkaronto has been care taken by the Anishinabek Nation, the Haudenosaunee Confederacy, and the Huron-Wendat. It is now home to many First Nation, Inuit, and Métis communities. We acknowledge the current treaty holders, the Mississaugas of the Credit First Nation. This territory is subject of the Dish with One Spoon Wampum Belt Covenant, an agreement to peaceably share and care for the Great Lakes region ([LA&PS Land Acknowledgement](#)).

Course Description

ECON5110 is the first course in the macro PhD sequence, designed to equip students with the most widely-used models and methodologies in modern macroeconomic analysis. The course provides a comprehensive introduction to dynamic programming and the formulation and solution of Sequential Competitive Equilibrium and Recursive Competitive Equilibrium. Throughout this course, we will then apply these advanced techniques and equilibrium concepts to a wide range of macroeconomic issues, including economic growth, labor markets, asset pricing, wealth distribution, and the roles of fiscal and monetary policy.

Another focus of the course is developing proficiency in the computational methods essential for dynamic programming and competitive equilibrium analysis. To facilitate this, some assignments will involve practical exercises using standard programming languages such as MATLAB, Julia, or Python, providing students with hands-on experience in computing solutions to complex macroeconomic models.

Upon successful completion of ECON5110, students should be able to understand the basic language of modern dynamic macroeconomics, preparing them for advanced research and professional practice in the field.

Tentative Schedule

The following is a *tentative* schedule for the course.

Week of...	Activities	Homework
09/10	Lecture 1. Introduction	HW 1
09/17	Lecture 2. OLG model	HW 2
09/24	Lecture 3. OLG dynamics and steady state	HW 3
10/01	Lecture 4. Neoclassical growth model in discrete time and dynamic programming	HW 4
10/08	Lecture 5. Recursive competitive equilibrium	HW 5
10/22	Midterm	
10/29	Lecture 6. Introduction to numerical dynamic programming	Coding assignment 1
11/05	Lecture 7. Introduction to stochastic dynamic programming	HW 6
11/12	Lecture 8. Idiosyncratic risk in neoclassical growth model I	HW 7
11/19	Lecture 9. Idiosyncratic risk in neoclassical growth model II	Coding assignment 2
11/26	Lecture 10. Job search and matching I	HW 8
12/03	Lecture 11. Job search and matching II	

Textbook

There is no required text for the course. But if you would like to use a text to supplement the class notes, the best fit for this course is:

Acemoglu, Daron (2008). *Introduction to modern economic growth*. Princeton university press.

The following books and materials are also useful:

Krueger, Dirk (2012). "Macroeconomic theory". In: *Lecture Notes*.

Krusell, Per (2014). "Real macroeconomic theory". In: *Manuscript*. Retrieved from <https://www.sas.upenn.edu/~vr0j/702-16/newmanu.pdf>.

Petrosky-Nadeau, Nicolas and Etienne Wasmer (2017). *Labor, Credit, and Goods Markets: The macroeconomics of search and unemployment*. MIT press.

Sargent, Thomas J and Lars Ljungqvist (2000). "Recursive macroeconomic theory". In: *Massachusetts Institute of Technology*.

Stokey, Nancy L and Robert E Lucas Jr (1989). *Recursive methods in economic dynamics*. Harvard University Press.

Williamson, Stephen D (2010). "Notes on Search". In: *Washington University in St. Louis, 1p38*.

A closely related set of material is available on the [Quantitative Economics](#) website by Sargent and Stachurski. With a York account, you will have access to [Matlab at York](#).

Grading

The course grade is determined by the following components:

Homework	2% × 8
Coding assignment	7% × 2
Midterm exam	30%
Final exam	40%

Grade Scale

Final grades will be assigned according to the following scale:

A+	90 – 100
A	80 – 89
B+	75 – 79
B	70 – 74
C+	65 – 69
C	60 – 64
D+	55 – 59
D	50 – 54
E	(marginally below 50)
F	(below 50)

Homework and Coding Assignment

There will be eight problem sets and two coding assignments throughout the semester. Each homework assignment is due at the beginning of the following week's class and will be graded based on completion. Coding assignments should be submitted via email by noon on the Friday of the following week. Late submissions of homework and coding assignments will not be accepted unless accompanied by a valid reason with proof (e.g., a doctor's note).

Midterm Exam

There will be a 2-hour closed-book midterm exam covering the first five lectures of the course, scheduled to be held in class on Tuesday, October 22. **There are no makeups for missed midterm exams.** If a student misses the midterm, their final exam will automatically be reweighted to account for 70% of their grade.

Final Exam

There will be a closed-book final exam covering the whole course.

Academic Integrity

Academic integrity is a fundamental and important value of York University. To maintain a fair and honest learning environment, students in this course are responsible for understanding and upholding academic integrity in all of their academic activities. To better understand expectations, familiarize yourself with the [Senate Policy on Academic Conduct](#). To learn more about how to demonstrate academic integrity in your courses and to access related resources and support, visit the [Academic Integrity website](#).

Generative Artificial Intelligence (GenAI)

Students are not permitted to use generative artificial intelligence (AI) in this course. Submitting

any work created (in whole or part) through the use of generative AI tools will be considered a violation of York University's [Senate Policy on Academic Conduct](#). Using AI apps such as ChatGPT, GPT-3, DALL-E, translation software among others to complete academic work **without your instructor's knowledge or permission**, is considered to be a breach of academic honesty. For more information, please review [AI Technology & Academic Integrity: Information for Students](#).

Syllabus Changes

The instructor reserves the right to make changes to the syllabus including project due dates and test dates. These changes will be announced as early as possible.