Macroeconomics 3
Fall 2025
Syllabus

Instructor
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Office Hours
by e-mail appointment

Schedule & Class Location

Lun 3 Nov	15.00-17.30	Auditorium
Mer 5 Nov	14.30-17.00	Aula seminari
Lun 10 Nov	15.00-17.30	Aula seminari
Mer 12 Nov	14.30-17.00	Auditorium
Lun 17 Nov	15.00-17.30	Auditorium
Mer 19 Nov	09.30-12.00	Aula seminari
Lun 24 Nov	15.00-17.30	Aula seminari
Mer 26 Nov	14.30-17.00	Auditorium

Class Overview

The objective of this course is to provide a rigorous foundation in modern macroeconomic theories of business cycle fluctuations. The course begins with the intertemporal consumption-labor decision of households, emphasizing the role of preferences, technology, and market structures. It then explores the Real Business Cycle (RBC) framework, focusing on productivity shocks and their implications for aggregate fluctuations. Building on this, the course introduces the New Keynesian (NK) model, incorporating nominal rigidities and monetary policy to analyze macroeconomic stabilization. Finally, it covers topics at the research frontier of macroeconomic research, such as departures from the Rational Expectations Full Information hypothesis. Throughout, students will engage with both theoretical derivations and quantitative methods to assess these models' empirical relevance.

Textbook

There is no textbook, but we will draw from:

- **Main:** M. Azzimonti, P. Krusell, A. McKay, and T. Mukoyama, Macroeconomics (Open Source). Available online: https://phdmacrobook.org
- Gali, J. 2010, "Monetary Policy, Inflation and the Business Cycle"

- Romer, David, Advanced Macroeconomics 4th ed. New York: McGraw-Hill, 2012.
- Walsh, Carl E., Monetary Theory and Policy 3rd ed. Cambridge, MA: MIT Press, 2010.

Additional Course Material

Lecture Slides will be available on the Virtuale page of this course.

Grading

Homeworks 30% + Exam 70%

Homework

There will be four graded Problem Sets throughout the course You may work in groups, but each student must turn in their own work by the due date. I do not accept late work.

Final Exam

TBA

Prerequisite

Dynamic optimization (Ch. 4 AKMM)
Consumption (Ch. 8 Romer, Ch. 11.3 AKMM)

Technology requirements

- MATLAB: Freely available for University of Bologna students. Ensure access through the university's licensing system.
- Dynare: Required for some course exercises. Download it from the official website: https://www.dynare.org/

Course Outline

The list below represents a tentative schedule of the course outline: topics may be added or canceled depending on our progress, and the material may not necessarily be presented in the order listed.

1. Real Business Cycle (RBC) without Capital
    - Business Cycle Facts (Empirical Evidence)
    - General Setup
    - Equilibrium Analysis

- Responses to Technology Shocks
- Responses to Government Spending Shocks

2. Real Business Cycle (RBC) Model with Capital
    - General Setup
    - Calibration
    - Numerical Solution with Dynare
    - Impulse Responses to Technology Shocks
    - Impulse Responses to Government Spending Shocks
3. Extensions to RBC Model
    - Indivisible labor
    - Non-Separable preferences (GHH)
    - Variable capacity utilization
    - Capital adjustment cost
    - Imperfect competition
4. New Keynesian (NK) Model
    - General Setup
    - Analytical Solution
    - Calibration
    - Numerical Solution with Dynare
    - Impulse Responses to Technology Shocks
    - Impulse Responses to Government Spending Shocks
    - Impulse Responses to Monetary Policy Shocks
5. Advanced Topics
    - TBA