

## Outline of Macroeconomics Sequence (2022-2023)

### Core courses (Year 1, compulsory)

Macro I, Part 1: Real Dynamics and Fiscal Policy (Russell Cooper, [russell.cooper@eui.eu](mailto:russell.cooper@eui.eu))  
Macro I, Part 2: Dynamic Programming and Real Business Cycles (Jesus Bueren, [jesus.bueren@eui.eu](mailto:jesus.bueren@eui.eu))  
Macro II, Part 1: Monetary Dynamics and Policy (Russell Cooper, [russell.cooper@eui.eu](mailto:russell.cooper@eui.eu))  
Macro II, Part 2: New Keynesian Economics (Edouard Challe, [edouard.challe@eui.eu](mailto:edouard.challe@eui.eu))  
Macro III, Part 1: Search Theory (Edouard Challe, [edouard.challe@eui.eu](mailto:edouard.challe@eui.eu))  
Macro III, Part 2: Incomplete Markets (Alexander Monge-Naranjo, [Alexander.Monge-Naranjo@eui.eu](mailto:Alexander.Monge-Naranjo@eui.eu))

### Advanced courses (Year 2+, elective)

Advanced 1: Firm Dynamics and innovation [half-credit]  
(Umberto Muratori, [umberto.muratori@eui.eu](mailto:umberto.muratori@eui.eu))  
Advanced 2: Fiscal and Monetary Policy and Institutions in a Century of Crises [full-credit]  
(Ramon Marimon, [ramon.marimon@eui.eu](mailto:ramon.marimon@eui.eu))  
Advanced 3: Quantitative Methods and Applications: Dynamic Factor Demand [half-credit]  
(Russell Cooper, [russell.cooper@eui.eu](mailto:russell.cooper@eui.eu))  
Advanced 4: Life-Cycle Heterogeneous Agents Models: Solution and Estimation [full-credit]  
(Jesus Bueren, [jesus.bueren@eui.eu](mailto:jesus.bueren@eui.eu))  
Advanced 5: Computations and Quantitative Models in Macro [half-credit]  
(Alexander Monge-Naranjo, [Alexander.Monge-Naranjo@eui.eu](mailto:Alexander.Monge-Naranjo@eui.eu))  
Advanced 6: Topics in Banking and Finance [half-credit]  
(Thorsten Beck, [thorsten.beck@eui.eu](mailto:thorsten.beck@eui.eu))  
Advanced 7: Inequality and Education [full-credit]  
(Alexander Monge-Naranjo, [Alexander.Monge-Naranjo@eui.eu](mailto:Alexander.Monge-Naranjo@eui.eu))  
Advanced 8: Advanced Monetary Economics [full-credit]  
(Edouard Challe, [edouard.challe@eui.eu](mailto:edouard.challe@eui.eu))  
Advanced 9: Topics in Macroeconometrics [full-credit]  
(Barbara Rossi, [barbara.rossi@eui.eu](mailto:barbara.rossi@eui.eu))  
Advanced 10: International Macroeconomics [full-credit]  
(Giancarlo Corsetti, [giancarlo.corsetti@eui.eu](mailto:giancarlo.corsetti@eui.eu))

## Timing

	Block I	Block II	Block III	Block IV
Core courses		1	2	3
Advanced courses	1-2	3-6	7-9	10

## Contents of core courses

### Macroeconomics I, Part 1: Real Dynamics and Fiscal Policy (Russell Cooper)

This course introduces students to macroeconomic analysis and policies through the lens of the Overlapping-Generations (OLG) model. The focus is on the dynamics of real economies and the effects of fiscal policy.

#### Topics covered:

- Two-period optimization problems
- Real overlapping generations models (capital, public debt, aggregate shocks)
- Effects of Fiscal Policy

#### Teaching material:

- Lecture notes and journal articles
- Costas Azariadis. *Intertemporal Macroeconomics*. Blackwell Publishing Company, 1993
- David De La Croix, Philippe Michel, et al. *A Theory of Economic Growth: Dynamics and Policy in Overlapping Generations*. Cambridge University Press, 2002

### Macroeconomics I, Part 2: Dynamic Programming and Real Business Cycles (Jesus Bueren)

This course covers infinite-horizon optimization via dynamic programming (both deterministic and stochastic) as well as its application to some simple partial- and general-equilibrium models.

#### Topics covered:

- Equilibrium with complete markets (static exchange economies, exchange economies with infinitely lived agents –without and with uncertainty)
- Dynamic programming (sequential versus recursive formulation, the principle of optimality, the contraction mapping theorem, discrete state-space methods, neoclassical growth, recursive competitive equilibrium)
- Stochastic dynamic programming (RBC and Lucas-Tree models, the Permanent-Income Hypothesis, precautionary savings)

### Teaching material:

- Lars Ljungqvist and Thomas J Sargent. *Recursive Macroeconomic Theory*. MIT press, 2018
- Jerome Adda, Russell Cooper, and Russell W Cooper. *Dynamic Economics: Quantitative Methods and Applications*. MIT press, 2003
- Nancy L Stokey and Robert E Lucas. *Recursive Methods in Economic Dynamics*. Harvard University Press, 1989

**Grading:** Problem sets (10%) and final exam (90%)

## Macroeconomics II, Part 1: Monetary Dynamics and Policy (Russell Cooper)

This course introduces students to macroeconomic analysis and policies through the lens of the Overlapping-Generations (OLG) model. The focus here is on economies with valued fiat money and the effects of monetary policy in economies with flexible prices.

### Topics covered:

- Two-period optimization problems
- Money and stationary Rational Expectations Equilibria (with flexible prices)
- Stability and indeterminacy of equilibria

### Teaching material:

- Lecture notes and journal articles
- Costas Azariadis. *Intertemporal Macroeconomics*. Blackwell Publishing Company, 1993
- David De La Croix, Philippe Michel, et al. *A Theory of Economic Growth: Dynamics and Policy in Overlapping Generations*. Cambridge University Press, 2002

## Macroeconomics II, Part 2: New Keynesian Economics (Edouard Challe)

This course introduces students to the New Keynesian model. It derives the New Keynesian Phillips curve from nominal rigidities and studies how it interacts with aggregate demand to jointly determine output, employment and inflation over the business cycle. It also covers various dimension of monetary policy, from its optimality to its implementation via simple policy rules.

### Topics covered:

- Log-linearization of macroeconomic models
- The dynamic IS curve and the New Keynesian Phillips curve
- Monetary policy rules
- Optimal monetary policy under discretion versus commitment

### Teaching material:

- Jordi Galí. *Monetary Policy, Inflation, and the Business Cycle: An Introduction to the New Keynesian Framework and Its Applications, Second Edition*. Princeton University Press, 2015
- Edouard Challe. *Macroeconomic Fluctuations and Policies*. MIT Press, 2019
- Journal articles

**Grading:** Problem sets (10%) and final exam (90%)

### Macroeconomics III, Part 1: Search Theory (Edouard Challe)

This course provides an introduction to Search theory and some of its applications to labor markets, monetary transactions, and asset markets. Students will learn how to characterise the behaviour of individual agents (e.g., job seekers) in a market with search frictions, and how these choices aggregate to determine (potentially inefficient) macroeconomic outcomes. Alternative price and wage setting mechanisms (i.e., posting versus bargaining) will be considered.

### Topics covered:

- Basic job search
- Equilibrium search and endogenous wage dispersion
- Job creation and the Diamond-Mortensen-Pissarides model
- Competitive search
- Money search, OTC markets

### Teaching material:

- Pierre Cahuc, Stéphane Carcillo, and André Zylberberg. *Labor Economics*. MIT press, 2014
- Dale Mortensen. *Wage Dispersion: Why Are Similar Workers Paid Differently?* MIT press, 2003
- Christopher A Pissarides. *Equilibrium Unemployment Theory*. MIT press, 2000
- Journal articles

**Grading:** Problem sets (10%) and final exam (90%)

### Macroeconomics III, Part 2: Incomplete Markets (Alexander Monge-Naranjo)

This course covers the basic dynamic models of incomplete markets that must be familiar to all research economists, not just those doing macro. In the first lecture, we overview the different directions that we can take to incorporate contractual frictions and incompleteness in financial markets. In the following three lectures develop the baseline dynamic incomplete markets model. We start by characterizing the individual's optimization problems and then derive some of the key general equilibrium implications. We then sketch a few extensions, including models with aggregate fluctuations and models with equilibrium

default. The ensuing three lectures and part of five, are devoted to recursive contracts in the presence of limited commitment or private information problems. Again, we discuss the implications for individual dynamics and for the cross-section of agents. A number of leading examples and applications will be used. If time permits, we will also discuss the design of optimal government policy, with and without commitment.

**Topics covered:**

- Sketch of computational methods
- Incomplete markets in GE: Aiyagari/Bewley/Huggett
- Incomplete markets with default
- One-sided limited commitment
- Two-sided limited commitment and moral hazard

**Teaching material:**

- Jerome Adda, Russell Cooper, and Russell W Cooper. *Dynamic Economics: Quantitative Methods and Applications*. MIT press, 2003
- Nancy L Stokey and Robert E Lucas. *Recursive Methods in Economic Dynamics*. Harvard University Press, 1989
- Burkhard Heer and Alfred Maussner. *Dynamic General Equilibrium Modeling: Computational Methods and Applications*. Springer Science & Business Media, 2009
- Mario J Miranda and Paul L Fackler. *Applied Computational Economics and Finance*. MIT press, 2004

**Grading:** Problem sets (30%) and final exam (70%)

## **Contents of Advanced Courses**

See the syllabi.