Outline of Macroeconomics Sequence (2023-2024)

Core courses (Year 1, compulsory)

Macro I: Macro Dynamics, Fiscal and Monetary Policy (Russell Cooper, `russell.cooper@eui.eu`)

Macro II, Unemployment, Search and New Keynesian Models (Edouard Challe, `edouard.challe@eui.eu`)

Macro III, Part 1: Dynamic Programming and Real Business Cycles (Jesus Bueren, `jesus.bueren@eui.eu`)

Macro III, Part 2: Incomplete & Constrained Contracts (Alex Monge-Naranjo, `Alexander.Monge-Naranjo@eui.eu`)

Advanced courses (Year 2+, elective)

Advanced 1: Quantitative Methods in Macroeconomics and Finance [half-credit]
   (Pablo Guerron, Boston College, `pguerron@gmail.com`)

Advanced 2: Fiscal and Monetary Policy and Institutions in a Century of Crises [half-credit]
   (Ramon Marimon, `ramon.marimon@eui.eu`)

Advanced 3: Advanced Monetary Economics [full-credit]
   (Edouard Challe, `edouard.challe@eui.eu`)

Advanced 4: Mean-Field Games in Macro [half-credit]
   (Fernando Alvarez& Francesco Lippi `falvare@uchicago.edu`; `francescolippi@gmail.com`)

Advanced 5: Coordination Games [half-credit]
   (Russell Cooper, `russell.cooper@eui.eu`)

Advanced 6: Life-Cycle Heterogeneous Agents Models: Solution and Estimation [full-credit]
   (Jesus Bueren, `jesus.bueren@eui.eu`)

Advanced 7: Topics in Banking and Finance [half-credit]
   (Thorsten Beck, `thorsten.beck@eui.eu`)

Advanced 8: Growth and Macro Development [half-credit]
   (Alexander Monge-Naranjo, `Alexander.Monge-Naranjo@eui.eu`)

Advanced 9: Inequality and Education [full-credit]
   (Alexander Monge-Naranjo, `Alexander.Monge-Naranjo@eui.eu`)

Advanced 10: Topics in Macroeconometrics [full-credit]
   (Barbara Rossi, `barbara.rossi@eui.eu`)

Advanced 11: International Macroeconomics [full-credit]
   (Giancarlo Corsetti, `giancarlo.corsetti@eui.eu`)

Timing

	Block I	Block II	Block III	Block IV
Core courses		1	2	3
Advanced courses	1-2	3-4	5-8	9-11

Contents of core courses

Macroeconomics I, Macro Dynamics, Fiscal and Monetary Policy (Russell Cooper)

The course introduces students to macroeconomic analysis and policies through the lens of the Overlapping-Generations (OLG) model. First, the course focuses on the dynamics of real economies and the effects of fiscal policy. Then, the focus is on economies with valued fiat money and the effects of monetary policy in economies with flexible prices.

Topics covered:

- Two-period optimization problems

- Real overlapping generations models (capital, public debt, aggregate shocks)

- Effects of Fiscal Policy

- Money and stationary Rational Expectations Equilibria (with flexible prices)

- Stability and indeterminacy of equilibria

Teaching material: [2], [5].

Macroeconomics II, Unemployment, Search and New Keynesian Models (Edouard Challe)

Part 1: New Keynesian Models (Edouard Challe)

The 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: [4], [6] and journal articles.

Part 2: 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: [3], [10], [11], and journal articles.

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

Macroeconomics III, Part 1: Dynamic Programming and Real Business Cycles (Jesus Bueren)

This course covers infinite-horizon optimization via dynamic programming (deterministic and stochastic) and 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: [1], [8], [9], [12] and teaching notes.

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

Macroeconomics III, Part 2: Incomplete and Incentive Constrained 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 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 the cross-section of agents. Several 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: [7], [8], [12], journal articles and class handouts.

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

Contents of Advanced Courses

See the syllabi.

References

[1] Jerome Adda, Russell Cooper, and Russell W Cooper. *Dynamic Economics: Quantitative Methods and Applications*. MIT press, 2003.

[2] Costas Azariadis. *Intertemporal Macroeconomics*. Blackwell Publishing Company, 1993.

[3] Pierre Cahuc, Stéphane Carcillo, and André Zylberberg. *Labor Economics*. MIT press, 2014.

[4] Edouard Challe. *Macroeconomic Fluctuations and Policies*. MIT Press, 2019.

[5] David De La Croix, Philippe Michel, et al. *A Theory of Economic Growth: Dynamics and Policy in Overlapping Generations*. Cambridge University Press, 2002.

[6] 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.

[7] Burkhard Heer and Alfred Maussner. *Dynamic General Equilibrium Modeling: Computational Methods and Applications*. Springer Science & Business Media, 2009.

[8] Lars Ljungqvist and Thomas J Sargent. *Recursive Macroeconomic Theory*. MIT press, 2018.

[9] Mario J Miranda and Paul L Fackler. *Applied Computational Economics and Finance*. MIT press, 2004.

[10] Dale Mortensen. *Wage Dispersion: Why Are Similar Workers Paid Differently?* MIT press, 2003.

[11] Christopher A Pissarides. *Equilibrium Unemployment Theory*. MIT press, 2000.

[12] Nancy L Stokey and Robert E Lucas. *Recursive Methods in Economic Dynamics*. Harvard University Press, 1989.