Syllabus

Macroeconomics III
Introduction to New Keynesian Models (10 hours)

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👤 **Instructor:** Prof. Barbara Annicchiarico
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🕐 **Office hours:** By e-mail appointment. Meetings can also take place via Microsoft Teams.

◎ **Aims and scope of the course**

This course provides a focused introduction to modern macroeconomic modeling for business cycle and monetary policy analysis, with particular emphasis on the New Keynesian framework.

Starting from a brief overview of Real Business Cycle (RBC) models, the course introduces the core building blocks of New Keynesian models and illustrates how nominal rigidities, expectations, and monetary policy interact in shaping macroeconomic dynamics.

The course aims to:

- present the conceptual foundations of the New Neoclassical Synthesis, highlighting the transition from RBC to New Keynesian models;

- familiarize students with the structure and solution of small-scale dynamic stochastic general equilibrium (DSGE) models;

- provide a guided, hands-on introduction to model simulation using Dynare for MATLAB;

- illustrate how theoretical models are used to interpret macroeconomic fluctuations and monetary policy outcomes, with reference to observed data.

Given the limited duration of the course, extensions of the baseline New Keynesian framework are presented selectively and at an overview level.

🖋 **Assessment method**

Written exam. Details on the structure and duration of the exam will be communicated to students at the end of the course.

≔ **Course outline**

- **The RBC model (overview)**
  - From the Cass–Koopmans growth model to the basic RBC framework

- Technology shocks and labor dynamics
- Limitations of the RBC approach

- **The New Keynesian model**

  - Motivation and empirical relevance
  - Core building blocks and hypotheses
  - Derivation of the basic log-linearized three-equation model
  - Solution methods
  - Technology shocks and labor dynamics
  - Monetary policy, inflation, and forward guidance

- **Some extensions of the New Keynesian framework (overview)**

  - Behavioral New Keynesian models
  - Environmental New Keynesian models
  - Two-Agent New Keynesian (TANK) models

📖 Readings

❯ The RBC model

- Romer, D. (2021). *Advanced Macroeconomics* (5th ed.), McGraw–Hill, Chapter 5.
- Long, J. B., & Plosser, C. I. (1983). Real business cycles. *Journal of Political Economy*, 91(1), 39–69.

❯ The New Keynesian model

- Woodford, M. (2003). *Interest and Prices*, Princeton University Press, Chapter 4.
- Galí, J. (2015). *Monetary Policy, Inflation, and the Business Cycle: An Introduction to the New Keynesian Framework and Its Applications*, Princeton University Press, Chapter 3.
- Clarida, R., Galí, J., & Gertler, M. (1999). The science of monetary policy: A New Keynesian perspective. *Journal of Economic Literature*, 37(4), 1661–1707.
- Goodfriend, M., & King, R. G. (1997). The new neoclassical synthesis and the role of monetary policy. *NBER Macroeconomics Annual*, 12, 231–283.

❯ Some extensions of the New Keynesian framework

- Gabaix, X. (2020). A behavioral New Keynesian model. *American Economic Review*, 110(8), 2271–2327.
- Annicchiarico, B., & Di Dio, F. (2015). Environmental policy and macroeconomic dynamics in a New Keynesian model. *Journal of Environmental Economics and Management*, 69, 1–21.
- Galí, J., López-Salido, J. D., & Vallés, J. (2004). Rule-of-thumb consumers and the design of interest rate rules. *Journal of Money, Credit and Banking*, 36(4), 739–763.

🗂 Additional course material

Students will be provided with additional class material, including self-contained lecture slides, commented codes (Dynare/MATLAB scripts), and replication files used during the course.

🔗 Useful links

- **Dynare:** www.dynare.org/

- **Dynare examples (J. Pfeifer's homepage):** sites.google.com/site/pfeiferecon/dynare

- **FRED – Federal Reserve Economic Data:** fred.stlouisfed.org/

- **ECB Statistical Data Warehouse:** data.ecb.europa.eu/

- **DBnomics – Economic data platform:** db.nomics.world/

- **R interface to DBnomics:** cran.r-project.org/web/packages/rdbnomics/vignettes/rdbnomics.html