

## Macroeconomics II

Academic Year: ( 2023 / 2024 )

Review date: 14-06-2023

Department assigned to the subject: Economics Department

Coordinating teacher: GALLI , CARLO

Type: Compulsory ECTS Credits : 9.0

Year : 1 Semester : 2

## REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

Macroeconomics I  
 Microeconomics I  
 Mathematics I

## OBJECTIVES

This course equips students with the necessary tools to understand and write scientific articles in modern macroeconomics. Specifically, the students gets acquainted with

1. the non-stochastic and stochastic versions of the neoclassical growth model and the consumption-savings problem, two of the main workhorses of modern macroeconomics;
2. dynamic programming, a powerful tool for solving dynamic optimization problems, in discrete and continuous time;
3. a set of models that are important in modern macroeconomic theory (cyclical fluctuations; Ramsey optimal policy, and the search-and-matching model).

## DESCRIPTION OF CONTENTS: PROGRAMME

Content common to all courses:

Dynamic general equilibrium models. Growth models. Business-cycle models. Uncertainty. Complete and incomplete markets. Market imperfections. Credit constraints. Search-and-matching models. Price rigidities. Heterogeneous agents. Income and wealth inequality. Computation, simulation, calibration and estimation of models. Fiscal policy. Monetary policy. Public debt. Open-economy models. International trade. Financial crises. Sovereign risk.

We will closely follow the recent progress in macroeconomic theory and evidence.

Content specific to this course:

## MACROECONOMICS II

1. Dynamic programming: finite and infinite horizon, application to the growth model, comparison to the Lagrangian approach of solving the infinite-horizon problem.
2. Dynamic programming under uncertainty: the stochastic growth model, Markov chains, recursive competitive equilibrium.
3. Continuous-time dynamic programming, under certainty and uncertainty.
4. Cyclical fluctuations: real-business-cycle model, solving the model by linearization.
5. Ramsey optimal taxation: labour tax smoothing, long-run capital taxation.
6. Search-and-matching models for labor markets: the Mortensen-Pissarides model, efficiency, the Hosios condition.

## LEARNING ACTIVITIES AND METHODOLOGY

Learning activities:

Theory class  
 Practical class

Teamwork  
Individual study by student  
Office hours

Methodology:

In the theory class, the professor develops the theory for the subject. Bibliography is given to students to complement the learning process.

Reading texts given by the professor.

Solving problems given by the professor (on paper or programming on the computer), in groups or individually.

#### ASSESSMENT SYSTEM

<b>% end-of-term-examination:</b>	50
<b>% of continuous assessment (assignments, laboratory, practicals...):</b>	50

Regular Exam:

50%: Final Exam

40%: Midterm Exam

10%: Problem Sets

Retake Exam ("convocatoria extraordinaria"):

Either option a) or b), whichever is more favorable for the student, will be used:

a) Evaluation scheme used for the regular exam (given above)

b) 100%: Retake (Final) Exam

#### BASIC BIBLIOGRAPHY

- L. Ljungqvist & T. Sargent Recursive Macroeconomic Theory, MIT Press, 2004
- Stokey & Lucas (with Prescott) Recursive Methods in Economic Dynamics, Harvard University Press, 1989

#### ADDITIONAL BIBLIOGRAPHY

- Christopher Pissarides Equilibrium Unemployment Theory, MIT Press, 2000
- Jordi Gali Monetary Policy, Inflation, and the Business Cycle, Princeton University Press, 2008
- R. Sundaram A First Course in Optimization Theory, Cambridge University Press, 1996