

Academic Year: ( 2020 / 2021 )

Review date: 15-07-2020

Department assigned to the subject: Economics Department

Coordinating teacher: KREDLER , MATTHIAS

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,
3. a set of models that are important in modern macroeconomic theory (cyclical fluctuations; the New-Keynesian model, 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, continuous-time dynamic programming.
3. Cyclical fluctuations: real-business-cycle model, solving the model by linearization, connection to vector-autoregressive (VAR) models, computation by Dynare.
4. Monetary policy: nominal rigidities, the New-Keynesian model, monetary policy.
5. 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

Regular Exam:

50%: Final Exam

30%: Midterm Exam

20%: 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

**% end-of-term-examination:** 50

**% of continuous assessment (assignments, laboratory, practicals...):** 50

#### 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

#### BASIC ELECTRONIC RESOURCES

- Matthias Kredler . Personal website: <http://www.eco.uc3m.es/~mkredler/Teaching.html>