Macroeconomics II

Academic Year: (2019 / 2020)   **Review date: 22-04-2020**

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
Basic skills:
That students possess the knowledge that gives them a basis to develop and/or apply an idea in a scientific context.
That students are able to:
- apply acquired skills and their problem-solving ability to new environments and in wider (e.g. multi-disciplinary)
  contexts related to their area of expertise.
- integrate new knowledge and face the complex task of coming to conclusions, even under incomplete information,
  taking into account social and ethical dimensions of decisions.
- communicate knowledge, theoretical frameworks, and their conclusions to a specialized as well as a general
  audience with clarity.
That student acquire learning skills that enable them to seek new knowledge and skills in an autonomous and
self- sufficient manner.

General skills:
That students are able to:
- analyze and synthesize a scientific text.
- interpret and create advanced economic writing and presentations.
- apply advanced theories using mathematical and econometric computer software.
- evaluate scientific writing and judge the value of a scientific contribution.

Specific skills:
That students are able to apply dynamic-programming and other optimization techniques to advanced economic
problems
with and without uncertainty.
That students are able to apply and interpret:
- dynamic general-equilibrium models
- the neo-classical growth model
- consumption-savings decision under uncertainty and incomplete markets
- linearization techniques for solving dynamic models
- real-business-cycle theory
- the New-Keynesian model of inflation and monetary policy
- search-and-matching models
That students are able to critique, compare, and discuss public policies and their macroeconomic consequences.

Learning results:
1. Ability to understand and solve dynamic general-equilibrium models, which are the basis of modern

macroeconomic theory.
2. Possession of the skills of dynamic programming.
3. Ability to model dynamic macroeconomic problems.
4. Ability to apply recursive techniques in macroeconomic models.
5. Ability to analyze dynamic macroeconomic models: finite and infinite horizon, under certainty and uncertainty.
6. Knowledge of the fundamental macroeconomic models: neo-classical growth model, consumption-savings problem, search-and-matching, the New-Keynesian model.
7. Ability to apply general-equilibrium models to analyze economic growth and aggregate shocks, including the effects of
   market-imperfections on the economy's dynamics.
8. Skill to formulate empirical models (both statistical and quantitative) that can be brought to theoretical macroeconomic
   models.
9. Skill to formulate and compute dynamic stochastic general equilibrium models. Estimation and calibration of macroeconomic models.
10. Study counterfactuals using quantitative macroeconomic models.

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 (assigments, laboratory, practicals…):	50

BASIC BIBLIOGRAPHY

- L. Ljunqvist & 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