

Academic Year: (2024 / 2025)

Review date: 17-04-2024

Department assigned to the subject: Economics Department

Coordinating teacher: KREDLER , MATTHIAS

Type: Compulsory ECTS Credits : 6.0

Year : 1 Semester : 1

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

Intermediate Macroeconomics
 Calculus
 Real Analysis (introductory course)

OBJECTIVES

- Interpret and analyze economic data.
- Apply economic analysis to understand macroeconomic issues.
- Explain advanced economic ideas, both in written and oral form.
- Compute standard dynamic macro models (neoclassical growth, consumption-savings model) and visualize results in MATLAB.
- Study public policies and their macroeconomic effects.
- Study of a small open economy: current account, savings, and capital flows

DESCRIPTION OF CONTENTS: PROGRAMME

1. Economic growth: Solow Model and Evidence.
Techniques: ordinary differential equations (ODEs).
2. The Neoclassical Growth Model (Ramsey).
Optimization in continuous time: Hamiltonians. Numerics: ODE solvers.
3. Applications of Neoclassical Growth: General Equilibrium, Taxation
Optimization in discrete time, dynamic programming (Bellman Equations) and numerical methods (deterministic transitions).
4. Incomplete-markets consumption-savings model: permanent- income and lifecycle hypotheses, Hall's random-walk hypothesis, borrowing constraints, precautionary savings. Numerical life-cycle value-function iteration by grid search.
5. Heterogeneous agents: Bewley-Aiyagari-Huggett model.
Computing forward equations (for distributions) and backward equations (for expectations etc.).
6. Small Open Economy and Imperfect Capital Markets (if time permits)

LEARNING ACTIVITIES AND METHODOLOGY

Lectures
 Recitation classes
 Tutorials (theoretical work, numerical work in MATLAB)
 Team work
 Homework assignments

TEACHING METHODOLOGY

- Lecture by professor with audiovisual equipment that develops the key concepts of the subject and presents the bibliography that complements the class material.
- Reading and discussion of articles recommended by the professor
- Solving practical cases, exercises and problem sets

ASSESSMENT SYSTEM

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

Homework Assignments 20%

Midterm Exam 30%

Final Exam 50%

Extraordinary Exam: 100% (for students not passing the course in January there is an exam in June/July)

The use of Artificial Intelligence is allowed in the homework assignments. However, computers are not allowed in the midterm and final exams.

BASIC BIBLIOGRAPHY

- Carlos Végh Open Economies in Macroeconomics in Developing Countries, MIT Press, 2013
- David Romer Advanced Macroeconomics, McGraw Hill, 2006
- L. Ljungqvist and T.J. Sargent Recursive Macroeconomic Theory, MIT Press, 2013

BASIC ELECTRONIC RESOURCES

- DE GREGORIO . "Macroeconomía: Teoría y Políticas": <http://http://www.degregorio.cl/pdf/Macroeconomia.pdf>