	2021/2022
Economic Models	
Code: 40097	
ECTS Credits: 15	

Universitat Autònoma de Barcelona

Degree	Type	Year	Semester
4313805 Economic Analysis	OB	1	2

The proposed teaching and assessment methodology that appear in the guide may be subject to changes as a result of the restrictions to face-to-face class attendance imposed by the health authorities.

Contact

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Teachers

Maria Teresa Cabeza Gutes

Michael David Creel

Jordi Massó Carreras

Use of Languages

Principal working language: english (eng)

Prerequisites

No specific prerequisits.

Objectives and Contextualisation

The goal of the first part of the module is for students to learn standard concepts of non-cooperative and cooperative Game Theory at a graduate level.

In the second and third parts of the module the goal is for students to learn how to analyze, interpret and organize economic data with advanced statistical and econometric techniques. The student will also become familiar with the use of econometric software packages.

Competences

- Apply the methodology of research, techniques and specific advanced resources to research and produce innovative results in a specific area of specialisation
- Capacity to articulate basic economic theory, analytically deriving them from mathematical reasoning
- Capacity to identify basic statistical analysis and econometric techniques deriving them from the laws of probability and statistics
- Conceptually analyse a specific economic problem using advanced analytical tools
- Find, compile and analyse economic data using advanced econometric techniques
- Possess and understand knowledge that provides a basis or opportunity for originality in the development and/or application of ideas, often in a research context
- Student should possess the learning skills that enable them to continue studying in a way that is largely student led or independent

- Students should know how to apply the knowledge they have acquired and their capacity for problem solving in new or little known fields within wider (or multidisciplinary) contexts related to the area of study
- Students should know how to communicate their conclusions, knowledge and final reasoning that they hold in front of specialist and non-specialist audiences clearly and unambiguously
- Use new technology for the collection and organisation of information to solve problems in professional activities
- Use the main computer packages to program economic data analysis

Learning Outcomes

1. Apply the methodology of research, techniques and specific advanced resources to research and produce innovative results in a specific area of specialisation
2. Critically analyse the different estimators and basic empirical methods
3. Describe the underlying basis for modelling dynamic economic phenomena on a macroeconomic scale
4. Frame an economic question in a mathematical problem and derive the answer using mathematical logic
5. Identify the possibilities and limitations of basic empirical analysis
6. Implement an empirical analysis with all its stages using publicly accessible data bases
7. Possess and understand knowledge that provides a basis or opportunity for originality in the development and/or application of ideas, often in a research context
8. Program basic methods of estimation.
9. Student should possess the learning skills that enable them to continue studying in a way that is largely student led or independent
10. Students should know how to apply the knowledge they have acquired and their capacity for problem solving in new or little known fields within wider (or multidisciplinary) contexts related to the area of study
11. Students should know how to communicate their conclusions, knowledge and final reasoning that they hold in front of specialist and non-specialist audiences clearly and unambiguously
12. Use new technology for the collection and organisation of information to solve problems in professional activities

Content

I.Game Theory

1.Introduction to Game Theory and Some Examples

2.Games in Normal Form

3.Games in Extensive Form

4.Nash Equilibrium and Related Issues

5.Repeated Games

6.Games of Incomplete Information

7.Bargaining Theory

8.Cooperative Games

II.Econometrics I

1. Introduction to econometric analysis

2. Ordinary least squares

3. OLS and finite sample theory

4. OLS and large sample theory

5. Nonspherical disturbances

6. Endogeneity

III.Econometrics II

1. Extremum estimation and numerical optimization

2. Maximum likelihood

3. Generalized Method of Moments

4. Introduction to time series analysis

5. Additional topics in econometrics

For a detailed description of the content of this module go to http://idea.uab.cat/master_program.php .

Methodology

The course will consist of sessions where the instructor presents the material, and sessions specifically dedicated to problem solving. Students are encouraged to form study groups to discuss assignments and readings.

The proposed methodology may undergo some modifications according to the restrictions imposed by the health authorities on on-campus courses.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Theory classes	112.5	4.5	2, 1, 3, 4, 5, 6, 8, 10, 11, 9, 7, 12
Type: Supervised			
Problems sets, tutorials	75	3	2, 1, 3, 4, 5, 6, 8, 10, 11, 9, 7, 12
Type: Autonomous			
Personal study, study groups, textbook readings, article readings	187.5	7.5	2, 1, 3, 4, 5, 6, 8, 10, 11, 9, 7, 12

Assessment

Final Exams	50%

Class attendance and active participation	20%
Problem sets and assignments	30%

The proposed evaluation activities may undergo some changes according to the restrictions imposed by the health authorities on on-campus courses.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Class Attendance and Problem sets and assignments	50%	0	0	2, 1, 3, 4, 5, 6, 8, 10, 11, 9, 7, 12
Final Exams	50%	0	0	2, 1, 3, 4, 5, 6, 8, 10, 11, 9, 7, 12

Bibliography

Game theory:

Fudenberg and J. Tirole (1991). Game Theory. MIT Press.

Gibbons (1992). A Primer in Game Theory. Harvester Wheatsheal.

Luce and H. Raiffa (1957). Games and Decisions. Wiley.

Mas-Colell, M. Whinston and J. Green (1995). Microeconomic Theory. Oxford University Press.

Moulin (1986). Game Theory for the Social Sciences (second edition). New York University Press.

Moulin (1988). Axioms of Cooperative Decision Making. Cambridge University Press (Econometric Society Monographs).

Myerson (1991). Game Theory: Analysis of Conflict. Harvard University Press.

Osborne and A. Rubinstein (1994). A Course in Game Theory. MIT Press.

Owen (1982). Game Theory (second edition). Academic Press.

Shubik (1984). Game Theory in the Social Sciences. MIT Press.

Vega-Redondo (2003). Economics and the Theory of Games. Cambridge University Press.

Econometrics I and II

Cameron, A.C. and P.K. Trivedi, Microeconometrics - Methods and Applications

Davidson, R. and J.G. MacKinnon, Econometric Theory and Methods

Gallant, A.R., An Introduction to Econometric Theor

Greene, W.H. Econometric Analysis, Pearson Prentice Hall.

Hamilton, J.D., Time Series Analysis

Hayashi, F.,Econometrics, Princeton Univesrity Press.

Wooldridge. Econometric Analysis of Cross Section and Panel Data, MIT Press, Cambridge- Mass, USA.

Additional references will be provided during the course.

Software

- Matlab
- R
- Phyton
- Stata