UAB
Universitat Autònoma de Barcelona

Applied and Quantitative Economics

Code: 41832
ECTS Credits: 10

2024/2025

Degree	Type	Year
4313805 Economic Analysis	OT	2

Contact

Name: Amedeo Stefano Edoardo Piolatto

Email: amedeo.piolatto@uab.cat

Teachers

Luca Gambetti

Joan Llull Cabrer

(External) Christopher Rauh

(External) David Andrés

(External) Mar Reguant

Teaching groups languages

You can view this information at the end of this document.

Prerequisites

No specific prerequisits.

Objectives and Contextualisation

This module provides students with advanced econometric techniques for analyzing micro and macro data. These techniques can be applied to (and be learned from) the areas of Health economics, labor economics, public economics, experimental economics, empirical finance, trade and International economics, development economics and political economy.

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
- Demonstrate an open , innovative and analytical attitude towards research questions
- Develop the ability to assess sex and gender inequalities in order to design solutions.
- Find, compile and analyse economic data using advanced econometric techniques
- Make independent judgements and defend them dialectically
- 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 be able to integrate knowledge and face the complexity of making judgements based on information that may be incomplete or limited and includes reflections on the social and ethical responsibilities associated with the application of their knowledge and judgements
- 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. Adapt empirical methodologies to the questions posed, the models used to represent them and the existing data
2. Apply the methodology of research, techniques and specific advanced resources to research and produce innovative results in a specific area of specialisation
3. Carry out a microeconometric analysis using the information packages available
4. Demonstrate an open , innovative and analytical attitude towards research questions
5. Frame a question of applied economics in a mathematical problem and derive the answer using mathematical logic
6. Implement empirical analysis, including all its stages, using the available data
7. Know how to apply the instruments of gender perspective in the analysis of organisations.
8. Know how to carry out a gender-sensitive analysis.
9. Know how to carry out research with a gender perspective.
10. Know how to integrate the conditions and needs of women and men, in addition to a human- rights approach, into development-cooperation policies.
11. Know how to make an inclusive and non-sexist use of language.
12. Make independent judgements and defend them dialectically
13. 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
14. Produce, collect and interpret empirical data in a gender-sensitive manner.
15. Recognise the elements that enable the construction of a model in more specific fields of microeconomics, such as health, economic policy
16. Student should possess the learning skills that enable them to continue studying in a way that is largely student led or independent
17. Students should be able to integrate knowledge and face the complexity of making judgements based on information that may be incomplete or limited and includes reflections on the social and ethical responsibilities associated with the application of their knowledge and judgements
18. 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
19. 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
20. Understand the possibilities and limitations of microeconometric analysis

21. Use new technology for the collection and organisation of information to solve problems in professional activities

Content

- Data
- Energy Economics
- Industrial Economics and Energy
- Macroeconometrics
- Microeconometrics
- Policy Evaluation
- Public Economics

For a detailed description of the content of topics in this module go to https://sites.google.com/view/idea-program/master-program.

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Theory classes	75	3	1, 2, 3, 4, 5, 6, 12, 13, 15, 16, 17, 18, 19, 20, 21
Type: Supervised			
Practical classes,learning based on problems sets, tutorials	25	1	1, 2, 3, 4, 5, 6, 12, 13, 15, 16, 17, 18, 19, 20, 21
Type: Autonomous			
Personal study, study groups, textbook readings, article readings	150	6	1, 2, 3, 5, 6, 13, 15, 16, 17, 18, 19, 20, 21

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 teaching 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.

Assessment

Continous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Class Attendance and Problem sets and assignments	22%	0	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21
Midterm Exam	26%	0	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21
Midterm Exam	26%	0	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21
Midterm Exam	26%	0	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21

This modul does not contemplate an evaluation from a single comprehensive exam

Midterm Exam	26%
Midterm Exam	26%
Midterm Exam	26%
Problem sets, assignments & Class attendance and active participation	22%

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

Bibliography

Alesina, A., Giuliano, P. and Nunn, N.: 2013, On the origins of gender roles: Women and the plough, The Quarterly Journal of Economics 128(2), 469-530.

Amemiya, (1985), Advanced Econometrics, Blackwell

Angrist, J. D. and J.-S. Pischke (2009), Mostly Harmless Econometrics, An Empiricist ´s Companion, Princeton University Press.

Bartik, T.J., Who Benefits from State and Local Economic Development Policies, Kalamazoo, MI: W.E. Upjohn Institute for Employment Research,1991.

Bartolucci, C. , F. Devicienti, and I. Monz_on, Identifying Sorting in Practice," American Economic Journal: Applied Economics,October 2018, 10 (4), 408{438.

Baskaran, T., Min, B. and Uppal, Y.: 2015, Election cycles and electricity provision: Evidence from a quasi-experiment with indian special elections, Journal of Public Economics 126, 64-73.

Becker, S. O. and Woessmann, L.: 2009, Was weber wrong? a human capital theory of protestant economic history, The Quarterly Journal of Economics 124(2), 531-596.

Berndt, Ernst R., B. H. Hall, R. E. Hall, and Jerry A. Hausman, \Estimation and Inference in Nonlinear Structural Models," Annal of Economic and Social Measurement, October 1974, 3 (4), 653{666.

Black, S. E.: 1999, Do better schools matter? parental valuation of elementary education, The Quarterly Journal of Economics 114(2), 577-599.

Blundell, R. and S. Bond, \Initial Conditions and Moment Restrictionsin Dynamic Panel Data Models," Journal of Econometrics, August 1998, 87 (1), 115{143. and , \GMM Estimation with Persistent Panel Data: An Application to Production Functions," Econometric Reviews, March 2000, 19 (3), 321{340.

Bonhomme, S., T. Lamadon, and E. Manresa, \A Distributional Framework for Matched Employer Employee Data," Econometrica, May 2019, 87 (3), 699{739.

Brockwell, P. J. and R. A. Davis, (2009), Time Series: Theory and Methods, Springer-Verlag: Berlin

Brodeur, A., Lekfuangfu, W. N. and Zylberberg, Y.: 2017, War, migration and the origins of the thai sex industry, Journal of the European Economic Association 16(5), 1540-1576.

Cameron, A. C. and P. K. Triverdi (2005), Microeconometrics: Methods and Applications, Cambridge University Press

Canova F. (2007), Methods for Applied Macroeconomic Research, Princeton University Press: Princeton

Davis P. and E. Garcés, Quantitative Techniques for Competition and Antitrust Analysis, Princeton University Press

Hamilton J. D. (1994), Time Series Analysis, Princeton University Press: Princeton

Lutkepohl H. (2005), New Introduction to Multiple Time Series, Springer-Verlag: Berlin

Shum, M. Econometric Models of Industrial Organization, World Scientific

Tirole, J. The Theory of Industrial Organization, The MIT Press

Víctor Aguirregabiria's notes (University of Toronto, Department of Economics)

Wooldridge, J. M. (2002), Econometric Analysis of Cross Section and Panel Data, MIT Press

Additional references will be provided during the course.

Software

- Matlab
- R
- Phyton
- Stata

Language list

Name	Group	Language	Semester	Turn
(PLABm) Practical laboratories (master)	1	English	second semester	morning-mixed
(PLABm) Practical laboratories (master)	2	English	second semester	morning-mixed

(PLABm) Practical laboratories (master)	3	English	second semester	morning-mixed
(TEm) Theory (master)	1	English	second semester	morning-mixed