MICROECONOMETRICS

Bachelor in Economics BIE SEP-2024 MICR-Ec.3.M.A

Area Economics

Number of sessions: 15

Academic year: 24-25

Degree course: THIRD

Number of credits: 3.0

Semester: 1º

Category: COMPULSORY

Language: English

Professor: **ALEXANDRO RUIZ PÉREZ**

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Alexandro Ruiz Pérez holds a Ph.D. in Economics from CEMFI and currently works as an Economist at Compass Lexecon, where he has been involved in various cases related to competition, antitrust, and damage estimation. In his doctoral thesis, he employs tools from structural econometrics to investigate the relationship between the increasing presence of common shareholders in competing firms and their strategic incentives. Additionally, he utilizes causal identification strategies to analyze the impact of central bank collateral policies on credit supply. During his Ph.D., Alexandro also had the opportunity to teach Microeconomics in the Master in Economics at CEMFI. In addition to his academic experience, he has worked with several business associations and media outlets, applying his journalism background.

Office Hours

Office hours will be on request. Please contact at:

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SUBJECT DESCRIPTION

Microeconometrics is a field within econometrics that deals with applying statistical methods to analyze data about individual economic agents. This course aims to provide students with an understanding of key microeconometric techniques, along with explanations of how they are used and the underlying assumptions. Topics covered will include panel data analysis, instrumental variables, modeling binary dependent variables, and treatment effects. The course will delve into both the theoretical foundations of these methods and their practical implementation using statistical software.

LEARNING OBJECTIVES

The course offers an introduction to the topic of microeconometrics. By the end, the student should:

1. Have a broad understanding of the different microeconometric techniques.
2. Know the strengths and weaknesses of each methodology and their applications.
3. Be able to interpret estimates and main diagnostic tests.
4. Attain skills in applying the techniques using statistical software.
5. Be able to evaluate empirical studies and to assess them critically.

TEACHING METHODOLOGY

IE University teaching method is defined by its collaborative, active, and applied nature. Students actively participate in the whole process to build their knowledge and sharpen their skills. Professor's main role is to lead and guide students to achieve the learning objectives of the course. This is done by engaging in a diverse range of teaching techniques and different types of learning activities such as the following:

Learning Activity	**Weighting**	**Estimated time a student should dedicate to prepare for and participate in**
Lectures	26.7 %	15.0 hours
Exercises in class, Asynchronous sessions, Field Work	13.3 %	15.0 hours
Individual studying	60.0 %	45.0 hours
TOTAL	100.0 %	75.0 hours

PROGRAM

SESSION 1 (LIVE IN-PERSON)

Lecture 1: Structure, organization and objectives. Review of regression (standard errors, p-value, R2, multiple variables).

SESSION 2 (LIVE IN-PERSON)

UNIT I: INTRODUCTION
Lecture 2: Goals and distinctive features of microeconometrics. Overview of endogeneity.

SESSION 3 (LIVE IN-PERSON)

Lecture 3: Introduction to Stata

SESSION 4 (LIVE IN-PERSON)

UNIT II: PANEL DATA
Lecture 4: Panel data and fixed effects

SESSION 5 (LIVE IN-PERSON)

PRACTICAL CLASS
Problem Set 1: Panel data

SESSION 6 (LIVE IN-PERSON)

UNIT III: INSTRUMENTAL VARIABLES
Lecture 5: Instrumental variables

SESSION 7 (LIVE IN-PERSON)

UNIT III: INSTRUMENTAL VARIABLES
Lecture 6: Instrumental variables and two-stage least squares

SESSION 8 (LIVE IN-PERSON)

PRACTICAL CLASS
Problem Set 2: Instrumental variables

SESSION 9 (LIVE IN-PERSON)

MIDTERM EXAM
Midterm exam covering Unit I to Unit III

SESSION 10 (LIVE IN-PERSON)

UNIT IV: DISCRETE CHOICE MODELS
Lecture 7: Introduction to the discrete choice model, marginal effects, probit and logit

SESSION 11 (LIVE IN-PERSON)

PRACTICAL CLASS
Problem Set 3: Discrete choice models

SESSION 12 (LIVE IN-PERSON)

UNIT V: EXPERIMENTS AND QUASI-EXPERIMENTS
Lecture 8: The treatment effects model

SESSION 13 (LIVE IN-PERSON)

UNIT V: EXPERIMENTS AND QUASI-EXPERIMENTS
Lecture 9: Difference in differences and regression discontinuity design

SESSION 14 (LIVE IN-PERSON)

PRACTICAL CLASS
Problem Set 4: Experiments and quasi-experiments

SESSION 15 (LIVE IN-PERSON)

FINAL EXAM
Final exam covering all the content of the course

EVALUATION CRITERIA

A. CLASS PARTICIPATION (10%)

Two main criteria will be used in reaching judgment about your class participation:
1-Attendance: Attendance to class is compulsory. (1) Students must comply with the 80% attendance rule. Otherwise they will lose their 1st and 2nd chance, and go directly to the 3rd one (they will need to enroll again in this course next academic year). (2) Punctuality will be taken into consideration when grading this assistance item and the teacher reserves the right to allow attendance to class to those students not being on time. Finally, (3) general attitude and behaviour in class will be also considered. Students affecting the class environment in a negative way will lose points in the assistance grade.
2-Active participation: Participation in class will be evaluated positively if students: (1) attain a threshold quantity of contributions that is sufficient for making a reliable assessment of comment quality. Additionally, (2) participation will be evaluated in quality terms. A high quality comment reveals depth of insight, rigorous use of case evidence, consistency of argument, and realism. A high quality presentation of ideas must consider the relevance and timing of comments, and the flow and content of the ensuing class discussion. It demands comments that are concise and clear, and that are conveyed with a spirit of involvement in the discussion at hand.

B. INDIVIDUAL WORK (20%)

Practical worksheets, also known as problem sets, will be distributed before practical classes, and students are expected to independently work on them and submit them during the class. These worksheets will be reviewed to assess individual performance and provide feedback.

C. MIDTERM EXAM (20%)

The midterm exam will take place in session 9 and will cover the first three units of the course. More details about this exam will be provided in advance in class.

D. FINAL EXAM (50%)

The final exam will take place at the end of the first semester (session 15) and will cover all the content of the course. More details about this exam will be provided in advance in class.

IMPORTANT: In order to pass the course, you need a minimum grade of 5 in the final exam. If your grade in the final exam do not reach the threshold value of 5, you will fail the course, even the case in which your weighted average of the course exceeds 5. Additionally, given that the dates of exams are provided in advance, no exceptions will be made. If you do not attend an exam (for whatever reason), this will automatically imply a 0 in this part of the course. Please take this into consideration when planning your semester and your attendance.

criteria	percentage	Learning Objectives	Comments
Final Exam	50 %		Final exam
Individual presentation	0 %		
Group Presentation	0 %		
Individual work	20 %		Problem sets
Group Work	0 %		
Class Participation	10 %		Participation and attendance
Intermediate tests	20 %		Intermediate exam
Other	0 %		

RE-SIT / RE-TAKE POLICY

Any student whose weighted final grade is below 5 will be required to sit for the retake exam to pass the course (except those not complying with the attendance rules, whom are banned from this possibility).
Grading for retakes will be subject to the following rules:

- The retakes will consist of a comprehensive exam or equivalent assignment. The grade will depend only on the performance on this exam; continuous evaluation over the semester will not be taken into account.
- Dates and location of the retakes will be posted in advance and will not be changed.
- The exam/assignment will be designed bearing in mind that the passing grade is 5 and the maximum grade that can be attained is 8 out of 10.

AI POLICY

In today's world, generative artificial intelligence (GenAI) is changing how we work, study and, in general, how we get things done. However, in the context of this course, the use of GenAI is not permitted, unless it is otherwise stated by the instructor. The use of GenAI tools would jeopardize the students' ability to acquire fundamental knowledge or skills of this course. If a student is found to have used AI-generated content for any form of assessment, it will be considered academic misconduct, and the student might fail the respective assignment or the course.

BIBLIOGRAPHY

Recommended

- Wooldridge, J.M.. (2018). *Introduction to Econometrics: A modern approach.* Ed. 7. Cengage Learning. ISBN 9781337558860 (Printed)
- Stock, J.H. and Watson, M.W.. (2020). *Introduction to Econometrics.* Ed. 4. Pearson. ISBN 9781292264455 (Printed)

BEHAVIOR RULES

Please, check the University's Code of Conduct here. The Program Director may provide further indications.

ATTENDANCE POLICY

Please, check the University's Attendance Policy here. The Program Director may provide further indications.

ETHICAL POLICY

Please, check the University's Ethics Code here. The Program Director may provide further indications.