Universitat de les Illes Balears

Syllabus

Subject

Name	20617 - Microeconometrics
Credits	1.8 in-class (45 hours) 4.2 distance (105 hours) 6 total (150 hours).
Group	Group 31, 2S, GECO (Campus Extens)
Period	Second semester
Language	Spanish

Lecturers

Lecturers	Office hours for students					
	Starting time	**Finishing time**	**Day**	**Start date**	**End date**	**Office**
Audrone Virbickaite - audrone.virbickaite@uib.es	11:00	12:30	Wednesday	23/10/2017	27/06/2018	DB210 cita previa por email

Context

Microeconometrics is a mandatory subject that is a part of a basic training in Economic Quantitative Methods module. The subject has seven topics in total that are divided into two parts. The first part consists of two topics and is designed to provide context and basic knowledge in order to be able to continue with the rest of the topics. The second part consists of five topics and centers on learning different microeconometric methods. These methods will allow the student to model and quantify the behavior and decision making of economic agents at micro level. This course is especially useful in order to be able to carry out empirical research projects related to microeconomic data.

In the context of the Economic Quantitative Methods module, Microeconometrics course is a continuation of the statistical and econometric training provided by Data Analysis and Introduction to Econometrics courses. In particular, the course provides the student the necessary econometric tools to analyze the behavior and decision making of economic agents at micro level (consumers, firms, etc.). In order to achieve this, the course combines the econometric techniques with economic models from diverse disciplines: labor economics, tourism economics, industrial organizations, health economics etc.

Requirements

There are no manatory requisits.

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Recommended

In order to be able to follow the Microeconometrics course it is recommended to have taken the Economic Data Analysis and Econometrics courses.

Skills

The main objective of this course is for the student to acquire the basic knowledge of the existing models and the possible applications of the econometric techniques using micro-level data. Apart from the theoretical introduction, the teaching in Microeconometrics also focuses on applications. The student will learn how to use the microeconometric models and will be able to resolve real world problems that the student might encounter in his/her professional career. In particular, the student will obtain the basic theoretical knowledge about the different methods, will be able to determine when to use one model or another and will be able to analyze the results obtained by applying these models to real data.

Specific

* CE1 and CE2. Contribuir a la buena gestión de la asignación de recursos (tanto en el ámbito privado como en el público), identificando y anticipando problemas económicos relevantes en relación a la asignación de recursos..
* CE3. Aportar racionalidad al análisis y a la descripción de cualquier aspecto de la realidad económica..

Generic

* CG3. Aplicar al análisis de los problemas criterios profesionales basados en el manejo de instrumentos técnicos..
* CG5. Analizar los problemas con razonamiento crítico, sin prejuicios, con precisión y rigor..
* CG7. Capacidad de síntesis..

Basic

* You may consult the basic competencies students will have to achieve by the end of the degree at the following address: http://www.uib.eu/study/grau/Basic-Competences-In-Bachelors-Degree-Studies/

Content

Part 1: Introduction to microeconometrics (2 temas)

The objective of the first part is to provide context and present the basic concepts that will be used in further analysis. The students will see what is microeconometrics, get to know the type of data that is used and the economic context where to apply the specific techniques. Also, the students will be reminded of the most important statistical and econometric concepts that will be necessary in the further chapters.

Part 2: Microeconometric models (5 temas)

The second part includes the basic models and microeconometric techniques for the diverse types of data: binary outcome, ordered response, count data, limited dependent variable, panel data.

Theme content

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Part 1. Introduction to microeconometrics (2 topics)

Topic 1. Introduction to microeconometrics

1.1. General Introduction. Microeconometrics and Macroeconometrics.

1.2. Examples for the microeconometric models.

Topic 2. Nonlinear models. Optimization methods.

2.1. Introduction. Conditional expectation. Partial effects and elasticities.

2.2. Nonlinear least squares and maximum likelihood.

2.3. Numerical optimization methods.

2.4. Hypothesis testing (LR, Wald and LM tests).

2.5. Practical considerations.

Part 2. Microeconometric models (5 topics)

Topic 3. Binary choice models

3.1. Qualitative response models. Binary response models.

3.2. Linear probability model (LPM).

3.3. Alternatives to LPM: Logit and Probit models. Latent utility specification.

3.4. Interpretation of the coefficients. Odds and odds-ratio.

3.5. Maximum likelihood estimationa and hypothesis testing.

3.6. Estimated model evaluation: Pseudo-R2. Measures of information. Prediction of probabilities. Percentage of correct predictions. Hosmer-Lemeshow test.

3.7. Examples.

Topic 4. Ordered response models

4.1. Ordered response models.

4.2. Model identification and estimation.

4.3. Interpretation of the coefficients.

4.4. Parallel regression assumption.

5.5. Examples.

Topic 5. Count data models

5.1. Count data. Poisson distribution.

5.2. Poisson regression.

5.3. Maximum likelihood estimation.

5.4. Testing for overdispersion.

5.5. Negative binomial regression.

5.6. Interpretation of the coefficients.

5.7. Examples.

Topic 6. Limited dependent variable models

6.1. Truncated and censored regression models.

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    6.2. Truncated and censored Normal distributions.

    6.3. Tobit model for censored data.

    6.4. Maximum likelihood estimation.

    6.5. Interpretation of the coefficients for the Tobit model.

    6.6. Sample selectionbias. Heckman's model. Specification adn estimation.

    6.7. Examples.

Topic 7. Panel data

    7.1. Description. Advantages and disadvantages of using panel data.

    7.2. Model specification for panel data. Fixed and random effects.

    7.3. Estimation with feasible GLS.

    7.4. Testing of FE and RE(Haussman test).

    7.5. Examples.

Teaching methodology

Apart from the theoretical introduction of the models, during the course the student will also study empirical applications by using specific econometric programs.

Workload

The course evaluation consists of two partial exams. Nevertheless, it is important that the student does not wait till the last moment to study the material. Both, theory classes and practice sessions provide sufficient material for a continuous learning. Reading the teaching materials in advance as well as solving practice exercises is sufficient for day to day studying.

In-class work activities

Modality	Name	Typ. Grp.	Description	Hours
Theory classes	Theoretical classes	Large group (G)	Theory classes will provide detailed theoretical explanation of each topic, including new concepts and mathematical derivations. Theoretical classes develop the statistical and econometric fundamentals for the different methods and models. The aim of the classes is for the students to be able to understand the econometric implications of the model, perform model comparison and evaluation, derive economic interpretations and conclusions from the theoretical perspective.	20
Practical classes	Practical classes	Medium group (M)	In order to complement the theory, the students will solve theoretical and practical exercises in order to apply the models seen in class. The practical classes also include the use of aneconometric program GRETL. After each topic, the students will estimate the models using real or simulated data. The students will learn how to read the estimation results,	20

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Modality	Name	Typ. Grp.	Description	Hours
			perform model comparison, model evaluation and economic interpretation using real data.	
Assessment	Final exam	Medium group (M)	If the student has failed at least one of the partial exams, he/she will have a possibility to retake the corresponding partial exam, or both, during the final exam. There will be one final exam during the regular exam period and one retake exam during the retake period. The following aspects will be evaluated during the final exam: the level of theoretical knowledge, the capacity to interpret and extract conclusions using the empirical results, and the ability to use the econometric program GRETL.	2
Assessment	Partial exam (1/2)	Large group (G)	The course evaluation consists of two partial exams. The first partial exam will evalaute student's theoretical and applied knowledge from topics1-4. The following aspects will be evaluated during the final exam: the level of theoretical knowledge, the capacity to interpret and extract conclusions using the empirical results, and the ability to use the econometric program GRETL.	1.5
Assessment	Partial exam (2/2)	Medium group (M)	The second partial exam will evalaute student's theoretical and applied knowledge from topics 5-7. The following aspects will be evaluated during the final exam: the level of theoretical knowledge, the capacity to interpret and extract conclusions using the empirical results, and the ability to use the econometric program GRETL.	1.5

At the beginning of the semester a schedule of the subject will be made available to students through the UIBdigital platform. The schedule shall at least include the dates when the continuing assessment tests will be conducted and the hand-in dates for the assignments. In addition, the lecturer shall inform students as to whether the subject work plan will be carried out through the schedule or through another way included in the Campus Extens platform.

Distance education work activities

Modality	Name	Description	Hours
Individual self-study	Preparation for the class	It is recommended to read teaching materials before the theoretical classes in order to be able to cover the topic in depth and answer all possible doubts. Also it is important to revise the material after class and make sure all doubts have been solved. It is important to read supplementary material provided by the professor in order to deepen the knowledge and to provide the overall context.	55
Group self-study	Solving the exercises	After each theory classes the student will solve theoretical and practical exercises in order to assimilate the new material. Some part of these exercises will be solved in class, but it is also important for the students to study outside the classroom. It is advisible, however, completely voluntary, to form study groups in order to make the studying process more efficient. A lot of times the simple doubts can be solved in groups. In case the students are not able to solve the doubts independently, the professor has fixed office hours during which the students can come.	50

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Academic year	2017-18
Subject	20617 - Microeconometrics
Group	Group 31, 2S, GECO
Syllabus	B
Language	English

Specific risks and protective measures

The learning activities of this course do not entail specific health or safety risks for the students and therefore no special protective measures are needed.

Student learning assessment

The course evaluation consists of two partial examinations, and, if necessary, the final exam. The student will obtain a grade from 0 and 10 in each of the partial exams: midterm and endterm. The final grade consists of 50% of the grade from the midterm and 50% of the grade from the endterm.

During the semester two classes will be dedicated to the midterm and endterm exams where the student will solve the exercises on his/her own and submit the responses at the end of the class. The dates of these classes will be announced at the beginning of the semester. The students who do not show up to one of the partial exams will automatically get agrade 0 from that partial exam. In exceptional cases the student can recover the missed partial exam only if he/she presents an official justification. These exceptional cases include juridical reasons, death of a first-degree relative, or student's illness justified with a doctor's note.

The final grade consists of 50% of the grade from the midterm and 50% of the grade from the endterm.**The student passes the course if the final grade is at least 5 and if the grade for each of the partial exams is at least 3**. During the final exam the student can recover the partial exam where he/she has a grade of less than 3. In case that both partial exams have a grade less than 3 the student can recover both. **IMPORTANT: the partial exams graded with 0 due to no-show without a justified cause cannot be recovered during the regular and the recover exams.**

In case where a student has obtained at least 3 in both partial exams but the final grade is still less than 5, he/she can choose whether during the final exam to recover only one part or both.

A student who does not pass the course in June has a possibility to repeat the exam during the retake exam in July.

If the student has a final grade of at least 5, he/she cannot improve the grade during the retake exam in July.

Final exam

Modality	Assessment
Technique	Extended-response, discursive examinations **(retrievable)**
Description	If the student has failed at least one of the partial exams, he/she will have a possibility to retake the corresponding partial exam, or both, during the final exam. There will be one final exam during the regular exam period and one retake exam during the retake period. The following aspects will be evaluated during the final exam: the level of theoretical knowledge, the capacity to interpret and extract conclusions using the empirical results, and the ability to use the econometric program GRETL.
Assessment criteria	Capability to apply theoretical knowledge to solve theoretical and practical exercises. Capability to understand, interpret the results and draw appropriate conclusions.

Final grade percentage: 0% for the training plan A with minimum grade 0
Final grade percentage: 100% for the training plan B with minimum grade 3

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Partial exam (1/2)

Modality	Assessment
Technique	Extended-response, discursive examinations **(retrievable)**
Description	The course evaluation consists of two partial exams. The first partial exam will evalaute student's theoretical and applied knowledge from topics1-4. The following aspects will be evaluated during the final exam: the level of theoretical knowledge, the capacity to interpret and extract conclusions using the empirical results, and the ability to use the econometric program GRETL.
Assessment criteria	Capability to apply theoretical knowledge to solve theoretical and practical exercises. Capability to understand, interpret the results and draw appropriate conclusions.

Final grade percentage: 50% for the training plan A with minimum grade 3
Final grade percentage: 0% for the training plan B with minimum grade 0

Partial exam (2/2)

Modality	Assessment
Technique	Extended-response, discursive examinations **(retrievable)**
Description	The second partial exam will evalaute student's theoretical and applied knowledge from topics 5-7. The following aspects will be evaluated during the final exam: the level of theoretical knowledge, the capacity to interpret and extract conclusions using the empirical results, and the ability to use the econometric program GRETL.
Assessment criteria	Capability to apply theoretical knowledge to solve theoretical and practical exercises. Capability to understand, interpret the results and draw appropriate conclusions.

Final grade percentage: 50% for the training plan A with minimum grade 3
Final grade percentage: 0% for the training plan B

Resources, bibliography and additional documentation

Apart from the books indicated in the bibliography, additional material will be made available to download from the course website. Course website also contains the slides for the theory classes, exercises for the practical sessions, data sets,complimentary exercises, detailed explanations of specifit topics and also the grades for the in-term evaluation.

Basic bibliography

Arcarons, J.y Calonge, S. (2008): Microeconometría: introducción y aplicaciones con software econométrico para Excel. Delta, Publicaciones Universitarias.
Greene, W. (2007): Econometric Analysis. Addison-Wesley/Prentice Hall.

Complementary bibliography

Long, J. Scott (1997). Regression Models for Categorical and Limited Dependent Variables. SAGE Publications.
Wooldridge, J. M. (2006). Introducción a la Econometría. Un enfoque moderno. Thomson.
Wooldridge, J. M. (2002). Econometric Analysis of Cross Section and Panel Data. MIT Press

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