UNIVERSIDAD DE CASTILLA - LA MANCHA

GUÍA DOCENTE

1. General information

Course:	ECONOMETRIC METHODS AND MODELLING	**Code:**	54323
Type:	CORE COURSE	**ECTS credits:**	6
Degree:	329 - UNDERGRADUATE DEGREE PROGRAMME IN BUSINESS MANAGEMENT AND ADMINISTRATION (TA)	**Academic year:**	2023-24
Center:	15 - FACULTY OF SOCIAL SCIENCES AND INFORMATION TECHNOLOGIES	**Group(s):**	60
Year:	3	**Duration:**	C2
Main language:	Spanish	**Second language:**	English
Use of additional languages:	English	**English Friendly:**	Y
Web site:		**Bilingual:**	N

Lecturer: **IVAN MARTIN LADERA** - Group(s): **60**

Building/Office	Department	Phone number	Email	Office hours
Facultad de Ciencias Sociales y Tecnologías de la Información/Despacho 2.10	ECO .ESP. E INT.,ECONOMET. E Hª E INS.EC	926051584	ivan.my@uclm.es	Tuesday & Wednesday from 2PM to 5PM

2. Pre-Requisites

Mandatory requirements:

1.- Matrix algebra

2.- Statistical inference

3.- Introduction to Econometrics: Basic econometrics linear regression models

4.- Economic theory

5.- Economic structure and national accounting

6.- English B1, B2 recomended

3. Justification in the curriculum, relation to other subjects and to the profession

1. Contribution to the curriculum:

Econometric Methods and Models studies has as its central purpose ilustarte students to the theoretical and theoretical basic knowledge of econometric modeling, model's construction from the technical point of view. This includes:

- Ability to diagnose the technical quality of a model and to establish a strategies to improve the model based on its diagnosis.

- Management of the different techniques and methods for model optimization and for a correct use of the constructed econometric model.

- Ability to construct a univariate model of time series, as a type of modeling alternative to the economic ones.

It is intended that the student get a set of skills that allow you to apply the theoretical knowledge acquired in the construction of an econometric model, which will form the course work that will be developed throughout the course, under the supervision of the teacher and with the support of computer equipment and econometric software.

2. Relationship with other subjects:

The subject taught is related to the content of subjects in which numerical information is manipulated. In particular, a good mathematical training is necessary. It is the continuation of the subject Statistical Inference and Introduction to Econometrics. It is also related to other matters such as portfolio management in the area of ¿¿Finance and estimation of models in Macroeconomics, and applications of modeling to different forecasts of strategic variables of the company (sales forecasts, treasury models, budget forecast, market forecasts, etc.)

3. Relationship with the profession:

The general objective will be to train professionals who can analyze, in a critical and rigorous way, the economic and business reality, as well as to make decisions in an environment of uncertainty, which will enable them to choose the best alternative to act. This includes:

- Implement the relations and relevant variables of strategic planning in mathematical-econometric models that allow establishing alternative scenarios for the time horizon and evaluate the different policies.

- Design and construction of prediction models in the short and medium term, of the strategic variables of the company: sales, costs, human resources, prices, business investments, etc.

- Quantify the effects of business policy changes on business results (for example, the impact of advertising campaigns, changes in the product, in the organization, etc.) and measure the effectiveness of the adopted policies.

- Incorporate strategic planning into mathematical-econometric models that allow establishing alternative scenarios for the time horizon and evaluate the different policies.

- Introduce the student in the theoretical basic knowledge of the Econometric Methods.

- Management of basic techniques and tools for the quantification of relationships between relevant variables in the business world.

- Ability to recognize a problem, analyze it and solve it using the scientific method of modeling.

- Data management and external and internal indicators of the company, relevant for decision making.

- Apply the acquired theoretical knowledge to the realization of a course work in which the student will be able to elaborate, under the direct supervision of the professor and with the support of the computer equipment, an econometric model.

- Acquire the capacity for debate and informed discussion about the issues and problems that affect the business decision-making process from a quantitative perspective.

- Train the business economist to deal with situations of prediction and simulation of company policies at the service and as a basis for decision making.

4. Degree competences achieved in this course

Course competences

Code	Description
E05	Develop the ability to analyze any information on the situation and possible development of a company and transform it into a business opportunity.
E07	Understand the economic environment as a result and application of theoretical or formal representations on how the economy works. To do so, it will be necessary to be able to understand and use common handbooks, as well as articles and, in general, leading edge bibliography in the core subjects of the curriculum.
E11	Know the workings and consequences of the different economic systems
E13	Ability to make logical representative models of the business reality
G01	Possession of the skills needed for continuous, self-led, independent learning, which will allow students to develop the learning abilities needed to undertake further study with a high degree of independence.
G04	Ability to use and develop information and communication technologies and to apply them to the corresponding business department by using specific programmes for these business areas.

5. Objectives or Learning Outcomes

Course learning outcomes

Description

Work out problems in creative and innovative ways.

Know the tools and methods for the quantitative analysis of the company and its environment, including models for business decision making as well as economic forecast models.

Additional outcomes

-Management of specific software for the construction of econometric models and quantitative analysis.
-Advance use and management on Excel, Word and PowerPoint, Numbers, Pages, Keynote, Prezi and/or others for preparing worksheets and reporting.

6. Units / Contents

Unit 1: REGRESSION MODEL EXTENSIONS
Unit 2: STRUCTURAL CHANGE
Unit 3: COLINALITY
Unit 4: AUTOCORRELATION
Unit 5: HETEROSCEDASTICITY
Unit 6: DYNAMIC MODELS I
Unit 7: DYNAMIC MODELS II
Unit 8: SIMULTANEOUS EQUATIONS MODELS: SPECIFICATION
Unit 9: SIMULTANEOUS EQUATIONS MODELS: ESTIMATION
Unit 10: USING MULTIPLE REGRESSION MODELS
Unit 11: BUSINESS MODELS AND STRATEGIC PLANNING
Unit 12: FORECASTING, SIMULATION AND STRATEGIC INFORMATION SYSTEMS

7. Activities, Units/Modules and Methodology

Training Activity	Methodology	Related Competences (only degrees before RD 822/2021)	ECTS	Hours	As	Com	Description
Class Attendance (theory) [ON-SITE]	Lectures	E05 E07 E11 E13	1.2	30	N	-	
Computer room practice [ON-SITE]	Combination of methods	E05 E07 E11 E13 G01 G04	0.8	20	N	-	
Other off-site activity [OFF-SITE]	Combination of methods	E05 E07 E11 E13 G01 G04	0.4	10	Y	N	
Other on-site activities [ON-SITE]	Combination of methods	E05 E07 E11 E13 G01 G04	0.32	8	Y	N	
Study and Exam Preparation [OFF-SITE]	Self-study	E05 E07 E11 E13 G01 G04	3.2	80	N	-	
Final test [ON-SITE]	Assessment tests	E05 E07 E11 E13 G01 G04	0.08	2	Y	Y	
		Total:	**6**	**150**			
		Total credits of in-class work: 2.4					**Total class time hours: 60**
		Total credits of out of class work: 3.6					**Total hours of out of class work: 90**

As: Assessable training activity
Com: Training activity of compulsory overcoming (It will be essential to overcome both continuous and non-continuous assessment).

8. Evaluation criteria and Grading System

Evaluation System	Continuous assessment	Non-continuous evaluation*	Description
Other methods of assessment	30.00%	0.00%	[Continuous Evaluation] Individual work, participation and positive result of the practical sessions carried out during the classes dedicated to this end, participation and completion of tasks, seminars, tutorials and resolution of the questions raised. Individual or team course work designed for compulsory students. Attention will be paid not only to the content, but also to the correct use of scientific forms, presentation and oral presentation. [Non Continuous Evaluation] Individual course work designed for compulsory students. Attention will be paid not only to the content, but also to the correct use of scientific forms, presentation and oral presentation.
Final test	70.00%	0.00%	[Continuous Evaluation] The final test represents 70% of the grade, being necessary to obtain a minimum of 4 points to pass. The presentation in time and form of the course work is an essential requirement to be able to take the final evaluation test. [Non Continuous Evaluation] The final test represents 100% of the grade. The presentation in time and form of the course work is an essential requirement to be able to take the final evaluation test.
Final test	0.00%	100.00%	Individual mandatory coursework necessary.
Total:	**100.00%**	**100.00%**	

According to art. 4 of the UCLM Student Evaluation Regulations, it must be provided to students who cannot regularly attend face-to-face training activities the passing of the subject, having the right (art. 12.2) to be globally graded, in 2 annual calls per subject , an ordinary and an extraordinary one (evaluating 100% of the competences).

Evaluation criteria for the final exam:

Continuous assessment:

There will be mandatory tasks and a course works all of them evaluable and non-recoverable where the participation and result of the practical sessions, tasks, seminars, tutorials and other activities will be valued. The presentation in term and form of the course work is a mandatory requirement to be able to take the final evaluation test.

Final exam: To make the average with the rest of the grades in the final exam, it is necessary to obtain a minimum score of 4 points out of 10.

Non-continuous evaluation:

online final test, The final test represents 100% of the grade. The presentation in term and form of the course work is a mandatory requirement.

Specifications for the resit/retake exam:

[Continuous assessment]
All the criteria, grades and percentages of the ordinary call are maintained.
Individual mandatory coursework necessary.

Students who, even having done evaluable activities, wish to be evaluated with the non-continuous evaluation criteria must inform the teacher before the end of the class period, provided that they have not participated during the class period in evaluable activities that together account for at least 50% of the total evaluation of the subject.

If the student has reached this 50% of evaluable activities or if, in any case, the class period has ended, he/she will be considered in continuous evaluation without the possibility of changing the evaluation modality.

[Non-Continuous Evaluation]
All the criteria of the ordinary call are maintained.
Individual mandatory coursework necessary.

Specifications for the second resit / retake exam:

Specific final test. The presentation in time and form of the course work is an essential and mandatory.

9. Assignments, course calendar and important dates

Not related to the syllabus/contents	
Hours	**hours**
Other on-site activities [PRESENCIAL][Combination of methods]	8
Final test [PRESENCIAL][Assessment tests]	2
Unit 1 (de 12): REGRESSION MODEL EXTENSIONS	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	3
Computer room practice [PRESENCIAL][Combination of methods]	1
Other off-site activity [AUTÓNOMA][Combination of methods]	.5

Study and Exam Preparation [AUTÓNOMA][Self-study]	4
Unit 2 (de 12): STRUCTURAL CHANGE	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	3
Computer room practice [PRESENCIAL][Combination of methods]	1
Other off-site activity [AUTÓNOMA][Combination of methods]	.5
Study and Exam Preparation [AUTÓNOMA][Self-study]	6
Unit 3 (de 12): COLINALITY	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	2
Computer room practice [PRESENCIAL][Combination of methods]	1
Other off-site activity [AUTÓNOMA][Combination of methods]	.5
Study and Exam Preparation [AUTÓNOMA][Self-study]	5
Unit 4 (de 12): AUTOCORRELATION	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	2
Computer room practice [PRESENCIAL][Combination of methods]	1
Other off-site activity [AUTÓNOMA][Combination of methods]	1
Study and Exam Preparation [AUTÓNOMA][Self-study]	6
Unit 5 (de 12): HETEROSCEDASTICITY	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	2
Computer room practice [PRESENCIAL][Combination of methods]	2
Other off-site activity [AUTÓNOMA][Combination of methods]	1
Study and Exam Preparation [AUTÓNOMA][Self-study]	5
Unit 6 (de 12): DYNAMIC MODELS I	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	2
Computer room practice [PRESENCIAL][Combination of methods]	2
Other off-site activity [AUTÓNOMA][Combination of methods]	1
Study and Exam Preparation [AUTÓNOMA][Self-study]	5
Unit 7 (de 12): DYNAMIC MODELS II	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	2
Computer room practice [PRESENCIAL][Combination of methods]	2
Other off-site activity [AUTÓNOMA][Combination of methods]	1
Study and Exam Preparation [AUTÓNOMA][Self-study]	8
Unit 8 (de 12): SIMULTANEOUS EQUATIONS MODELS: SPECIFICATION	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	4
Computer room practice [PRESENCIAL][Combination of methods]	2
Other off-site activity [AUTÓNOMA][Combination of methods]	1
Study and Exam Preparation [AUTÓNOMA][Self-study]	10
Unit 9 (de 12): SIMULTANEOUS EQUATIONS MODELS: ESTIMATION	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	4
Computer room practice [PRESENCIAL][Combination of methods]	2
Other off-site activity [AUTÓNOMA][Combination of methods]	1
Study and Exam Preparation [AUTÓNOMA][Self-study]	8
Unit 10 (de 12): USING MULTIPLE REGRESSION MODELS	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	2
Computer room practice [PRESENCIAL][Combination of methods]	2
Other off-site activity [AUTÓNOMA][Combination of methods]	1
Study and Exam Preparation [AUTÓNOMA][Self-study]	8
Unit 11 (de 12): BUSINESS MODELS AND STRATEGIC PLANNING	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	2
Computer room practice [PRESENCIAL][Combination of methods]	2
Other off-site activity [AUTÓNOMA][Combination of methods]	1
Study and Exam Preparation [AUTÓNOMA][Self-study]	10
Unit 12 (de 12): FORECASTING, SIMULATION AND STRATEGIC INFORMATION SYSTEMS	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	2
Computer room practice [PRESENCIAL][Combination of methods]	2
Other off-site activity [AUTÓNOMA][Combination of methods]	.5
Study and Exam Preparation [AUTÓNOMA][Self-study]	5
Global activity	
Activities	**hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	30

Computer room practice [PRESENCIAL][Combination of methods]	20
Other off-site activity [AUTÓNOMA][Combination of methods]	10
Other on-site activities [PRESENCIAL][Combination of methods]	8
Final test [PRESENCIAL][Assessment tests]	2
Study and Exam Preparation [AUTÓNOMA][Self-study]	80
Total horas:	150

10. Bibliography and Sources

Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
Gujarati, Damodar N.	Principios de econometría	McGrawHill		84-481-4632-8	2006	
Greene, William H.1951-	Análisis econométrico	Prentice Hall		84-8322-007-5	1999	
Gujarati, Damodar N.	Econometría	McGraw-Hill Interamericana		978-607-15-0294-0	2009	
Intriligator, Michael D.	Modelos econométricos, técnicas y aplicaciones	Fondo de Cultura Económica		968-16-3140-4	1990	
Intriligator, Michael D.	Modelos econométricos, técnicas y aplicaciones	Fondo de Cultura Económica		968-16-3140-4	1990	
Maddala, G. S.	Introducción a la econometría	Prentice-Hall Hispanoamericana		968-880-697-8	1996	
Novales Cinca, Alfonso	Econometría	McGraw-Hill		84-481-0128-6	1997	
Pindyck, Robert S.	Econometría: modelos y pronósticos	McGraw-Hill		970-10-2925-9	2000	
Pulido SanRomán, A. y PérezGarcía, J.	Modelos econométricos	Piramide	Madrid	84-368-1534-3	2001	
Wooldridge, Jeffrey M.	Introducción a la econometría : un enfoque moderno	Thomson		978-84-9732-268-3	2008	