UNIVERSIDAD DE CASTILLA - LA MANCHA

GUÍA DOCENTE

1. General information

Course:	BUSINESS DECISION MODELLING	**Code:**	54338
Type:	ELECTIVE	**ECTS credits:**	4.5
Degree:	329 - UNDERGRADUATE DEGREE PROGRAMME IN BUSINESS MANAGEMENT AND ADMINISTRATION (TA)	**Academic year:**	2020-21
Center:	15 - FACULTY OF SOCIAL SCIENCES AND INFORMATION TECHNOLOGIES	**Group(s):**	60
Year:	4	**Duration:**	C2
Main language:	Spanish	**Second language:**	English
Use of additional languages:		**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 and Wednesday from 11AM to 1PM and from 3PM to 4PM upon request via email

2. Pre-Requisites

Mandatory requirements:

Studied and passed the following courses: Introduction to Econometrics, Statistical Inference and Econometric Methods and Models.

Also needed:

1.- Matrix algebra

2.- Statistical inference

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

4.- Economic theory

5.- Economic structure and national accounting

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

1. Contribution of the subject to the curriculum:

Models for Business Decision course has as main goal offer theoretical and practical approaches to modeling applied to the business field, with special attention to forecasting models, econometric simulation and optimization, as support for decision making. This includes:

-To provide information to students in different professional approaches to use of forecasting models and business simulation useful in the decision-making process.

- Offer a set of business prediction techniques in the short and medium term.

- Framing the role of modeling as a forecasting and simulation tool for the modern Strategic Information Systems in the company (SIE), the analysis of business environment indicators and the creation of scorecards in the company.

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

- 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.

- Quantify the effects of business policy changes on business results (eg: 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.

2. Relationship with other subjects:

The subject taught is related to the content of subjects in which numerical information is manipulated. It is an essential complement to a practical and real vision applied to the business field of subjects such as Introduction to Econometrics and Econometric Methods and Models.

3. Relationship with the profession:

The general objective will be to train professionals who know how to 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:

-Capacitate the economist to attend situations of prediction and simulation of company policies at the service of Decision Making. -Design and construction of prediction models in the short and medium term, of the strategic variables of the company: sales, costs, resources

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 in mathematical-econometric models that allow establishing alternative scenarios for the time horizon and evaluate the different policies.

4. Degree competences achieved in this course

Course competences

Code	Description
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.
E08	Ability to produce financial information, relevant to the decision-making process.
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.
G03	Develop oral and written communication skills in order to prepare reports, research projects and business projects and defend them before any commission or group of professionals (specialised or non-specialised) in more than one language, by collecting relevant evidence and interpreting it appropriately so as to reach conclusions.
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

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.

Work out problems in creative and innovative ways.

Additional outcomes

Expertise on Excel software and econometric packages such Gretl. Time Series analysis, knowledge of models for business decision making as well as economic forecast models.

6. Units / Contents

Unit 1: Econometrics models for business: Approach and applications

- **Unit 1.1** Econometrics models for business: Approach and applications
- **Unit 1.2** Business forecasting techniques
- **Unit 1.3** Tools for decision making

Unit 2: Decision making and forecast Information systems

- **Unit 2.1** Business Information Systems
- **Unit 2.2** Business environment Analysis: Indicators and Data Processing
- **Unit 2.3** Strategic Information System for business

Unit 3: Business applications

- **Unit 3.1** Company Sales forecasts
- **Unit 3.2** Added value applications (Accounting, Human Resources, etc.)
- **Unit 3.3** Informed Reports and Presentations for Decision Making

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	E07 E08 G01 G04	0.9	22.5	N	-	Subjet and course basic concepts explanation.
Laboratory practice or sessions [ON-SITE]	Combination of methods	E07 E08 G04	0.6	15	Y	N	Instrumental in nature, so that the student acquires the necessary knowledge on how to access economic and business data banks, as well as on the use of economic and econometric software packages, among other aspects. It could be a split practices group.
Writing of reports or projects [OFF-SITE]	Combination of methods	E07 E08 G01 G03 G04	2.7	67.5	Y	Y	Preparation of a tutorial course work. The elaboration of this work will consist in the construction of an econometric model. It requires having theoretical knowledge of the subject, obtaining economic data and managing a software package of econometric modeling, aspects on which the student will receive

							ongoing training throughout the course. The teachers will guide and advise the student in the preparation of this course work. Practical cases and recommended readings, empirical models and resolution of practical exercises.
Problem solving and/or case studies [ON-SITE]	Combination of methods	E07 E08 G03 G04	0.22	5.5	Y	N	Discussion of practical cases and recommended readings, debates on the theoretical explanations, realization of empirical models and resolution of practical exercises.
Final test [ON-SITE]	Assessment tests	G03	0.08	2	Y	Y	Final test with presentation and oral defense of the student's interactive work
		Total:	**4.5**	**112.5**			
		Total credits of in-class work: 1.8					**Total class time hours: 45**
		Total credits of out of class work: 2.7					**Total hours of out of class work: 67.5**

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
Final test	40.00%	100.00%	[Continuous Evaluation] The final test will contribute 40% of the final grade. [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.
Other methods of assessment	60.00%	0.00%	[Continuous Evaluation] Participation and positive result of practical sessions, seminars, tutorials. Individual work. Solving problems and practical cases. Teamwork. Attention will be paid not only to the content, but to the correct use of scientific forms, content presentation and oral presentation. [Non Continuous Evaluation] The presentation in time and form of the course work is an essential requirement to be able to take the final evaluation test.
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:

Completion of a final test that will account for a maximum of 40% of the final grade, to which will be added the rest of the marks obtained in the previous activities carried out during the course (problem solving, preparation of papers, oral presentation, etc.) as long as the final test is passed with a minimum of 5 points out of 10.

Non-continuous evaluation:

The specific final test for the non-continuous evaluation 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.

Specifications for the resit/retake exam:

[Continuous Evaluation]
All the criteria, notes and percentages of the ordinary call are maintained.
The presentation in time and form of the course work is an essential requirement to be able to take the extraordinary final evaluation test.

[Non Continuous Evaluation]
All the criteria of the ordinary call are maintained.
The presentation in time and form of the course work is an essential requirement to be able to take the extraordinary final evaluation test.

Specifications for the second resit / retake exam:

Full Final test

9. Assignments, course calendar and important dates

Not related to the syllabus/contents	
Hours	**hours**
Writing of reports or projects [AUTÓNOMA][Combination of methods]	7.5
Problem solving and/or case studies [PRESENCIAL][Combination of methods]	5.5
Final test [PRESENCIAL][Assessment tests]	2
Unit 1 (de 3): Econometrics models for business: Approach and applications	
Activities	**Hours**

Class Attendance (theory) [PRESENCIAL][Lectures]	6
Laboratory practice or sessions [PRESENCIAL][Combination of methods]	6
Writing of reports or projects [AUTÓNOMA][Combination of methods]	10
Unit 2 (de 3): Decision making and forecast Information systems	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	6
Laboratory practice or sessions [PRESENCIAL][Combination of methods]	4
Writing of reports or projects [AUTÓNOMA][Combination of methods]	10
Unit 3 (de 3): Business applications	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	10.5
Laboratory practice or sessions [PRESENCIAL][Combination of methods]	5
Writing of reports or projects [AUTÓNOMA][Combination of methods]	40
Global activity	
Activities	**hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	22.5
Laboratory practice or sessions [PRESENCIAL][Combination of methods]	15
Writing of reports or projects [AUTÓNOMA][Combination of methods]	67.5
Problem solving and/or case studies [PRESENCIAL][Combination of methods]	5.5
Final test [PRESENCIAL][Assessment tests]	2
Total horas:	112.5

10. Bibliography and Sources

Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
A. Pulido, A.M. López	Predicción y simulación aplicada a la economía y gestión de empresas	Pirámide	Madrid		1999	
Greene, William H.1951-	Análisis econométrico	Prentice Hall		978-84-8322-007-5	2000	
Intriligator, Michael D.	Modelos econométricos, técnicas y aplicaciones	Fondo de Cultura Económica		968-16-3140-4	1990	
Pindyck, Robert S.	Econometría: modelos y pronósticos	McGraw-Hill		970-10-2925-9	2000	
Villalba Vila, D., Jerez Méndez, M.A	Sistemas de optimización para la planificación en la toma de decisiones empresariales	Pirámide	Madrid		1990	
Wooldridge, Jeffrey M.	Introducción a la econometría: un enfoque moderno	Thomson		84-9732-268-1	2005	