COURSE DATA

Data Subject	
Code	35827
Name	Forecasting methods
Cycle	Grade
ECTS Credits	4.5
Academic year	2024 - 2025

Study (s)

Degree	Center	Acad. year	Period
1313 - Degree in Business Management and Administration	Faculty of Economics	4	First term
1330 - Degree in Business Management and Administration (Ontinyent)	Faculty of Economics	4	First term
1926 - Double Degree Program Tourism and BMA	Faculty of Economics	5	First term

Subject-matter

Degree	Subject-matter	Character
1313 - Degree in Business Management and Administration	22 - Methods of analysis	Optional
1330 - Degree in Business Management and Administration (Ontinyent)	22 - Métodos de Análisis	Optional
1926 - Double Degree Program Tourism and BMA	8 - Asignatura optativa de quinto curso	Optional

Coordination

Name	Department
FERNANDEZ DE GUEVARA RADOSELOV, JUAN FRANCISCO	10 - Economic Analysis

SUMMARY

Forecasting Methods course is taught in the first semester of the fourth year of the Degree in Management and Business Administration, framing itself in the set of materials Quantitative Methods module. The course is optional and twice a year, with a total workload of 4.5 ECTS.

Given the great complexity in both the overall economy and in the field of business, methods to reduce uncertainty about future events are required. Reducing uncertainty by forecasting techniques, facilitate decision-making at company managers or economic policy.The Forecasting Methods course is aim at providing students the basic concepts and skills to be able to perform forecasting exercises under uncertainty.

The focus of the course is mainly applied, putting the emphasis on the utility of forecasting techniques and skills development for the selection of what is the best method for each individual problem, rather than the theoretical developments.The course is organized around three thematic blocks. The first is devoted to the analysis of forecasting methods in contexts where there is no prior information of the relevant variables for prediction. For this study techniques such as Delphi method, design of experiments, and others.

The second block of the course is dedicated to the development of forecasting methods when information on the historical evolution of the series is available. For this, moving averages techniques exponential smoothing, Holt-Winters, etc are studied.

The last block of the course is devoted to the ARIMA models.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements

No prerequisites. However, it is recommended a basic knowledge of Mathematics, Statistics and Econometrics, all subjects taught in previous courses.

COMPETENCES (RD 1393/2007) // LEARNING OUTCOMES (RD 822/2021)

1313 - Degree in Business Management and Administration

- Demonstrate capacity for analysis and synthesis.
- Have organisation and planning skills.
- Be able to use ICTs in the field of study.

- Be able to analyse and search for information from different sources.
- Be able to solve problems.
- Be able to make decisions.
- Be able to transmit and communicate complex ideas and approaches to both specialised and lay audiences.
- Be able to work in a team.
- Have critical and self-critical capacity.
- Manage time effectively.
- Be able to learn autonomously.
- Be able to adapt to new situations.
- Show creativity.
- Show leadership and skills for mobilising the capacities of others.
- Have initiative and entrepreneurial spirit.
- Show motivation for quality.
- Be able to carry out strategic diagnoses in complex and uncertain environments using the appropriate methodologies to resolve them.
- Be able to make decisions under certainty and uncertainty environments.
- Be able to apply analytical and mathematical methods for the analysis of economic and business problems.
- Know the basic techniques, methods and instruments linked to behaviour analysis.
- Be able to define, solve and present complex problems systemically.
- Be able to relate the different elements that interact in the decisions of individuals.
- Be able to express oneself in formal, graphic and symbolic languages.
- Be able to plan, organise, control and evaluate the implementation of business strategies.
- Develop critical capacity on Spanish and international economic current affairs.
- Be able to analyse the economic situation and understand its implications.

LEARNING OUTCOMES (RD 1393/2007) // NO CONTENT (RD 822/2021)

• To be able to conduct a proper analysis and assessment of the problems.

• To apply appropriate method for each proposed case.

• To now how to organize and outline all the necessary stages to prepare a report.

• To be able to design and conduct a survey research.

• To make projections and inference of the different variables, and to develop scenarios

DESCRIPTION OF CONTENTS

1. Forecasting and simulation in Economics and Management

1.1. Prediction, future and decision making.
1.2. Economic and business forecasting: fields of application.
1.3. Global centers and sources of economic forecasting.
1.4. Prediction techniques / simulation.
1.5. Type of forecasting: prediction horizon, media and information.
1.6. Stages of the forecasting / simulation process

2. Techniques prediction elementary historical information

2.1. Historical information components of economic series.
2.2. Moving averages.
2.3. Exponential smoothing: the simple smoothing, smoothing trend.
2.4. Forecast series with seasonal component: Holt-Winters.

3. Long-term analysis: ARIMA models

3.1. Introduction and notation. Stationarity in mean and variance.
3.2. AR and MA models.
3.3. ARIMA models.
3.4. Stages of implementation of the ARIMA methodology. Identification, estimation and forecasting.
3.5. Models with seasonal and calendar effects.

4. Elemental techniques without history

4.1. Elemental techniques without history
4.2. Surveys of intentions, expectations and attitudes.
4.2. Experimental design.
4.3. Simulation using recursive formulas.
4.4. The Delphi method.
4.5. Cross impacts.

WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	22,50	100
Classroom practices	22,50	100
Development of group work	10,00	0
Development of individual work	10,00	0
Study and independent work	20,00	0
Preparation of evaluation activities	10,00	0
Preparing lectures	5,50	0
Preparation of practical classes and problem	12,00	0
TOTAL	**112,50**	

TEACHING METHODOLOGY

The methodology of the classes is aimed at fostering the ability to combine individual work with the teamwork:

- For the lectures students will prepare in advance the basic material that forms the basis for the theoretical background, and the main questions that arise in these readings. Professor combine their explanations with the active participation of students (raising doubts that can answer the teacher and / or peers, resolution of brief questions raised by the teacher, group discussion of the issues that have attracted the most interest). It is intended that students develop both their ability to defend their ideas and their oral and written communication (raising doubts publicly about the subject and / or written by solving the required tasks).

-For The practical classes students will prepare in advance a set of exercises, case studies and resolution that will be be presented in the classroom. It is intended that students develop their problem solving skills, oral and written communication, and coordination of activities and identification, treatment and processing of information of statistical sources.The different taks will result in deliverables to conform the qualifications.

EVALUATION

The subject will be evaluating as follows:
1. A written exam at the end of the semester (up to 7 points). It will be condition to pass the exam to obtain at least 40% of the exam.2. Evaluation of deliverables developed by the student during the course (up 3 points). 3. In case of lack of deliverables students can only get the points of the written exam and hence they will need to get 5 out of 7 points for that test.

REFERENCES

Basic

- La bibliografía básica consta de materiales confeccionadas por los profesores de la asignatura y puesta a disposición de los alumnos.
- Pulido, A. y A. López (1999): Predicción y simulación aplicada a la economía y gestión de empresas, Pirámide.
- Landeta, Jon. (1999) El método Delphi. Una Técnica de previsión para la incertidumbre. Ariel. Barcelona
- Uriel, E. y A. Peiró (2000): Introducción al análisis de series temporales. 344 páginas Editorial AC.