

**COURSE DATA****Data Subject**

Code	35888
Name	Quantitative techniques for business
Cycle	Grade
ECTS Credits	6.0
Academic year	2023 - 2024

Study (s)

Degree	Center	Acad. Period
1314 - Degree in International Business	Faculty of Economics	2 Second term

Subject-matter

Degree	Subject-matter	Character
1314 - Degree in International Business	9 - Quantitative methods applied to business	Obligatory

Coordination

Name	Department
RICO BELDA, PAZ	10 - Economic Analysis

SUMMARY

The subject 'Quantitative techniques for business' is a compulsory subject with duration of one term. The subject has 6 ECTS (3 theoretical ECTS and 3 practical ECTS). It is allocated in the second term of the second course of the *Grado* in International Business (GIB).

The aim of this subject is to provide the students with basic skills on the quantitative techniques required to analyze the environment of international business and make data driven decisions.

This subject implies the use of statistical and mathematical methods. Students are required to use previous calculus and statistics concepts. This fact makes 'Quantitative techniques for business' a subject with a high educational level, both on the theoretical and practical levels. By using the corresponding software tools, students will develop integral skills to apply quantitative methods to analyze the facts of international business.

The contents of this subject are the following: Basic linear models for business: hypotheses tests and



model validation. Time series for business. Binary choice models for business.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

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

Other requirements

Basic knowledge on linear algebra, calculus and economics.

OUTCOMES

1314 - Degree in International Business

- Develop the capacity to evaluate and critically analyse international economic phenomena and agents.
- Be able to work in multidisciplinary and intercultural teams.
- Know how to use the statistical methods and software to manage the company's operations.
- Use the economic and financial information of the company to make decisions.
- Develop the capacity to prepare and defend reports that contribute to the decision-making of public and private agents.
- Adquirir conocimientos básicos de Estadística.
- Conocer el análisis de datos unidimensionales.
- Tener conocimientos de regresión.
- Conocer los aspectos básicos de las series temporales y de los modelos univariantes.
- Saber utilizar paquetes informáticos específicos que ayuden a resolver problemas de toma de decisiones en el ámbito empresarial.

LEARNING OUTCOMES

- To be able to discover and determine relations among variables.
- To be able to analyze time evolution of variables and model their behavior.
- To be able to characterize uncertain events.
- To be able to apply statistical/econometric software to manage and analyze available data in a business context.



DESCRIPTION OF CONTENTS

1. Quantitative information and managerial decision-making

Managerial decision making: traditional approach (expected utility theory)

2. Introduction to linear regression models

- 2.1 Econometric models and economic data
- 2.2 The linear regression model
- 2.3 Properties and hypothesis of the regression model
- 2.4 Hypothesis testing with the múltiple regression model
- 2.5 Prediction
- 2.6 Validation of the regression model

3. Time and spatial data

Data with time component: dynamic visualization
Introduction to time series analysis

WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	30,00	100
Computer classroom practice	30,00	100
Development of group work	20,00	0
Development of individual work	5,00	0
Study and independent work	15,00	0
Readings supplementary material	5,00	0
Preparation of evaluation activities	15,00	0
Preparing lectures	5,00	0
Preparation of practical classes and problem	10,00	0
Resolution of case studies	15,00	0
TOTAL	150,00	



TEACHING METHODOLOGY

The teaching methodology for this subject will include the following activities:

- Lectures to introduce main theoretical topics (1,2 ECTS).
- Practical activities in the classroom with individual or team work for problem solving and study cases, including applications and presentations (1,2 ECTS).
- Student's supervised independent work based on report reading and analysis and problem solving. These tasks will involve individual and team work.(1,6 ECTS).
- Personal study and tests (2 ECTS).

EVALUATION

Subject's competences will be evaluated by using the following procedures:

- 1.- Written exam (multiple choice);
- 2.- Evaluation of the practical activities developed by the student(s), as well as the production of reports and works and their corresponding (oral) presentations;
- 3.- Continuous assessment of students, based on their participation and implication in the course.

Students need to pass the written exam to pass the subject. The mark of this exam determines a 70% of the final mark.

Attendances and participation, as well as the development of the activities established by the professor will determine the remaining 30% of the final mark of the subject.

REFERENCES

Basic

- Referencia b1: Uriel, E. (2013), Introducción a la Econometría, Manual electrónico, Valencia (<http://www.uv.es/uriel/libroes.htm>)
- Referencia b1: Uriel, E. (2013), Introduction to Econometrics, Manual electrónico, Valencia (<http://www.uv.es/uriel/libroin.htm>)
- Referencia b2: Wooldridge, J. M. (2006) Introducción a la econometría. 2ª edición. Thomson Paraninfo
- Referencia b2: Wooldridge, J. M. (2009) Introductory Econometrics: A Modern Approach, 4th



Edition. South western cengage learning

Additional

- Render, B., Stair, R.M. and Hanna, M.E. (2006) Quantitative analysis for management, Ninth Edition, Prentice Hall, Pearson.

Render, B., Stair, R.M. and Hanna, M.E. (2006) Métodos cuantitativos para los negocios, Novena Edición, Prentice Hall, Pearson.