VNIVERSITAT ⦾ ID VALÈNCIA

COURSE DATA

Data Subject	
Code	35856
Name	Quantitative techniques in finance
Cycle	Grade
ECTS Credits	4.5
Academic year	2021 - 2022

Study (s)			
Degree	**Center**	**Acad. year**	**Period**
1313 - Degree in Business Management and Administration	Faculty of Economics	4	First term

Subject-matter		
Degree	**Subject-matter**	**Character**
1313 - Degree in Business Management and Administration	33 - Quantitative techniques in finance	Optional

Coordination	
Name	**Department**
HERRANZ ZARZOSO, NOEMI	10 - Economic Analysis

SUMMARY

The subject of Quantitative Techniques in Finance is taught in the first semester of the fourth year of the Degree in Business Management and Administration, being framed in the set of subjects with a statistical and quantitative content.

It is optional and semiannual, with a total teaching load of 4.5 credits.

The aim of the course is to provide students with the basic knowledge of appropriate analytical and quantitative tools to address the analysis of financial reality. Among the basic topics of study in this subject is the study of the main financial variables and the statistical properties of these variables with special reference to their temporal dynamics.

As a discipline of a mathematical-statistical nature, students will have to use the previous knowledge of calculation and statistics of previously studied subjects. It is, therefore, a training subject with a wide range of theoretical and practical content that relies on previous skills and allows them, with the support of certain computer tools, to obtain a comprehensive view of the quantitative analysis tools used in the study of financial reality.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

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

Other requirements

Estadística y econometría básica o intermedia.

OUTCOMES

1313 - Degree in Business Management and Administration

- Demonstrate capacity for analysis and synthesis.

- Be able to use English in a professional environment.

- Be able to analyse and search for information from different sources.

- Be able to solve problems.

- Have critical and self-critical capacity.

- Show motivation for quality.

- Be able to understand and use the different quantitative and qualitative methods to reason analytically, evaluate results and predict economic and financial parameters.

- Be able to apply analytical and mathematical methods for the analysis of economic and business problems.

- Be able to express oneself in formal, graphic and symbolic languages.

LEARNING OUTCOMES

The expected results of the learning of the subject are the following:
Complete the knowledge in quantitative methods provided in previous courses (Mathematics I, Mathematics II, Statistics I, Statistics II and Econometrics).
Knowledge of the basic concepts, techniques and instruments associated with statistical modeling: the descriptive analysis of initial data, the specification of time series models, the estimation of their parameters from the sample information, the analysis of the adequacy of the model to the reality studied and the contrast of hypotheses of interest.

DESCRIPTION OF CONTENTS

1. Statistical foundations

2. The financial logic

3. Present value

4. Financial variables. Returns

5. Linear regression model

6. Introduction to time series analysis

7. Efficient markets

WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	30,00	100
Classroom practices	15,00	100
Study and independent work	30,00	0
Readings supplementary material	15,00	0
Preparing lectures	10,00	0
Preparation of practical classes and problem	12,50	0
TOTAL	112,50	

TEACHING METHODOLOGY

THEORETICAL CLASSES

In the theoretical classes the teachers will make an oral presentation of the most important aspects of the subject. In addition, extensions will be proposed, as exercises, to be carried out by the students and which will later be corrected or solved in the practical classes. These complementary tasks must be submitted in writing. Students will prepare in advance the readings that serve as a basis for the theoretical explanation.

PRACTICAL CLASSES

The practical classes aim to consolidate the concepts acquired in the theoretical classes by solving exercises, problems and case studies.

The practical classes will be based on a combination of the resolution of theoretical / practical exercises and the elaboration of models from differentpractical cases, so computer software will be used. Exercise files will be available in the Virtual Classroom.

These exercises, problems and case studies will be designed for students to apply the knowledge and skills acquired in the theory class to real data, so that they complete their training process in the knowledge of an analytical instrument and its subsequent application to the elaboration of a quantitative financial model.

The monitoring of this evolution of practical learning will be carried out continuously to allow the student to evaluate the evolution of their acquired knowledge. The main assessment method will be the regular presentation of exercises and solved problems. The active participation of the student in class and the performance of exercises prior to the classes will also be valued.

EVALUATION

Final exam: 70%

Homework, exercices, partial tests, class participation: 30%

The subject will be evaluated through a double procedure:

1.- A final written exam of a theoretical / practical nature to evaluate the learning outcomes and their adequacy to the competences of the subject, with an assessment of 70% of the final grade. A pass in the aforementioned written test will be required, apart from the grade obtained in the other assessment procedures, to pass the subject.

2.- The remaining 30% of the grade will be the result of continuously assessing the student's ability to assimilate the knowledge and skills acquired to solve problems, perform practical work with real data and present the results obtained. The aforementioned qualification will include both the elaboration of team or individual works, presented in written or oral form and the resolution of exercises individually, the realization of tests or the own participation and implication of the student in the process of teaching-learning.

REFERENCES

Basic

- Población García, J y Serna Calvo, G. (2015) Finanzas Cuantitativas Básicas. Editorial Paraninfo.

- Wooldridge, J. M. (2006). Introducción a la econometría. Un enfoque moderno: un enfoque moderno. Editorial Paraninfo.

Additional

- Campvell, J. Y., Lo, A. L., MacKinlay, A.C. (1997), The econometrics of financial markets, Priceton University Press

- Ruppert, D. (2004), Statistics and finance: An introduction, Springer Verlag

- Tsay, R. S. (2005), Analysis of financial time series, John Wiley and Sons

ADDENDUM COVID-19

This addendum will only be activated if the health situation requires so and with the prior agreement of the Governing Council

English version is not available