

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

Code	35856
Name	Quantitative techniques in finance
Cycle	Grade
ECTS Credits	4.5
Academic year	2023 - 2024

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
BRETO MARTINEZ, CARLES	10 - Economic Analysis

SUMMARY

The main goal of the course is to expose students to the fundamentals and practice of quantitative techniques suitable for the analysis of financial reality. The key topics addressed are the statistical properties of time series of financial variables and the estimation of models based on real data for portfolio valuation and decision making.

PREVIOUS KNOWLEDGE**Relationship to other subjects of the same degree**



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

Other requirements

Students are advised to have successfully completed the subjects of Mathematics I and II, Statistics I and II and Econometrics.

OUTCOMES

1313 - Degree in Business Management and Administration

- Demonstrate capacity for analysis and synthesis.
- Be able to analyse and search for information from different sources.
- Be able to solve problems.
- Be able to make decisions.
- 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 make decisions under certainty and uncertainty environments.
- Be able to apply analytical and mathematical methods for the analysis of economic and business problems.
- Be able to define, solve and present complex problems systemically.
- Be able to express oneself in formal, graphic and symbolic languages.

LEARNING OUTCOMES

- Make predictions of relevant variables in finance using multiple quantitative analysis techniques, based on which to make decisions.
- Assess the suitability of quantitative analysis techniques in different cases.
- Assess the limitations of quantitative analysis techniques in different cases.

DESCRIPTION OF CONTENTS

1. Financial data and markets

**2. Statistical properties of financial returns****3. ARIMA models****4. Volatility analysis. ARCH models****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

Teaching will be structured around lectures and computer labs. Lectures will focus on the core aspects of the syllabus, motivated by real data and specific problems. These real data and specific problems will also be addressed in the computer labs, where the focus will be on solving these problems and on studying and analyzing these real data.

EVALUATION

Grade: final exam (70%) + continuous assessment (30%).

To pass the course, students must pass the final exam. Continuous assessment will be carried out throughout the academic year and may include assignments, problem sets, partial exams and participation in classroom activities.

REFERENCES



Basic

- Wooldridge, J. M. (2015). Introducción a la econometría: un enfoque moderno / Jeffrey M. Wooldridge; traducción Ma. del Carmen Enriqueta Hano Roa, Érika M. Jasso Hernan dBorneville (5a ed). México DF: Cengage Learning.
https://trobes.uv.es/permalink/34CVA_UV/um6gse/alma991001861329706258
- Wooldridge, J. M. (2011). Introducción a la econometría: un enfoque moderno / Jeffrey M. Wooldridge; traducción Ma. del Carmen Enriqueta Hano Roa, Érika M. Jasso Hernan dBorneville (4a ed.). México DF: Cengage Learning.
https://trobes.uv.es/permalink/34CVA_UV/um6gse/alma991006612259706258

Additional

- Tsay, R. S. (2010). Analysis of financial time series [electronic resource] / Ruey S. Tsay. (3rd edition). Hoboken, NJ: Wiley.
https://trobes.uv.es/permalink/34CVA_UV/um6gse/alma991009620333106258
- Tsay, R. S. (2010). Analysis of financial time series / Ruey S. Tsay., the University of Chicago Booth School of Business Chicago, IL (Third Edition). Hoboken, New Jersey: Wiley.
https://trobes.uv.es/permalink/34CVA_UV/um6gse/alma991009573315206258