

61428 - Quantitative Finance

Syllabus Information

Academic year: 2024/25

Subject: 61428 - Quantitative Finance

Faculty / School: 109 - Facultad de Economía y Empresa

Degree: 526 - Master's in Accounting and Finance

ECTS: 4.0

Year: 1

Semester: Annual

Subject type: Optional

Module:

1. General information

The subject "Quantitative Finance" is instrumental and basic and aims to provide students with the necessary tools for the analysis and interpretation of financial information. It also helps them to learn about the quantitative techniques necessary to model the behaviour of financial variables. By differentiating between univariate and multivariate models, students are provided with a more robust work methodology that is appropriate for each economic and financial reality to be analysed.

These approaches and objectives are aligned with the Sustainable Development Goals (SDGs) of the 2030 agenda and certain specific objectives (<https://www.un.org/sustainabledevelopment/es/>), contributing to some extent to their achievement:

Goal 8: Promote Inclusive and Sustainable Economic Growth, Employment and Decent Work for All.

Objective 8.1 Maintain Per Capita Economic Growth in Accordance with National Circumstances and, in Particular, Gross Domestic Product Growth of at Least 7 % per Annum in the Least Developed Countries.

2. Learning results

- To know the methodologies and quantitative techniques described, as well as their application.
- To be able to interpret the results obtained in the financial markets addressed.
- To design ad hoc modelling in any financial market and apply contrasts to validate the results.

3. Syllabus

- 1) Panel data
- 2) Time series
 - 2.1) Univariate techniques
 - 2.2) Multivariate technique
- 3) Other quantitative methods in finance

4. Academic activities

The subject will include theoretical and practical classes. Given the instrumental nature of the subject its teaching is based on the "learning-by-doing" principle. Thus, in a first stage, the student is provided with the contents and methodologies to be used, as well as the scope of application. At the same time, a practical application case is presented, solved and discussed. In the second stage, the student applies the concepts and methods learned in the solving of one or more cases proposed by the teacher.

- Obtaining and processing information: 15 hours
- Presentation of theoretical contents: 15 hours
- Presentation and solving of practical cases using computer tools: 50 hours
- Realization and presentation of individual work: 20 hours

In principle, the teaching methodology and its assessment is expected to pivot around face-to-face classes. However, if circumstances so require, this can be modified to an online version.

5. Assessment system

In the first call, there are two assessment systems:

a) Continuous assessment, which will consist of individual tests throughout the entire teaching period. These tests will involve solving empirical works proposed by the teacher in which the student must apply each and every one of the methodologies described in the class sessions. Likewise, both the complementary assignments that will be presented in the classroom sessions, and the active participation in them, will be assessed.

The distribution of the value of the different tests is as follows:

- Practical tests: 50%
- Completion of the assignments proposed in the classroom sessions and active participation in them: 50%

In order to pass the subject by this means it will be necessary that the result of the previous weighting is higher than 5 points out

of 10.

b) Global assessment system, by means of an individual exam of theoretical-practical content, to be held on the date and at the time established in the official call. This exam will consist of the solving of an empirical work provided by the teacher on the topics of the subject. In order to pass the subject, the student must obtain a grade of 5 out of 10 in the exam.

In the second call, the assessment will be carried out only by means of a final exam of theoretical-practical content.

It is foreseen that all tests will be carried out in person, but if health circumstances require it, they will be carried out in a blended or online manner. In the case of online assessment, it is important to note that, in any test, the student may be recorded. The student will be able to exercise their rights by the procedure indicated in:

https://protecciondatos.unizar.es/sites/protecciondatos.unizar.es/files/users/lopd/gdocencia_reducida.pdf"

The assessment criteria will be, among others, the precision and clarity in the theoretical definition of the financial terms and concepts, the correct use of technical language referring to the financial information treatment models and other concepts studied in the subject, as well as the correctness in the approach and solving of the practical questions.

6. Sustainable Development Goals

8 - Decent Work and Economic Growth