

27548 - Financial Engineering

Syllabus Information

Academic year: 2023/24

Subject: 27548 - Financial Engineering

Faculty / School: 109 - Facultad de Economía y Empresa

Degree: 449 - Degree in Finance and Accounting

ECTS: 6.0

Year: 4

Semester: Second semester

Subject type: Optional

Module:

1. General information

The main goal of this subject is for the student to learn about derivative markets and the hedging and investment strategies that they allow. Hedging against adverse market prospects and investing trying to use technical knowledge to obtain returns in any market situation (bullish, bearish or trendless) or taking advantage of the passage of time or changes in volatility.

These approaches and goals are aligned with the Sustainable Development Goals (SDGs) of the 2030 Agenda of the United Nations (<https://www.un.org/sustainabledevelopment/es/>), specifically, the activities planned in the subject will contribute to the achievement of the goals:

- - Health and wellness (goal 3)
- - Quality education (goal 4)
- - Gender equality (goal 5)
- - Decent work and economic growth (Goal 8)
- - Reduction of inequalities (goal 10)
- - Responsible production and consumption (goal 12)

2. Learning results

The student, in order to pass this subject, must demonstrate the following results:

1. -To know the functioning of derivative financial instruments that will allow him/her to articulate risk hedging strategies in variable income portfolios as well as speculation in these markets.
2. -Evaluate changes in the value of option premiums as a function of changes in the variables that influence that value
3. -Knowing how to operate with different financial instruments with the objective of forming investment strategies according to each market situation.
4. -Knowing how to control the risk corresponding to each position in accordance with the price variations that may occur in the elements of the position.
5. -Know the different strategies (structured products and "reverse" strategies) that financial intermediaries can offer us and that are composed of these advanced financial instruments.

3. Syllabus

1. HEDGING RISK IN EQUITY INVESTMENTS

- Hedging through futures and options on equity investments
- Hedging through futures and options on indexed portfolios. Coverage ratio.

2. SENSITIVITY OF OPTION PREMIUMS

- Importance of the chosen strike
- Sensitivity to changes in the price of the underlying asset
- Sensitivity to changes in volatility
- Sensitivity to the passage of time
- Other elements to consider

3. INVESTMENTS COMBINED WITH OPTIONS

4. SENSITIVITY OF COMBINED POSITIONS

5. STRUCTURED PRODUCTS AND REVERSE STRUCTURES

4. Academic activities

Master classes: 30 hours
Practical classes: 30 hours
Personal Study: 88 hours
Assessment tests. 2 hours
6 ECTS = 150 hours

In principle, the teaching methodology and its evaluation is planned to be based on face-to-face classes . However, if circumstances so require, they may be carried out online.

5. Assessment system

The subject will be evaluated by means of continuous and global evaluation in the first call and by means of global evaluation in the second call.

Continuous assessment:

- 2 written tests of a theoretical and/or practical nature, whose objective is to apply the knowledge acquired through open questions. The first (30%) will consist of modules 1 and 2 and the second (45%) will consist of the entire syllabus.
- Between 8 and 10 cases to be solved individually or in work groups, which will be developed by mainly in face-to-face practical sessions. They will represent 25% of the grade and it is necessary that the student performs at least 80% of the cases presented.

Global Assessment:

It will consist of a written test that will account for 100% of the grade. It will consist of theoretical and practical questions of the type open.

The mark for the **first call** will be the higher of the continuous assessment mark and the overall assessment mark The mark for the **second call** will be the overall assessment mark

Assessment Criteria:

Both in the different continuous assessment tests and in the overall test, the student must demonstrate an appropriate application of the techniques required for the resolution of the problems posed, as well as an appropriate application and relation of the theoretical knowledge of the subject implemented in practical questions.

In the individual and/or group work that forms part of the continuous assessment, the following will be assessed: the correct use of terminology, the absence of technical and calculation errors, the originality of the proposals and the appropriate written and oral expression, where appropriate.