

Academic Year: (2024 / 2025)

Review date: 22-04-2024

Department assigned to the subject: Business Administration Department

Coordinating teacher: BALBAS DE LA CORTE, ALEJANDRO

Type: Electives ECTS Credits : 6.0

Year : 4 Semester :

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

Introductory course about Financial Derivatives

OBJECTIVES

The course will provide the students with knowledge about advanced topics in derivative markets, with special focus on dynamic pricing models.

At the end of this course the student must be able to:

- Price and hedge equity derivatives in a dynamic framework.
- Distinguish between complete and incomplete dynamic models

- Deal with dynamic interest rate models.
- Price and hedge interest rate and currency derivatives.
- Price and hedge credit derivatives.

DESCRIPTION OF CONTENTS: PROGRAMME

FIRST PART: Binomial model, Black and Scholes model, volatility smile, Greeks.

SECOND PART: Interest rate models, interest rate derivatives.

THIRD PART: Credit risk models, commodities.

LEARNING ACTIVITIES AND METHODOLOGY

Methodology will include:

- (1) Lectures, in order to present the main ideas of every topic.
- (2) The use of the computer.
- (3) Numerical exercises.
- (4) More complicated practical situations that will be analyzed by teams of three/four students.
- (5) In this course students can use Artificial Intelligence tools without any kind of restriction. However, it is reminded that no access to any type of computer will be available during the exams.

ASSESSMENT SYSTEM

% end-of-term-examination:	60
% of continuous assessment (assignments, laboratory, practicals...):	40

- The weight of several sets of exercises, to be solved at home, will be 20%.
- Projects developed by teams of three/four students will have the weight 20%.
- The weight of the final exam will be 60%.
- In order to pass the course, students must obtain at least 4 points out of 10 in the final exam.

BASIC BIBLIOGRAPHY

- Hull, J. Options, Futures and other Derivatives, Pearson, 2008

