

Academic Year: (2023 / 2024)

Review date: 24-04-2023

Department assigned to the subject: Business Administration Department

Coordinating teacher: BALBAS DE LA CORTE, ALEJANDRO

Type: Compulsory ECTS Credits : 6.0

Year : 1 Semester : 2

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

An introduction to Financial Economics
 An introduction to Mathematical Analysis
 An introduction to Probability Theory

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 commodity derivatives.

DESCRIPTION OF CONTENTS: PROGRAMME

FIRST PART: Futures and options. Buy and hold approaches.

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

THIRD PART: Interest rate models, interest rate derivatives.

FOURTH PART: 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.

Regarding the course 2020/2021, the teaching methodology will be double: online and onsite, conditional to the evolution of public health circumstances.

ASSESSMENT SYSTEM

- The weight of several sets of exercises, to be solved at home, will be 20%.
- A project by teams of three/four students will have the weight 20%.
- The weight of the final exam will be 60%.

% end-of-term-examination: 60

% of continuous assessment (assignments, laboratory, practicals...): 40

BASIC BIBLIOGRAPHY

- Hull, J.C. Options, Futures and other Derivatives 8th. edition, Pearson Prentice-Hall International, Inc , 2012

ADDITIONAL BIBLIOGRAPHY

- Hull, J.C Fundamentals of Futures and Options Markets, 7th. edition, Pearson Prentice-Hall Internacional, 2010
- Jorion, Ph. Value at Risk, Wiley and Sons, 2005
- Smithson, C., C. Smith, y D.S. Wilford Managing Financial Risk, Irwin, 2005