Year 2011-12

Financial Economics (21133)

Degree/study: IBE
Course: Second
Term: Third
Number of ECTS credits: 5
Hours of student's dedication: 125
Language or languages of instruction: English
Professor: Ander Pérez Orive

1. Presentation of the subject

The aim of this course is to give then student an introduction to the study of capital markets and corresponding asset pricing methods. The main asset pricing principles considered are: i) asset pricing by absence of arbitrage opportunities, and ii) market equilibrium asset pricing.

The first principle is especially useful for pricing derivative instruments (e.g. an option contract) whenever we know (or assume) what the price of the underlying asset (e.g. a stock) is and how it evolves.

In order to price the whole universe of financial assets, however, we need to investigate how investors make their investment decisions (individual optimality) and how the coordination of these investors on the financial markets leads to the formation of prices (equilibrium analysis).

2. Competences to be attained

- Be familiar with financial system in general, and its key role in Economics, focusing on financial markets.
- Understand the main financial instruments.
- Implement lack of arbitrage opportunities techniques in order to price financial assets both under certainty and uncertainty.
- Understand market equilibrium techniques in order to price financial assets under uncertainty.
- Understand Expected Utility theory methods in order to build optimal portfolios (optimal asset allocation).
- Be familiar with mean–variance framework analysis, and its applications for financial risk measurement, risk diversification and the construction of efficient portfolios.

3. Contents

- Financial Economics: Instruments and Markets, Financial Securities: Definitions Bonds/Stocks/Derivatives
- Fixed-income securities and arbitrage: Definitions, bond valuation, Basic Bonds (BB) and Fundamental Asset Pricing Equation
- Term structure of interest rates: Interest rates, Term Structure of Interest Rates, The forward interest rates, Theories on the Term Structure of Interest Rates
- Fundamental Asset Pricing Equation under Uncertainty

- Derivatives valuation: Contract definitions, uses, forward prices and put-call parity, option valuation under binomial model and Black-Scholes model, risk-neutral probabilities.
- Portfolio Selection and prices under Certainty: bonds
- Portfolio Selection and prices under Uncertainty: CARA+ normal
- The Mean-Variance (MV) Framework: Preferences, portfolio risk, Diversification, MV frontier
- Capital Asset Pricing Model (CAPM): market portfolio, Capital Market Line (CML), Beta risk, Security Market Line (SML)

4. Assessment

1. The weights of the exam and practical seminars in the final grade are 70% and 30% respectively, although it will be necessary to obtain a minimum grade of 4 points to pass the course.

2. The seminars include both the resolution of test exercises and practical exercises with the help of a computer.

3. The test exercises will be evaluated on the basis of class participation and in particular of students' ability to solve exercises on the board. This evaluation will represent 20% of the seminars' grade

4. For the case of computer practices, 6 groups of students will be formed. The instructor will evaluate whether and how students have solved the proposed problems, as long as these solutions are presented in print. The instructor will also evaluate the involvement of students in solving exercises in the classroom. To this end, each group should bring their class solutions in digital format and be prepared to present the solution. This evaluation will represent 80% of the seminars' grade.

5. The seminars' grades are preserved until September

5. Bibliography and teaching resources

5.1. Basic bibliography

"*Principles of Corporate Finance - Global Edition*" Richard A. Brealey, Stewart C. Myers and Franklin Allen, Publisher: McGraw-Hill Higher Education; 10th edition (Nov 2010)

5.2. Additional bibliography

5.3. Teaching resources

6. Methodology

Theory Lectures: where the theoretical concepts are presented

Seminars: Students should present the solutions to problems based on the concepts introduced in the theory lectures.

7. Activities Planning

WEEK	SESSION Date	THEORY	SEMINAR
1 **10/4 13/04**	1 2	Chapter 1: Financial Economics: Instruments and Markets Chapter 2: Arbitrage and Fixed Income Assets	
2 **16/4 20/4**	3 4	Chapter 2: Arbitrage and Fixed Income Assets	
3 **23/4 27/4**	5 6	Chapter 3: The Term Structure of Interest Rates	
4 **30/4 4/5**	7 8	Chapter 4: The Fundamental Asset Pricing Equation Under Uncertainty	
5 **7/5 11/5**	9	Chapter 5: Derivatives Pricing	1- SEMINAR BLOCK 1 (Past exam exercises for chapters 1-3)
6 **14/5 18/5**	10	Chapter 5: Derivatives Pricing	2- COMPUTER EXERCISE 1 (The Returns to Investing in Bonds and the

			Stock Market)
	11		
7 **21/5** **25/5**	12	Chapter 6: Portfolio Selection and Pricing Under Uncertainty	3- SEMINAR BLOCK 2 (Past exam exercises for chapters 4-5)
8 **28/5** **1/6**	13 14	Chapter 6: Portfolio Selection and Pricing Under Uncertainty Chapter 7: Portfolio Selection in a Mean-Variance Framework	4- COMPUTER EXERCISE 2 (The Term Structure of Interest Rates and Duration)
9 **4/6** **8/6**	15	Chapter 7: Portfolio Selection in a Mean-Variance Framework	5- SEMINAR BLOCK 3 (Past exam exercises for chapters 6-8)
10 **11/6** **15/6**	16	Chapter 8: The Capital Asset Pricing Model (CAPM)	6- COMPUTER EXERCISE 3 (Mean-Variance Frontiers and Portfolio Performance)