Year 2013-14

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

1. Presentation of the subject

The aim of this course is to give the student an introduction to the study of capital markets and 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 85% and 15% respectively.

2. The final exam will consist of multiple choice questions.

3. Students who fail the entire course will have the opportunity to retake the exam in the recovery period according to the regulations of the Faculty.

4. Students participating in mobility programs recognized by the Faculty will have the opportunity to be evaluated by a test according to the regulations of the Faculty.

5. Bibliography and teaching resources

5.1. Basic bibliography

"Economía Financiera", José Marín y Gonzalo Rubio, Editor: Antoni Bosch, Barcelona 2001

5.2. Additional bibliography

Brealey, R.A. y S.C. Myers. Principles of Corporate Finance 9th Edition. McGraw Hill.

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

Chapter 1: Financial Economics: Instruments and Markets

1.1. Introduction and Basic Concepts

1.2. Financial Securities

1.2.1 Bonds

1.2.2 Stocks

1.2.3 Derivatives

1.3. Organization of Financial Markets

References:

Marín and Rubio, Chapters 1,14 and 15.

Chapter 2: Arbitrage and Fixed Income Assets

2.1 Absence of Arbitrage: Basic Concepts and Exmaples

2.2 The Pricing of Fixed Income Assets Ander Arbitrage

2.3 Sequential Arbitrage

References:

Marín and Rubio, Chapter 2

Chapter 3: The Term Structure of Interest Rates

3.1 An Introduction to the Term Structure of Interest Rates

3.2 Interest Rates and the Prices of Bonds

3.3 The Forward Interest Rates

3.4 Theories on the Term Structure of Interest Rates

References:

Marín and Rubio, Chapter 3

Chapter 4: The Fundamental Asset Pricing Equation Under Uncertainty

4.1 Pricing Assets with Uncertain Payoffs: The Fundamental Ideas

4.2 Arrow-Debreu Securities and the Fundamental Asset Pricing Equation

Chapter 5 Derivatives

5.1 Options and Futures: Basic Aspects

5.2 The Pricing of Options

5.3 The Pricing of Futures

References:

Marín and Rubio, Chapter 4.

Chapter 6: Portfolio Selection and Prices Under Uncertainty

6.1 Expected utility amd risk aversion

6.2 Portfolio Selection with Two Assets (a risky asset and a risk-free bond)

6.3 Portfolio Selection with Two Assets: negative exponential utility and normal payoff

References:

Marín and Rubio, Chapter 18 and 19 (pp. 795-804).

Chapter 7: Portfolio Selection in a Mean-Variance Framework

8.1. A Formal Justification of the Mean-Variance Framework

8.2. Risk and Return in Financial Markets

8.3. Volatility in Financial Markets

8.4. The Construction of Efficient Portfolios

References:

Marín and Rubio, Chapter 5 and 6.

Chapter 8: The Capital Asset Pricing Model (CAPM)

9.1. Basic Assumptions
9.2. The Market Portfolio and Beta Risk
9.3. Graphical and Analytical Derivation of the Capital Market Line (CML) a the Security Market Line (SML)
9.4. What is Beta?
9.5. Impact and Uses of the CAPM in Practice

References:

Marín and Rubio, Chapter 7.