Universidad de Navarra

Finance I (MEF)

Teaching guide 2025-26

PRESENTATION

Subject : Finance I: Investment Under Uncertainty Theory

Finance I reviews the theoretical foundations of modern Financial Economics and discusses the empirical implementation of some of its most important models. The main aim of the theoretical contents is to introduce the core principles of asset pricing as well as the alternative representations of the fundamental pricing equation, namely, arbitrage-free valuation, risk-neutral pricing, and the stochastic discount factor. The applied contents focus, among others, on yield-curve fitting, fixed-income valuation, portfolio optimization, performance analysis, and expected return/ firm's cost of capital determination with the CAPM and Fama-French models. This course relies heavily on real data and involves applied mathematical techniques such as numerical optimization, regression analysis, and matrix algebra, all of which can easily be implemented in Excel using advanced add-ins (Solver and Data Analysis) and array functions. An additional goal of this course is to make students familiar with such tools. All course materials (lecture notes and auxiliary files) will be available on ADI. Please do not forget to bring your own laptop to the classroom for applied workshops during the course will require it.

Type of Degree: Master in Economics and Finance

ECTS Credits: 3.5

Type: Compulsory

Language: English

- **Semester**: Fall

RESULTADOS DE APRENDIZAJE (Competencias)

Understanding of financial investment

Portfolio choice modelling

Asset Pricing Theory

Mapping from modelling to reality

BASIC & GENERAL SKILLS

CG1 - Formar especialistas de alto nivel tanto en teoría económica como en finanzas.

CG3 - Familiarizar a los estudiantes con los campos de investigación y con la literatura más relevante en teoría económica y finanzas.

CG5 - Dotar a los estudiantes de los fundamentos teóricos básicos para poder iniciar estudios de doctorado en economía o finanzas.

SPECIFIC SKILLS

CE4 - Manejar los principales programas estadísticos y econométricos utilizados en las áreas de la economía y finanzas.

CE7 - Examinar el concepto de riesgo de mercado, usando modelos para su evaluación.

PROGRAM

Part I: Foundations of Investments and Asset Pricing

1.1 Introduction.

1.2 Review of Statistics.

1.3 Financial returns.

1.4 Expected utility. Risk aversion and risk premium.

1.5 Present value (price) of a risky payoff.

1.6 The term structure of interest rates.

Quiz 1

Part II: Portfolio Choice and Expected Returns

2.1 Introduction.

2.2 Stylized features of stock returns.

2.3 Mean-variance optimal portfolio analysis.

2.4 Cost of equity/expected return: CAPM.

2.5 Beyond CAPM: Fama-French models.

Quiz 2

Part III: Asset Pricing Theory

3.1 Introduction.

3.2 Arbitrage-free pricing.

3.3 Risk-neutral pricing.

3.4 SDF pricing representation.

3.5 Consumption-based SDF.

3.6 SDF as risk factor: beta representation.

Quiz 3

EDUCATIONAL ACTIVITIES

Universidad de Navarra

The lectures will consist of a mix of theoretical presentations and empirical applications where the concepts will be demonstrated using Excel. The problem sets are meant to solidify the concepts learned and will be the basis for the questions asked on the exams.

The distribution of the work will be the following:

1) Classes: 30 hours

2) Problem sets: 30 hours

3) Personal study: 25 hours

4) Exams: 2.5 hours

EVALUATION

Final Exam: 60% (two parts)

Problem Sets 30% (teamwork)

Class Activities 10% (quizzes and discussion of suggested readings)

Total 100 points

For those who achieve a mark of the course less than 5, there will be a second chance to do the final exam.

OFFICE HOURS

Agreed upon via email.

BIBLIOGRAPHY

Asset Pricing and Portfolio Choice Theory by Kerry Back (Oxford University Press), Second edition (2017). Find it in the library.

Financial Modeling by Simon Benninga and Tal Mofkadi (The MIT Press), Fifth Edition (2022). Find it in the library.

Asset Pricing by John Cochrane (Princetown University Press), Revised edition (2005).

Theory of Asset Pricing by George Pennacchi (The Addison-Wesley Series in Finance), First edition (2007).