

# Teaching guide

## IDENTIFICATION DETAILS

Degree:	Business Analytics
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Field of Knowledge:	Social and Legal Science
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Faculty/School:	Legal and Business Science
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Course:	FINANCE
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Type:	Compulsory	ECTS credits:	6
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Year:	3	Code:	5332
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Teaching period:	Sixth semester
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Area:	Management Analytics
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Module:	Disciplinary Training
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Teaching type:	Classroom-based
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Language:	English
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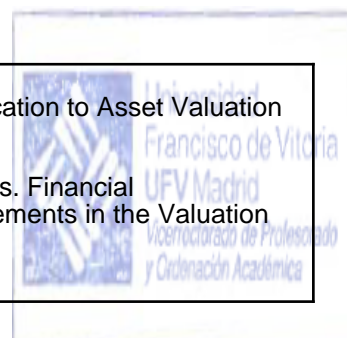
Total number of student study hours:	150
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Teaching staff	E-mail
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## SUBJECT DESCRIPTION

This course sequentially addresses the study of basic Financial Mathematics and its application to Asset Valuation and Portfolio Management as relevant elements in the world of Finance.

One of the main tools necessary to understand and apply Finance is Financial Mathematics. Financial Mathematics helps to value money over time and to measure uncertainty, two essential elements in the Valuation of Financial Assets and Portfolio Management.



## GOAL

The main objective of this course is to link financial theory with practice, providing students with the theoretical concepts and analytical and mathematical tools necessary for Asset Valuation and Portfolio Management.

We will study basic Financial Mathematics and then tackle the study of the fundamentals of modern Finance and its application to Asset Valuation and Portfolio decisions. Students will learn the characteristics of different securities and how to measure the risk and performance of bonds, stocks and investment portfolios. After the course, students will be able to determine risk and return on major financial assets and create portfolios based on desired risk and available funds.

The course takes a thoughtful and critical approach to the subject, with a focus on practical applications.

The specific aims of the subject are:

To understand the basic elements of Financial Mathematics.

To understand financial theories for Asset Valuation and Portfolio Management.

To apply those theories to the valuation of Bonds and Stocks.

To understand Risk diversification.

To learn how to measure the risk and return of an asset portfolio and make investment decisions.

## PRIOR KNOWLEDGE

Maths. Statistics. Financial Accounting

## COURSE SYLLABUS

### TOPIC 1. PORTFOLIO MANAGEMENT.

- 1.1. Risk and Return on Financial Assets. Parametric and Historical Simulation. Montecarlo.
- 1.2. Risk and Return of Portfolios. Diversification.
- 1.3. Markowitz. Capital Market Line (CML).
- 1.4. Systematic and Specific Risks
- 1.5. The Capital Asset Pricing Model (CAPM). SML. Betas
- 1.6. Performance Evaluation

### TOPIC 2. VALUE OF MONEY OVER TIME

- 2.1. Simple interest / compound interest
- 2.2. Nominal interest rate / effective interest rate
- 2.3. Inflation and interest rates
- 2.4. Future value / present value / discount rate
- 2.5. Cash flows / rents: annuities / perpetuities/ post-payable / pre-payable / mid-year cash flows
- 2.6. Bonds. Bond Valuations. Accrued Interest. Term structure of interest rates
- 2.7. Loans Repayment Methods.

### TOPIC 3. INVESTMENT DECISIONS

- 3.1. Investment Decision Criteria
- 3.2. Estimating Free Cash Flows
- 3.3. Operating and Financial Leverage
- 3.4. The Cost of capital

### TOPIC 4. FUNDING DECISIONS



- 4.1. Internal Growth. Dividend Policy.
- 4.2. Funding with Equities. Subscription Rights valuation. Stock Valuation.
- 4.3. Funding with Debt. Interest Tax Shield.
- 4.4. Valuation: APV vs WACC vs EDCF Valuation Methods

## EDUCATION ACTIVITIES

The course activities, as well as the distribution of work times, can be modified and adapted according to the different scenarios established following the instructions of the health authorities.

In any case, the development of the course will be carried out considering the following activities, which may be taking place in the classroom or online depending on the circumstances:

### PARTICIPATORY LECTURES

Unlike the classical lecture, in which the weight of teaching falls exclusively on the teacher, in the participatory lecture we seek an active participation from the student. In order to obtain such result, the teacher will explain the basic concepts of the course in a structured way, allowing the student to understand these concepts and to interact asking questions.

Questionnaires can be included through Canvas, to encourage student participation and their self-evaluation.

### FLIPPED LEARNING:

Methodology that moves part of the instruction out of the classroom to increase the classroom time for activities of a higher cognitive learning. It involves previous independent study by the student to allow him to participate in the classroom activity. It can be integrated with other methodologies.

### PROBLEM-BASED LEARNING:

Methodology focused on learning, research, and reflection that students follow to reach a solution to a problem raised by the teacher. Problem-based learning is presented as a means for students to be the protagonists and acquire the knowledge and apply it to solve a real or fictitious problem.

### COOPERATIVE LEARNING:

Methodology that can be integrated with many other that promotes the development of interpersonal, social and teamwork skills that are decisive for the student's professional and personal success. Cooperative learning is much more than teamwork since it is also applicable to a lecture. This methodology improves student autonomy and favors deep learning. In this subject, students will be able to collaborate in the resolution of the problems that are presented to them, in person or through Canvas, using forums or videoconference rooms.

### TUTORIALS:

It consists of individual attention to the student with the aim of reviewing and debating the topics presented in class and clarifying any doubts that have arisen. The student is also oriented on all the elements that make up the learning process.

### NOT PRESENTIAL ACTIVITIES - THEORETICAL AND PRACTICAL STUDY:

Study of the theoretical and practical contents of the program, which allow the student to carry out all the course activities previously mentioned and pass the final exam.

In the content acquisition assessment tests (exams), the ability to learn independently can be assessed.

## DISTRIBUTION OF WORK TIME

CLASSROOM-BASED ACTIVITY	INDEPENDENT STUDY/OUT-OF-CLASSROOM ACTIVITY
60 hours	90 hours

## SKILLS

### Basic Skills



Students must have demonstrated knowledge and understanding in an area of study that is founded on general secondary education. Moreover, the area of study is typically at a level that includes certain aspects implying knowledge at the forefront of its field of study, albeit supported by advanced textbooks

Students must be able to apply their knowledge to their work or vocation in a professional manner and possess skills that can typically be demonstrated by coming up with and sustaining arguments and solving problems within their field of study

Students must have the ability to gather and interpret relevant data (usually within their field of study) in order to make judgments that include reflections on pertinent social, scientific or ethical issues

Students must be able to convey information, ideas, problems and solutions to both an expert and non-expert audience

Students must have developed the learning skills needed to undertake further study with a high degree of independence

## General Skills

Skills for promoting intellectual curiosity and the search for truth in all areas of life, and in particular in the context of handling mass data.

Capacity for communicating in a native or foreign language in the information society.

Capacity for critical, self-critical, analytical and reflexive thought.

Capacity for autonomous learning in the information society.

## Specific skills

Know and understand the basic principles of business analytics and its essential concepts and tools, geared towards identifying and assessing opportunities in all the functional areas of the business: general and strategic management, human resources, finance, marketing, production and operations.

Know how to manage quantitative and computer tools for decision-making.

Known and understand the finances (financial maths, financial analysis and financial management) in the context of national and international mass data.

## LEARNING RESULTS

Understand the value of financial mathematics in business decisions and the financial concepts associated with the time value of money and the value of capital flows in different periods of time; use appropriately the financial language to describe different business situations.

Evaluates financial investments in an environment of uncertainty and the performance of investments in securities portfolios

Understands the operation of the main fixed and variable income instruments

Values stocks and bonds

Diversify financial risk

Calculate the cost of the company's financial resources

## LEARNING APPRAISAL SYSTEM



### FIRST REGISTRATION STUDENTS

-Participation and assignments: 40%

Assignments could include resolution of problems using and Excel sheet, short exercises, participation in debates and forums, as well as midterm exams.

-Final exam: 60%. In order to pass the course and make the above average, the minimum grade required in the final exam is 4 over 10.

Class attendance is compulsory and it is necessary to attend 80% of classes. Otherwise, the final grade will depend exclusively on the final exam, which is only 60% of the final grade of the course, which makes very difficult to pass the course.

### ALTERNATIVE ASSESSMENT SYSTEM FOR STUDENTS WITH ACADEMIC WAIVER

-Assignments: 30%. The student should contact the teacher, who will propose him/her the assignments.

-Final exam: 70%. In order to pass the course and make the above average, the minimum grade required in the final exam is 4 over 10.

Class attendance is not compulsory in this case.

THE ASSESSMENT SYSTEM DOES NOT CHANGE, EVEN IF ALL THE COURSE ACTIVITIES HAVE TO BE CARRIED OUT ONLINE DUE TO THE SANITARY SITUATION.

THE EXAMS WILL TAKE PLACE AT THE UNIVERSITY IF THE SANITARY SITUATION ALLOWS IT. OTHERWISE, THE EXAMS WILL TAKE PLACE ONLINE TO COMPLY WITH THE INDICATIONS GIVEN BY THE SANITARY AUTHORITIES. THE EXAM MAY HAVE ANY FORMAT (WRITTEN, ORAL, ETC).

THE ASSESSMENT SYSTEM IS ALWAYS THE SAME, INDEPENDENTLY OF THE EXAMINATION SESSION.

STUDENTS IN SECOND REGISTRATION COULD CHOOSE BETWEEN ANY OF THE TWO ASSESSMENT SYSTEMS, NOTIFYING THEIR OPTION TO THE TEACHER AT THE BEGINNING OF THE SEMESTER. IN THIS CASE IT IS NOT NECESSARY TO REQUEST AN ACADEMIC WAIVER.

UFV STUDENTS IN AN INTERNATIONAL STAY WILL BE ASSESS USING THE ALTERNATIVE ASSESSMENT SYSTEM, BEING THEIR RESPONSIBILITY TO KNOW IT.

THE TEACHER KEEPS THE FACULTY TO ASK STUDENTS ORALLY ABOUT ANY OF THE EVALUATION ACTIVITIES (EXAMS AND ASSIGNMENTS) IN CASE OF SUSPECTED FRAUD. IF THE STUDENT DOES NOT ANSWER PROPERLY, HE OR SHE WILL NOT PASS THE COURSE, WITHOUT PREJUDICE TO WHAT IS ESTABLISHED IN THE UNIVERSITY CODE OF COEXISTENCE IN CASE OF FRAUD.

CONDUCTS THAT DEFRAUD THE ACADEMIC PERFORMANCE VERIFICATION SYSTEM, SUCH AS PLAGIARISM OF WORK OR COPYING IN EXAMS, ARE CONSIDERED SERIOUS OFFENSES ACCORDING TO ARTICLE 7 OF THE UFV COEXISTENCE REGULATIONS AND THE APPROPRIATE SANCTIONS WILL BE APPLIED AS STATED IN ARTICLE 9 OF THE SAME DOCUMENT.

THE ASSESSMENT SYSTEM IS SUBJECT TO THE ESTABLISHED ASSESSMENT REGULATION.

## BIBLIOGRAPHY AND OTHER RESOURCES

### Basic

BREALEY, MYERS, ALLEN: "Principles of Corporate Finance". McGraw-Hill (Last edition available)

HOLTHAUSEN AND ZMIJEWSK: "Corporate Valuation Theory, Evidence and Practice"

### Additional

ROSS, WESTERFIELD, JAFFE: "Corporate Finance". McGraw Hill (Last edition available)

SUÁREZ SUÁREZ, A.S.: "Decisiones óptimas de inversión y financiación". Ed. Pirámide (Last edition available)



CABALLERO, J.M.: "Valoración financiera: teoría y práctica con Excel". Ed.Delta. 2006.

GARCÍA GUTIÉRREZ-FERNÁNDEZ, C., MASCAREÑAS PÉREZ-IÑIGO, J., PÉREZ GOROSTEGUI, E.: "Casos prácticos de inversión y financiación en la empresa". Ed. Pirámide. Madrid. 1992.

JIMÉNEZ CABALLERO, J.L., PÉREZ LÓPEZ, C. DE LA TORRE GALLEGOS, A.: "Gestión financiera de la empresa". Ed. Pirámide. Madrid. 2003.

PÉREZ GOROSTEGUI, E.: "Economía de la empresa aplicada". Ed. Pirámide. Madrid. 1992.

