

Teaching guide

IDENTIFICATION DETAILS

Degree:	Business Administration and Management		
Field of Knowledge:	Social and Legal Science		
Faculty/School:	Legal and Business Science		
Course:	THE VALUE OF MONEY OVER TIME		
Type:	Compulsory	ECTS credits:	6
Year:	2	Code:	7123
Teaching period:	Third semester		
Area:	Finance		
Module:	Functional administration of business areas		
Teaching type:	Classroom-based		
Language:	English		
Total number of student study hours:	150		

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SUBJECT DESCRIPTION

The so called Time Value of Money is a basic financial mathematics. Main issues discussed are: cash flows and income, simple and compound interests, investment appraisal tools such as NPV or IRR, amortization of loans and investment strategies.

The main objective of this course is to ensure that students acquire the knowledge and precise techniques for the study of the principles and methodology of basic financial mathematics in environments of risk and uncertainty. It

is the basis of finance and the foundation for other courses, such as financial management or asset valuation.

In business administration, both qualitative and quantitative analyses can be carried out. We are interested in quantitative analyses, which have the advantage of being precise and not ambiguous, although they are not adapted to all kind of situations and require certain characteristics, as quantifiable magnitudes, in order to express relations in mathematical terms.

The application of mathematics to economics and business means a change (for some even a revolution) in the way to tackle the problems of this science.

Mathematical competence is the ability of an individual to identify and understand the role that mathematics plays in the world, make informed judgments and to use and engage with mathematics in those moments when needs for individual life as a constructive citizen presented, committed and thoughtful.

The aim is that students act as informed citizens, thoughtful and intelligent consumers. In addition, through the techniques learnt, students can develop an entrepreneurial spirit oriented towards productive and efficient investments.

Financial mathematics are not confined just to the technical aspects of business, but committed to the values of fairness, objectivity and rigor. They also develop creativity, ingenuity and beauty.

GOAL

The main objective of the course is to help the student to apply financial mathematics in day-to-day business decisions.

PRIOR KNOWLEDGE

General mathematics and basic accounting.

COURSE SYLLABUS

TOPIC 1. INTRODUCTION

- The concept of cash flow.
- Income vs. financing.
- Financial assets vs. tangible assets.

TOPIC 2. INTEREST RATES. CAPITALIZATION. DISCOUNT. ANNUITIES.

- Interest rates-
- Simple, compound and continuous interest rates.
- Capitalization.
- Discount.
- The annual equivalent rate (AER).
- Annuities and perpetuities.

TOPIC 3. THE NET PRESENT VALUE (NPV)

- Concept of NPV.
- Application of NPV to investments.
- The effect of taxes and inflation.

TOPIC 4. THE INTERNAL RATE OF RETURN (IRR)

- The internal rate of return (IRR).
- Investments under capital constraints.

- The Fisher Intersection.
- The modified IRR (MIRR).

TOPIC 5. OTHER INVESTMENT VALUATION TECHNIQUES

- The payback rule.
- The profitability index.
- Investment under uncertainty. Decision trees.

TOPIC 6. THE COST OF FINANCING. LOAN REPAYMENT METHODS

- Loans and credits.
- The French amortization system.
- Other amortization systems: sinking fund, American and German systems, etc.

TOPIC 7. FINANCIAL VALUATION OF INVESTMENTS

- The concept of cash flow.
- NPV, IRR and cash flows.
- Introduction to bonds and fixed income assets: price and yield of bonds. Effect of inflation and taxes.

EDUCATION ACTIVITIES

The course will be developed through the following activities:

CLASSROOM-BASED ACTIVITY

Lectures:

Lectures in classroom will develop the theory of the course. Professor synoptically will present the topics through lectures and the student must prepare notes on grounds relating to the subject content and activity of personal work performed. In some theoretical issues the active and participatory model student exposure is used: the main ideas related to the subject and the student after his personal work collectively expose their ideas and applications are explained. Students involved in the class by using exploratory questions.

Solving exercises:

The teacher proposes practical exercises individually or group. This model offers the possibility to influence the most important of each theme, master exposure time and present a specific way of working and studying the subject.

Team work:

Teams working on certain problems with subsequent exposure in tutorials, defending the work in front of the teacher. To learn with other learning activities are carried out with other bandmates, such as writing a research paper, negotiating alternatives to a word problem ...

Seminars:

The seminars are classroom practical classes. These classes are conducted in a small group, the class will be divided into groups of four or five people, giving each group a number of problems that must be resolved with notes in hand during the course of the session and delivered at the end of it.

Problem-based learning:

Present the problem with real applications, identify learning needs, seek the necessary information and finally back looking for the solution to the problem.

Tutorials:

Consists of individual attention to the student with the aim to review and discuss the topics in class and to clarify the doubts that have arisen. It also focuses the student on all the elements that make up the learning process. The tutoring hours will be specified by the teacher at the beginning of the semester or it will be agreed that the student requests tutoring to the teacher through e-mail.

OUT OF CLASSROOM ACTIVITY

Theoretical study:

Study of the theoretical contents of the course, in such a way that the student activity focuses on research and location.

Practical study:

Resolution of practical assumptions, in a way that student activity focuses on the analysis, processing and return of information.

Virtual work in network:

Site designed by the teacher where the student can work together with other colleagues, participate in forums organized by the teacher and maintain virtual tutorials. The "Aula Virtual" will be used as a basic tool.

In the evaluation tests of acquisition of content (exams), the ability of autonomous learning will be evaluated.

DISTRIBUTION OF WORK TIME

CLASSROOM-BASED ACTIVITY	INDEPENDENT STUDY/OUT-OF-CLASSROOM ACTIVITY
60 hours	90 hours
Lectures 30h Practical classroom activity (including all the possible activities detailed in this guide) 30h	Theoretical study 30h Practical study 50h Virtual work in network 10h

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

Ability to carry out synthetic and analytical thought.

To have developed the necessary skills to ensure problems are solved and goals are reached.

To develop oral and written communication skills in a native and foreign language.

To be able to apply relevant IT knowledge to the field of study.

Specific skills

To be able to approach a subject by means of rigorous, profound and comprehensive thought.

To develop criteria for problem-solving and decision-making both professionally and personally.

To identify and understand the technical vocabulary related to various disciplines.

To be able to effectively use those tools needed for giving presentations.

LEARNING RESULTS

Understand the value of financial mathematics in business decisions.

Use appropriately the financial language to describe different business situations.

Understand the financial concepts associated with the time value of money and the value of capital flows in different periods of time.

Understand the importance of managing business concepts appropriately.

Select and analyse the applicable financial information to each business situation.

Analyse and synthesize different financial issues.

LEARNING APPRAISAL SYSTEM

FIRST REGISTRATION STUDENTS

- Active attendance and participation: 15%
- Assignments: 20%
- Final exam: 65%. In order to pass the course and make the above average, the minimum grade required in the final exam is 4 over 10.

Assignments may include midterm exams.

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 65% of the final grade of the course, which makes very difficult to pass the course.

ALTERNATIVE ASSESSMENT SYSTEM FOR STUDENTS WITH ACADEMIC WAIVER

Same system, but 15% of " Active attendance and participation " will be replaced by some other activity entrusted by the teacher.

Class attendance is not compulsory in this case.

The student must attend midterm exams. If the student cannot attend a midterm exam, an alternative assessment can be agreed with the teacher.

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 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)

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)

Additional

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.