Universidad Francisco de Vitoria UFV Madrid

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 INVESTEMENT 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 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 through videos or texts 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
Participatory lectures 30h Practical classroom activity (including all the possible activities detailed in this guide) 30h	Theoretical study 30h Practical study and activities preparation 60h

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 flowsin 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

ORNINARY ASSESSMENT 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%. 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 OR SECOND REGISTRATION STUDENTS (RETAKING)

- Assignments: 30%. The student should contact the teacher, who will propose him the assignments
- Final exam: 70%. 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.

TO PASS THE COURSE A 5 OVER 10 IS NEEDED, INDEPENDENTLY OF THE ASSESSMENT METHOD.

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, ...)

The assessment system is always the same, independently of the examination session.

PLAGIARISIM AND THE USE OF ILLEGITIM MEANS DURING THE EXAMS AND OTHER ASSESSTMENT ACTIVITIES WILL BE PUNISH IN ACCORDANCE WITH WHAT IS SET IN THE ASSESSMENT REGULATION AND IN THE UNIVERSITY CODE OF COEXISTENCE.

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.

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

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

BREALEY, MYERS, ALLEN: "Principles of 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.