Teaching guide

IDENTIFICATION DETAILS

Degree:	Business Administration and Management
Field of Knowledge:	Social and Legal Sciences
Faculty/School:	Law, Business and Government
Course:	THE VALUE OF MONEY OVER TIME
Type:	Compulsory
ECTS credits:	6
Year:	2
Code:	7123
Teaching period:	Third semester
Subject:	Financials
Module:	Functional Management of Business Areas
Teaching type:	Classroom-based
Language:	Inglés
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 are discussed: 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 the 'Time Value of Money' integrated into the degree of Business Administration, 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 kinds of situations and require certain characteristics, as quantifiable quantities, 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 use and engage with mathematics in those moments when it 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 learned, students can develop an entrepreneurial spirit oriented towards productive and efficient investments.
Financial mathematics is not confined just to the technical aspects of business but is 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 development of the course will be carried out considering the following activities:

PARTICIPATORY LECTURES

Unlike the classical lecture, in which the weight of teaching falls exclusively on the teacher, in the participatory lecture we seek active participation from the student. In order to obtain such a 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 by asking questions Questionnaires can be included through Canvas, to encourage student participation and their self-evaluation.

FLIPPED LEARNING

A methodology that moves part of the instruction out of the classroom through videos or texts to increase the classroom time for activities of 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

The 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

A methodology that can be integrated with many others 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 allows the student to carry out all the previously mentioned course activities and pass the final exam. In the content acquisition assessment tests (exams), the ability to learn independently can be assessed.

DISTRIBUTION OF WORK TIME

TEACHER-LED TRAINING ACTIVITIES	INDIVIDUAL WORK
60 Horas	90 Horas
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

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.

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

Develop habits of rigorous thinking.

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

Identify the technical vocabulary related to the different disciplines.

Know how to effectively use computer tools for making presentations.

LEARNING RESULTS

Understand the value of financial mathematics in business decisions.

Use the financial language appropriately 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 analyze the applicable financial information to each business situation.

Analyze and synthesize different financial issues

LEARNING APPRAISAL SYSTEM

ORDINARY EVALUATION SYSTEM - STUDENTS IN FIRST ENROLLMENT - Class participation: 5% - Work completion: 25% The work may include problems to be solved with a spreadsheet, short exercises, questionnaires, participation in debates or forums and cross-cutting projects. Individual or group work will be carried out within the period established in the ordinary course call, and the deadlines and dates set must be met. - Intermediate Exam: 20% - Final Exam: 50%. The parameters of continuous evaluation will apply to both ordinary and extraordinary calls according to the academic calendar published on the web. This involves the parameters of active participation in class, intermediate evaluation tests and teamwork, for which the grade obtained in the ordinary course will be maintained for the extraordinary call. However, in the extraordinary call, additional practical cases may be proposed to recover the percentage corresponding to the exercise resolution parameter. Class attendance is mandatory and to average these percentages it is necessary to attend 80% of the classes. Otherwise, the final grade will depend exclusively on the final exam, which makes it very difficult to pass the subject. ALTERNATIVE EVALUATION SYSTEM - STUDENTS WITH EXEMPTION FROM ATTENDANCE PRIOR TO CAREER AUTHORIZATION AND IN SECOND OR SUBSEQUENT ENROLLMENT (REPEATERS) - Work carried out: 40% during the academic year. The student must contact the teacher, who will commission the corresponding works and/or cases, always during the regular call period. - Final exam: 60%. To average in this case, class attendance is not necessary. THE SUBJECT WILL BE APPROVED WHENEVER, REGARDLESS OF THE EVALUATION METHOD USED, A SCORE EQUAL TO OR GREATER THAN 5 OUT OF 10 IS ACHIEVED IN THE FINAL EXAM. The evaluation system is identical in all calls. That is, the weight of the exam is the same in both ordinary and extraordinary calls. Plagiarism, as well as the use of illegitimate means in evaluation tests, will be sanctioned in accordance with the provisions of the Evaluation Regulations and the University's Coexistence Regulations. The teacher reserves the right to ask the student orally about any of the evaluation tests (exams and papers) in case of suspected fraud. If the student does not respond satisfactorily to the questions asked, the teacher may suspend him, without prejudice to the provisions of the University's Coexistence Regulations in case of fraud. Students in second and subsequent enrollment may choose between either of the two previous systems, with prior notice to the teacher at the beginning of the semester. In your case, it is not necessary to request a waiver of assistance. UFV students on an exchange stay will take advantage of the alternative evaluation system, and it is their responsibility to know it. All tests susceptible to evaluation will be subject to the provisions of the UFV Evaluation Regulations.

ETHICAL AND RESPONSIBLE USE OF ARTIFICIAL INTELLIGENCE

1.- The use of any Artificial Intelligence (AI) system or service shall be determined by the lecturer, and may only be used in the manner and under the conditions indicated by them. In all cases, its use must comply with the following principles:
a) The use of AI systems or services must be accompanied by critical reflection on the part of the student regarding their impact and/or limitations in the development of the assigned task or project.
b) The selection of AI systems or services must be justified, explaining their advantages over other tools or methods of obtaining information. The chosen model and the version of AI used must be described in as much detail as possible.
c) The student must appropriately cite the use of AI systems or services, specifying the parts of the work where they were used and describing the creative process followed. The use of citation formats and usage examples may be consulted on the Library website(https://www.ufv.es/gestion-de-la-informacion_biblioteca/).
d) The results obtained through AI systems or services must always be verified. As the author, the student is responsible for their work and for the legitimacy of the sources used.
2.- In all cases, the use of AI systems or services must always respect the principles of responsible and ethical use upheld by the university, as outlined in the Guide for the Responsible Use of Artificial Intelligence in Studies at UFV. Additionally, the lecturer may request other types of individual commitments from the student when deemed

necessary.
3.- Without prejudice to the above, in cases of doubt regarding the ethical and responsible use of any AI system or service, the lecturer may require an oral presentation of any assignment or partial submission. This oral evaluation shall take precedence over any other form of assessment outlined in the Teaching Guide. In this oral defense, the student must demonstrate knowledge of the subject, justify their decisions, and explain the development of their work.

BIBLIOGRAPHY AND OTHER RESOURCES

Basic

ROSS, Stephen A. Corporate finance/10th ed. Chicago [etc.] :McGraw-Hill, 2013.

Brealey, Richard A. (1936-) Principles of corporate finance/13th ed. New York: McGraw-Hill, 2020.