COURSE SYLLABUS

1. COURSE DESCRIPTION

Degree:	**Administración y Dirección de Empresas** **(English teaching)**
Double Degree:	**Derecho y Administración y Dirección de Empresas** **(English teaching)**
Course:	**FINANCIAL MATHEMATICS** **(Matemática Financiera - English teaching)**
Module:	**Accounting and Finance**
Department:	**Economics, Quantitative Methods and Economic History**
Term:	**First term**
Total Credits:	**6**
Year:	**2ⁿᵈ**
Type of Course:	**Obligatory**
Course Language:	**English**

Teaching model:	**C1**	
a. **General/background:**		**50%**
b. **Theory-into-practice/developmental** **knowledge-building**		**50%**
c. **Guided Academic Activities:**		

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2. COURSE COORDINATOR

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Course coordinator PATRICIA HERRANZ PEINADO

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3. ACADEMIC CONTEXT

3.1. Course Description and Objectives

The objective of this subject is to provide students with the knowledge and skills necessary to succeed in the world of banking and finance. This also involves using the most appropriated IT programmes for problem-solving.

The essential objective is to study the main financial operations like capitalization, bank discount, instalment credit, repayment of loans and the mathematical equations which are involved. Using the financial models studied, students will solve equations and suggest additional ways of solving them which could be useful in the financial market. As well as the general course objectives, there are several additional aims for each thematic unit.

3.2. Contribution to the Training Plan

This subject is worth 6 credits and is part of the module "Accounting and Finance". It is studied in the first semester of the second year of the Degrre in Business Administration and Management, and of the Double Degree in Law, and Business Administration and Management.

As well as the knowledge and skills which will be obtained through completion of the course, the main and most important aspect is to gain a logical and critical way of thinking which can later be applied to many fields.

3.3. Recommendations or Prerequisites

Basic mathematical knowledge is necessary in order to take part in this course.

The content of this course is required to accomplish capital appraisals, which is extremely important for any future professional specialised in finance but also for those who wish to take exams in order to enter Public Administration or financial bodies. In these cases this subject is usually compulsory.

4. SKILLS

4.1 Degree Skills Developed during this Course
GENERAL SKILLS:
- The students have the ability to collect and interpret relevant financial data to make judgments that include reflection on relevant social, scientific or ethical items;
- The students can communicate information, ideas, problems and solutions to expert and non-expert people.

SPECIFIC SKILLS: Students should be able:
- To manage the financial variables to achieve the desired objectives.
- To understand the role and functioning of financial reporting of the business, finance transactions, to identify sources of relevant financial information and content.
- To know the basic mathematical and statistical techniques applied to area economic and business reality and to analyze quantitatively economic reality and to interrelate the knowledge acquired in various fields of degree in the field of mathematical, statistical and economic theory.
- To work as the financial management of enterprises. To select investment projects and funding sources, to make financial transactions at enterprise level, to interpret financial information and Stock Exchange.

4.2. Module Skills Developed during this Course

- To have a thorough knowledge of financial language and terminology
- To understand financial transactions which take place in business environments
- Acquisition of abilities to develop and to design instruments, tools and basic financial techniques
- Acquisition of abilities to interpret and analysis financial information

4.3. Course-specific Skills
-Knowledge:
- To understand financial transactions which take place in business environments, as well as the design and analysis of easy investment and financing strategies.
- To know the main operations in the field of finance
- To know and understand the social consequences of financial actions.
Instrumental:
- Reading and interpretation of financial texts.
- Analysis and synthesis skills.
- Organization and planning skills.
- Oral and written skills in a foreign language (for the Degree taught in English).

- Problem-solving skills.
- IT skills (Excel).
- Decision-making skills.
Personal:
- Critical thinking.
- Interest in quality and financial ethics

5. COURSE CONTENT (COURSE TOPICS)

UNIT 1: SIMPLE INTEREST AND SIMPLE DISCOUNT FOR FINANCIAL TRANSACTIONS
1. Financial capital, Financial laws.
2. Simple interest. Applications.
3. Simple discount. Comparing simple interest and simple discount. Bill of exchange discount.
4. Capital equivalency. Applications.
5. Computer processing by spreadsheet.

UNIT 2: COMPOUND INTEREST AND COMPOUND DISCOUNT FOR FINANCIAL TRANSACTIONS
1. Compound interest. Calculations with different types of time.
2. Nominal rate. Interest rate equivalency.
3. Effective rates of interest. Applications.
4. Compund discount.
 5. Computer processing by spreadsheet.

UNIT 3: ANNUITIES
1. Concept and classification
2. Present and future value of fixed annuities with simple laws
3. Present and future value of some annuities with compound laws: ordinary annuity, annuity due, deferred annuity, forborne annuity and perpetuity:
a) Fixed annuities
b) Variable annuities
5. Computer processing by spreadsheet.

UNIT 4: AMORTIZATION METHODS OF LOANS REPAYMENT
1. Concept, characteristics and classification.
2. Full amortization.
3. Interest only amortization.
4. Different amortization systems:
a) Fixed annuities
b) Fixed principal repaid
c) Grace period
5. Applications. Mortgage loan. Total and partial cancellation.
6. Financial value, usufruct and remainder estate of a loan.
7. Effective rates of interest.
8. Computer processing by spreadsheet.

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UNIT 5: AMORTIZATION METHODS OF OTHER LOANS
1. Main concepts
2. Normal or Pure Loans: classification and main operations
3. Commercial characteristics: Loan Standardization
4. Effective rates of interest

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6. METHODOLOGY AND RESOURCES

This subjecto is given 50% in General Teaching (GT) and 50% in Practical Teaching (PT).
In GT, for the group of 60 students, fundamental knowledged are presented and problem type are developed. The procedure is a master class with student participation. In them is intented tha students acquire the deductive method, both theoretical and practical aspects.
In PT, for the group of 20 students, pactical cases are developed, individually and collectivalyand to acquirecomputer tolls. The procedure is a interactional model of teaching where the student participates more than the lecturer.
Sources used:
- Materials developed by lecturers.
- Classroom with a minimum capacity of 60 students.
- Classroom with a capacity of 20 students.
- Computer classroom with capacity of 20 places.
- Three classroom mentioned above must have a blackboard, a projector, a screen and a computer with internet connection.
- Software: PowerPoin, Excel, Word.
- WebCT Platform

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7. ASSESSMENT

The skills, knowledge, abilities and skills that students should acquire in the development of the course will be evaluated through a system of continuous assessment, as provided in art. 5 of the Regulations for Student Assessment Grade Pablo de Olavide University. In general, the continuous evaluation will be based on the fulfillment of a series of activities during the teaching period. Each of these activities will have a different weight in the final grade, defined in terms of the complexity that entails, as well as the effort and dedication required by the student to overcome them.

Continuous assessment tests:

Along the course, the fulfillment of a series of continuous assessment activities allows each student obtaining 100% of final grade. The specific tests and the rating assigned are described below:

- Continuous assessment of face-to-face class: conducted by each teacher at EB and/or EPD sessions, as oral questions, written work, multiple choice, etc. Maximum value is 10% of the total mark.
- Three tests about different part of the subject, written and that allow removing those parts.
  Each test contains theoretical and practical questions (development or as a multiple choice test) that the student must resolve properly balanced (at least 40% in each of these).
  Each student will have passed the test (and he can to remove this part of the subject) when he has obtained at least 50% of the total grade of the test, the minimum requirement of the preceding paragraph.
  The first test corresponds to units 1 and 2, the second to unit 3 and third to units 4 and 5.
  The maximum total grade of the three tests represents 70% of the final grade.

- Finally, a computer exam using Excel spreadsheet in the computer room, the student also can eliminate this part. Maximum value is 20% of the total mark.
  The student passes this test if he obtains half of the grade at least.

The dates of the tests are listed in the course schedule.

When the student pass the different tests, the total grade will be:

Grade of continuous assessment of face-to-face class + Grade of three tests about different part of the subject + Grade of computer exam.

It is considered that the student pass the course if the total score is greater than or equal to 5.

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First Call:

Exam of this call will consist of four parts, three of them corresponding to the part of the subject, described in the continuous evaluation, and a computer exam. All have the same structure as the continuous assessment tests.

Each student will examine the parts that he has not been removed during the course, to pass them, he must obtain in each part half of the grade in a balanced way as mentioned above.

Exceptionally, grades of the three continuous assessment tests may be compensated. This compensation is applied only if the student has as average grade (in the three tests) greater or equal of 5.5 (over 10) and always if two of tests are passed and another one with at least 40% of the grade (4 out 10).

The total grade will be:

Grade of continuous assessment of face-to-face class + Grade of three tests about different part of the subject + Grade of computer exam.

It is considered that the student passes the course if the total score is greater than or equal to 5.

Second Call:

This exam has the same structure and conditions as previous call.

In addition, to obtain 100% of the grade, the student has not overcome the "continuous assessment of face-to-face class" may take an additional written test with a maximum mark of 10% of the grade.

Under these conditions will be evaluated students that have refused his grades obtained in the continuous assessment, through express waiver. The waiver must either grade of "continuous assessment of face-to-face class", or/and grade of the sum of the three tests, or/and grade of computer exam. *Such waiver must be communicated in writing to the teachers of the subject, with a minimum period of 10 days before the exam.*

Additional Call (November)

This call consists in two parts:

- A written exam, theoretical and practical questions that must be answered correctly in a balanced way (at least 40% in each of these parts).
  The maximum total grade of this part represents 80% of the final grade

- A computer exam using Excel spreadsheet in the computer room, the student also can eliminate this part. Maximum value is 20% of the total mark.
  The student passes this test if he obtains half of the grade at least.

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The final grade will be the sum of the previous two, always if they have passed the minimum indicated in each part. The student will be passed this course if the final grade is equal to or greater than 5.

For the realization of the different assessment tests and exams along the course, the student will be allowed only the use of those elements or supporting materials that are expressly authorized by the teacher of the subject. The use of mobile phone or any other one which may be used for communication and/or storage and exchange of information, means the student obtains a "failing grade" in the subject, as well as this may lead to further academic sanction.

Students must attend all assessment tests and exams of the course provided with your ID personnel or other official identification document.

8. BIBLIOGRAPHY

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