



## Fundamentals of Finance (2010-2011)

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## General Information

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Course credits: 6 ECTS (European Credit Transfer System)

Undergraduate degree (s): First year of Business Administration, Economics and Double Degree

Semester: First

Type of course (basic, compulsory, optional): Basic

Department: Business

Teaching hours, classroom: To be uploaded in the Schools web page

There are no prerequisites for taking this course.



## Faculty

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Professor: Carmen Aranda ([maranda@unav.es](mailto:maranda@unav.es))

Office: 2880

Office hours: to be set after first week of classes

Teacher Assistants:

Ian Kwan ([ikwan@alumni.unav.es](mailto:ikwan@alumni.unav.es))

Scott Robertson ([srobertson@alumni.unav.es](mailto:srobertson@alumni.unav.es))

TAs office hours: to be set after the first week of classes

## Course objectives

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The aim of this course is to provide the students with a sound introduction to the uses of mathematics in business and personal finance applications.

### **Emphasized learning outcomes from the study of this module are:**

- Be able to solve problems with simple and compound interest, as well as with annuities.
- Be able to apply it to real life situations.
- Be able to use the Excel Software

### **Taking this course will help students acquire the following competences and skills:**

- Improve logical reasoning
- Improve work-time organization
- Set out and solve problems and real cases.
- Know the financial vocabulary both in English and Spanish.



## Methodology

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This course combines lectures and laboratory classes. The former will be attended by all students together. For the lab classes students will be split in two groups (information about the classroom for lectures as well as the distribution into groups will be available at the School website the first day of classes).

LAB classes will be held in the computer lab located in the Law building. Students will have to solve with excel several real-life cases. Both the detailed schedule of the course and all case material is available on ADI.

Students must download and study the Excel manual available on the University website (<http://www.unav.es/SI/servicios/manuales.html>) on their own by the time the lab classes begin.

## Grading system

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Grading system (out of 10 points)

- **December announcement:**

Final examination: 50%

Mid-term examination: 30%

Class participation: 15% quizzes, 5% class contribution

Students will not be allowed to take the final examination if they miss laboratory classes without a medical note of absence.

Even though the final exam is taken, the final grade will be NO PRESENTADO if any of the quizzes or the mid-examination is missed.

- **June announcement:**

Final examination: 60%

Mid-term examination: 30%

Class participation: 10% (quizzes and class contribution)

All the exams (mid-term and final) will consist of three or four problems students will have to set out and solve.



## Course Outline

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Chapter 1: Simple interest and simple discount.

Chapter 2: Compound interest: present and future value.

Chapter 3: The annual effective rate: frequency of compounding.

Chapter 4: Annuities

Chapter 5: The Net Present Value method (NPV) as an application of annuities.

## Bibliography

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T.J. Biehler (2008) The mathematics of money. Math for Business and Personal Finance McGraw-Hill Higher Education,

<http://www.mhhe.com/biehler1e>

Jesús M<sup>a</sup> Ruiz Amestoy, Matemática Financiera - Ejercicios resueltos, Ed. Centro de Formación del Banco de España.

Eduardo Pérez Gorostidi (2003), Introducción a la administración de empresas, Ed. Centro de Estudios Ramón Areces.

Eduardo Pérez Gorostidi, (2003) Prácticas de administración de empresas, Ed. Pirámide.

J.E. Rogers, Haney B. F (2000). Mathematics of Business Pearson Prentice Hall

Pilar Maynar (2008), La Economía de la Empresa en el espacio de educación superior, McGraw Hill.



## **Prblem and case material**

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### **Chapter 1: Simple interest and simple discount**

Mandatory readings: Summary of concepts (source: ADI)

Additional readings: Chapters 1 & 2 from the book T.J. Biehler

Mandatory cases (source: ADI). Some of them will be resolved and discussed in class.

- Jhons investment strategy
- Ninas investment strtegy
- Credit cards: non-annual interest rates.
- Promissory notes
- T-bills
- Secondary sales of promissory notes
- Problem set chapter 1

### **Chapters 2 & 3: compound interest and effective rate**

Additional readings: Chapter 3 from the book T.J. Biehler

Mandatory cases (source: ADI). Some of them will be resolved and discussed in class.

- The power of the frequency of compounding
- Exemples of APY/APR
- Problem set chapters 2 & 3

### **Chapter 4: annuities**

Mandatory cases (source: ADI). Some of them will be resolved and discussed in class.

- Problem set on annuities
- Case on amortization tables
- Interest rate swap case (to be solved with excel).

### **Chapter 5: The NPV**

Mandatory cases (source: ADI). Some of them will be resolved and discussed in class.

- Problem set on NPV
- NPV case (to be solved with excel).