

Academic Year: ( 2020 / 2021 )

Review date: 08-07-2020

Department assigned to the subject: Business Administration Department

Coordinating teacher: SAMARTIN SAENZ, MARGARITA

Type: Compulsory ECTS Credits : 3.0

Year : 1 Semester : 1

## OBJECTIVES

The objectives of this subject are on the one hand to know the fundamental characteristics of social welfare models in the world, with special emphasis on the benefits of the Spanish Social Security System and its financial system, providing the student with scientific information that will allow to know and value public intervention in the coverage of economic and social security. The second objective of this subject is to know the pension schemes as well as other private pension plans, study the financing systems of pension plans and the modeling of their cost as well as the technical, tax and legal framework in which they are carried out.

To achieve these fundamental objectives, the student, at the end of the course must have reached a series of knowledge, skills and attitudes that are detailed below:

### Of knowledge:

- Know the fundamental characteristics of public social security schemes.
- Know the operation of the Social Security System in Spain.
- Know the actuarial aspects of Social Security pension schemes, especially related to the retirement contingency.
- Know the reforms and trends applied in the field of Social Security
- Know the fundamental characteristics of a pension scheme and other private pension plans.
- Know the technical hypotheses that underlie the overall assessment of a private pension plan.
- Learn how the benefits of private pension plans are valued.
- Learn how the benefits of private pension plans are valued.
- Know the legal framework in which these types of operations are developed.
- Know the taxation of private pension plans

### Of ability:

- Learn to analyze and describe the main aspects of financial methods of Social Security.
- Learn to interpret financial-actuarially the information derived from the contributory systems of the Social Security.
- Learn the actuarial principles on which private pension systems are based.
- Know how to analyze and correctly interpret the information extracted from the specifications of the pension plans.
- Learn to model the cost of pension plans through the application of actuarial techniques.
- Learn to evaluate the variations in the cost of a forecasting plan if there are changes in the actuarial assumptions on which the plan is developed.

### Of attitude:

- Capacity for analysis and synthesis.
- Ability to organize and plan work.
- Ability to solve complex problems of usual actuarial practice.
- Autonomous work and adaptation to changing situations.
- Improves the ability of oral and written expression.
- Improve a critical attitude that allows judged value judgments and defend them with rigor and tolerance.
- Ability to work as a team

## DESCRIPTION OF CONTENTS: PROGRAMME

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As for the content of the program itself, it has been structured in two parts. The first part introduces the basic concepts associated with social security (such as the concept of social security based on the system of the three pillars, the special regimes, the protective action, the main benefits of retirement, disability, survival and adaptation of pensions to economic variations). In addition, the individual and collective actuarial capitalization systems and the financial viability of the pay-as-you-go system are analyzed. In the second part the concept of social security is introduced, as well as the existing plans in Spain before and after the outsourcing, the financial regime, the profitability and the risk of the pension plans and funds are analyzed, as well as their capacity as a vehicle for externalization of labor pension schemes commitments.

The different methods of distributing the actuarial cost of a pension plan (accrual benefits method, projected benefits method) are then analyzed and concluded with the study of the impact of actuarial hypothesis changes in the cost of pension plans.

### ASSIGNMENT PROGRAM.

- 1.- The actuarial principle of collective equivalence.
- 2.- The actuarial financial systems.
  - 2.1.- Pay As You Go System (Pure and stepped average installment).
  - 2.2.- Coverage Capital Distribution System (Annual and Attenuated).
  - 2.3.- Capitalization System (Individual and Collective).
- 3.- The public Social Security system in Spain, and its european and global context.
- 4- Protection of pension commitments assumed by companies with workers.
- 5.- The actuarial hypotheses: mortality tables, disability tables, technical interest rates, salary projections, inflation, management costs.
- 6.- Methods of actuarial cost evaluation in the actuarial financial system of capitalization.
  - 6.1.- Concepts: total actuarial cost, actuarial liability, normal cost, supplementary cost.
  - 6.2.- Method of accumulated benefits or accrued benefits.
  - 6.3.- Method of projected benefits or projected benefits.
7. Actuarial practice using tools and statistical-mathematical models to perform in class.
8. Design of tools in Visual Basic applied to the management of pension schemes.
9. Plans and Pension Funds, and other instruments of the complementary systems of social welfare.

## LEARNING ACTIVITIES AND METHODOLOGY

The teaching methodology of the subject will be:

- Lectures: in which the fundamental theoretical and practical concepts that the student must acquire will be developed. For this, a collection of notes and exercises that the student will have in advance of the classes will be elaborated. Likewise, the bibliography of reference, complementary and additional to the aspects developed in class will be made available to the student to deepen in those subjects in which they are most interested.
- Resolution of exercises and assumptions applied by the teacher, encouraging the active participation of students in the resolution of the same (both individually and as a team). These exercises will be solved during the master classes.
- Throughout the course you will go to the computer rooms to introduce the student computer programming tools applied to solving problems directly related to the contents of the subject.
- Resolution by the student of exercises proposed by the teacher.

## ASSESSMENT SYSTEM

The (continuous) evaluation will be based on the following criteria:

- Participation in class (10%): Concise interventions will be assessed, which connect with the ideas that have been exposed and that add value to the discussion. To this end, the teacher will debate a theoretical issue, a budget, an article, a practical case, etc.
- Resolution of exercises (20%): Exercises will be solved in class that will be presented to the teacher in the established moments. Normally, these exercises will have to be done individually.
- Written exam (70%): to assess the degree to which the student has acquired the skills of established knowledge. Alternatively, a final exam that will represent 100% of the grade for all those students who decide not to be part of the previous continuous assessment system, will be possible.

<b>% end-of-term-examination:</b>	0
<b>% of continuous assessment (assignments, laboratory, practicals...):</b>	100

#### BASIC BIBLIOGRAPHY

- AITKEN, W. A problem solving approach to Pension Funding and valuation., ACTEX Publications., 1996
- ANDERSON, A. The fundamentals of Pension Mathematics. , ACTEX Publications., 1992
- SAEZ DE JAUREGUI, L.M. Public Social Security Systems and Private Employee Benefits Schemes., UC3M Digital Notes., 2018