Universidad Zaragoza

Academic Year/course: 2023/24

27538 - Actuarial and Insurance Operations

Syllabus Information

Academic year: 2023/24
Subject: 27538 - Actuarial and Insurance Operations
Faculty / School: 109 - Facultad de Economía y Empresa
Degree: 449 - Degree in Finance and Accounting
ECTS: 6.0
Year: 4
Semester: First semester
Subject type: Optional
Module:

1. General information

The main goal of this subject is the application of financial and statistical tools to evaluate and manage risks in the field of life (survival and death) and general insurance (non-life insurance) and thus:

- To have a global vision of risk and actuarial and insurance phenomena: their importance, typology and possibilities of measurement and management.
- Know and know how to calculate the most important elements involved in actuarial operations and life and non-life insurance.
- Know the different social and group insurance systems and understand their operation, advantages and disadvantages.
- Understand the stability and solvency systems of insurance entities, as well as reinsurance techniques and calculate the corresponding risk and premium distributions.

These approaches and goals are aligned with the Sustainable Development Goals (SDGs) of the United Nations Agenda 2030 (https://www.un.org/sustainabledevelopment/es/), in particular, the activities planned in the subject will contribute to the achievement of goals 4 and 8.

2. Learning results

The student, in order to pass this subject, must demonstrate the following results:

1. Be fluent in the language and key elements involved in the valuation of life insurance

2. -Value and price the operations associated with life insurance, both for survival and death or mixed cases.

3. -Understand the most important collective and social insurance systems: differentiate their characteristics, establish their advantages and disadvantages and make the corresponding calculations.

4. -Understand and value the different types of pension plans and other savings channeling products linked to survival, making the appropriate calculations.

5. -Model and calculate the components of general insurance

6. -Propose the pricing of general insurance contracts

7. -Know and understand the stability and solvency systems of insurance companies, paying special attention to the calculation of technical provisions and the most important technical variables of reinsurance.

3. Syllabus

UNIT 1 Fundamentals of actuarial mathematics.

PART I. LIFE INSURANCE AND PENSION PLAN OPERATIONS

UNIT 2 Capitalization and actuarial updating processes.

UNIT 3 Fractional annuities

UNIT 4 Life insurance operations

UNIT 5 Insurance pricing

UNIT 6 Group and social insurance

UNIT 7 Pension plans and funds

UNIT 8 Survivorship income

PART II. NON-LIFE INSURANCE OPERATIONS

UNIT 9 General insurance

UNIT 10 Distribution of the number of claims and the amount of a claim

UNIT 11 Non-life insurance pricing

UNIT 12 Technical reserves or provisions

UNIT 13 Reinsurance

4. Academic activities

- Theoretical lectures (30 hours), which include presentations on current topics and cases related to the subject.

- Practical classes (30 hours) in which cases proposed by the Teacher will be solved. Some of the practical classes are held in computer classrooms.

- Students will have individualized tutoring and consultation hours.

- The Moodle application will be used to provide students with the fundamental information and contents of the subject.

- Estimated Personal Study: 88 hours

- Tests Evaluation: 2 continuous evaluation tests during class time, and global tests if needed.

6 ECTS = 150 hours

In principle, the teaching methodology and its evaluation is planned to be based on face-to-face classes . However, if circumstances so require, they may be carried out online.

5. Assessment system

The subject will be evaluated in continuous evaluation in the first call, with the possibility of a global evaluation in both the first and second call.

Continuous assessment:

Consisting of two eliminatory theoretical-practical tests to be performed, respectively, at the end of Topic 6 (Topics 1 to 6) and Topic 13 (Topics 7 to 13).

The tests will be written and will consist of theoretical and practical questions. Theoretical questions can be open-ended (short answer) or multiple-choice questions. The practical questions will be in line with the practical cases proposed in class at throughout the subject.

The weight distribution of the different tests is as follows:

- First written test: 50%

- Second written test: 50%

In order to pass the subject by this method, the result of the previous weighting must be equal to or higher than 5 points out of 10. No minimum grade is required in each of the tests.

Global Assessment:

Students who do not opt for continuous assessment, who do not pass the subject through continuous assessment or who wish to improve their grade, will have the right to sit the overall exam, with the best of the grades obtained prevailing in any case.

The global test consists of a theoretical-practical exam, which will be held on the date and time established in the official call at . The theoretical questions can be open-ended (short answer) or multiple choice. The practical questions will be in line with the practical cases proposed in class throughout the subject. To pass the subject the student must obtain in the exam a score equal to or higher than 5 out of 10 points.

At the second call, the assessment will be carried out only by means of a global test with the same characteristics already mentioned.

The grade of the **first call** will be the maximum obtained considering the continuous evaluation system and the global test.

The grade for the **second call** will be the grade obtained in the overall test.

Assessment Criteria:

For all the tests, the total score for the theoretical content questions will be a maximum of 4 points out of 10. The remainingof the score will be distributed among different practical exercises.

The total number of questions and exercises in each of the written tests or examinations shall be at least 6.

The student must demonstrate an appropriate application of the theoretical and practical knowledge acquired in the subject, as well as an appropriate defense and presentation of the results.