uc3m Universidad Carlos III de Madrid

Advanced analysis in life insurance operations

Academic Year: (2022 / 2023) Review date: 09-05-2022

Department assigned to the subject: Business Administration Department

Coordinating teacher: SAMARTIN SAENZ, MARGARITA

Type: Compulsory ECTS Credits: 3.0

Year: 2 Semester: 1

OBJECTIVES

The objective of this subject is to deepen theoretically and conceptually in specific aspects related to the life insurance activity for the assessment of solvency and, specifically, the profitability of an insurance company.

The target is to provide students with the ability to efficiently solve and understand any aspect of actuarial practice related to these aspects using the most recent statistical-mathematical tools and models.

In order to achieve this fundamental objective, the student, at the end of the course must have reached a series of knowledge, skills and attitudes that are detailed below:

CAPABILITIES

- Know the actuarial valuation criteria in life insurance.
- Ability to measure and assess the solvency of life insurance entities.
- Ability to use "profit testing" as a model for profitability analysis in companies.
- Ability to perform sensitivity analysis using accounting data and projections.
- Ability to make future projections of income and expenses through different methodologies for assessment with the solvency criteria II.
- Ability for analysis and synthesis. Ability to organize and plan work.
- Ability to solve complex problems of usual actuarial practice.
- Teamwork. Enhance the ability of oral and written expression.
- Ability to communicate with experts from other areas.
- Ethical commitment.

DESCRIPTION OF CONTENTS: PROGRAMME

- 1 PROFIT TESTING.
- 2 BEST ESTIMATE ASSUMPTION AND DISCOUNT CURVE
 - NON MARKET ASSUMPTIONS: LAPSE, PUP, MORTALITY, LONGEVITY
 - MARKET ASSUMPTION: ECONOMIC SCENARIOS AND DISCOUNT CURVES
- 3 MARKET CONSISTENT EMBEDDED VALUE (MCEV)
 - CFO FORUM PRINCIPLES
 - VIF: PVFP, TVOG, FCRC, CRNHR
 - FREE SURPLUS.
- 4 MARKET VALUE BALANCE SHEET (MVBS)
- MARKET VALUE LIABILITY AND COMPONENTS
- MARKET VALUE ASSET
- RISK MARGIN
- 5 MOVEMENT ANALYSIS AND RECONCILIATION BETWEEN MCEV Y MVBS.
- 6 INTRODUCTION TO IFRS 17: VALUATION OF INSURANCE CONTRACTS AND COMPONENTS

LEARNING ACTIVITIES AND METHODOLOGY

Theoretical classes with support material available on the University Web (guides / power points and exercises, basic bibliography and complementary material to deepen in those topics in which the students are most interested).

The fundamental theoretical and practical concepts of the subject that the student must acquire will be

developed, and will solve exercises by the teacher, encouraging the active participation of students in the resolution of the same (both individually and as a team).

ASSESSMENT SYSTEM

The evaluation will be based on the results of the following activities:

1- Written exam and type test exam: the exam will be done at the end of the course content.

The score obtained in this exam weighs 80% of the final grade obtained.

2- Realization of practical exercise: the practical exercise must be developed throughout the duration of the subject. It will be held as a group and a result will be delivered at the end of a week before the end of the course.

The score obtained in this practical exercise weighs 20% of the final grade obtained.

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

BASIC BIBLIOGRAPHY

- CFO Forum: Principles and Guidance ., ..
- Textos de EIOPA (European Insurance and Occupational Pensions Authority): technical specifications, consultation papers., ..
- Textos de IASB International Accounting Standards Board. IFRS17 Basis for Conclusions and examples, ...