

## Solvency II

Academic Year: ( 2023 / 2024 )

Review date: 17-04-2023

Department assigned to the subject: Business Administration Department

Coordinating teacher: SAMARTIN SAENZ, MARGARITA

Type: Compulsory ECTS Credits : 6.0

Year : 2 Semester : 1

## OBJECTIVES

Solvency II subject is an introduction to the theoretical concepts behind the solvency in the insurance Industry. This has been harmonized across Europe through the implementation of a EU Directive also known as Solvency II Directive. The goals are the achievement of the following knowledge, skills and aptitudes:

Knowledge:

- Understanding the concept of the Market Value Balance Sheet
- Understanding the marked- to- model valuation of the insurance liabilities.
- Understanding the risk factors inside the insurance business and the Solvency II directive
- Understanding the Economic Capital calculations inside Solvency II. Solvency Capital requirements
- Distinguishing between Internal models and the standard formula
- Learning the standard formula calculations.
- Understanding the diversification effects across risk factors
- Understanding the long term guarantees and the financial options embedded in the insurance products
- The role of the Actuarial Function inside Solvency II

Skills

- Making use of the legislation and industry papers that surrounds the Solvency II project.
- Understanding the risk inside the insurance products currently being offered in the market
- Designing new products according to the Company's risk appetite
- Evaluating the overall risk position of the Company to suggest changes according to the Company's strategy
- The use of data collection and experience monitoring to review models , assumptions and well-argued choices in risk metrics

Aptitude

- Ability to communicate with experts from other areas and national supervisory authorities.
- Ability to solve problems of usual actuarial practice.
- Personal aptitudes for team work, analysis, synthesis, and oral & written capabilities

## DESCRIPTION OF CONTENTS: PROGRAMME

## 1. Introduction

- The origins of Solvency II. The three pillar system.
- Legislation: Directive, Regulation and transposition to national legislation
- EIOPA documentation: Opinions, Guidelines, Consultations

## 2. Valuation: Assets and Liabilities

- The foundations of financial valuation inside Solvency II: Non arbitrage vs Diversification
- Technical Provisions. Best Estimate and Risk Margin
- Market Value Balance Sheet
- Data quality and Data governance

## 3. Discount rates

- Illiquidity premium.
- Long term guaranteed measures. Volatility and Matching adjustment
- Extrapolation of the Interest Rate term structure

## 4. Solvency II and Economic Capital. VaR and TVar

## 5. Capital Requirement. SCR and MCR

- Risk Factors embedded in the insurance products. Market Risk vs Technical insurance risk

- Standard Formula. Modules and submodules.
  - Internal models vs Standard Formula
6. Pillar II. Own Risk and Solvency Assessment. The role of the actuarial function.

#### LEARNING ACTIVITIES AND METHODOLOGY

Lectures: the teacher will explain the concepts and the methodology inside the subject using the primary documentation or additional documents for specific lessons in each of the weekly session.

- Exercises: problems or documents subject to debate will be presented to the students in order to be discussed in the following classes on individual or team basis. These exercises will be solved during the weekly sessions and some should be presented ahead of their resolution. The result of this work enables the student to two extra points in the final grade.

#### ASSESSMENT SYSTEM

Written Test: 40 questions with a multiple choice answer. 26 need to be correct in order to pass the subject. (26 points)

- Final exercise: Exercise that encompass concepts for the whole subject. This is carried out at student level and delivered before the written test day. It will grant 4 extra points to on top of the written test results. This exercise is voluntary in order to qualify the student grade as passed or not passed. This exercise is mandatory for those students that want to be granted with a higher grade that passed.

Written exam weight: 70%

Exercises weight: 30%

|                                                                             |    |
|-----------------------------------------------------------------------------|----|
| <b>% end-of-term-examination:</b>                                           | 70 |
| <b>% of continuous assessment (assignments, laboratory, practicals...):</b> | 30 |

#### BASIC BIBLIOGRAPHY

- René Doff. Risk Management for Insurers., Ed Risk Books..
- Textos emitidos por EIOPA (European Insurance and Occupational Pensions Authority), X.
- Textos legislativos del Parlamento Europeo. Directivas y Reglamentos., x.