

## **INSURANCE RISK MANAGEMENT - SOLVENCY II (m63110p)**

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Core Course, 4<sup>th</sup> semester, 5 ECTS units

Course level: Graduate (MSc)

Language: Greek

### **Course Description**

- Enterprise Risk Management frameworks in the context of insurance undertakings, basic principles, the role of risk culture
- Taxonomy and classification of risks that insurance undertakings are facing
- Valuation of future cash flows, calculation of the best estimate of technical provisions in the framework of Solvency II
- Risk quantification methodologies of insurance undertakings (1-year MTM approach, Liability Run-off approach), economic capital, standard approach of Solvency II
- Asset Liability Management principles and methodologies (cash flow matching, cash flow testing, key rate durations, asset-liability adequacy tests)
- The framework and processes of holistic risk management (stakeholders, risk control, strategic risk management, emergent risk management, risk management culture)
- Scenario analysis and stress tests in an ERM framework, Own Risk and Solvency Assessment in the framework of Solvency II.

### **Prerequisites**

Students should have basic knowledge of mathematical calculus, linear algebra, probability and statistics. Financial mathematics, Life contingencies, basic principles of investment theory, basic principles of corporate finance (e.g NPV methodologies).

### **Target Learning Outcomes**

- to understand the basic principles and elements of the risk management framework of Solvency II,
- to understand the risks that insurance undertakings are facing
- to understand the basic principles for the calculation of best estimate of technical provisions according to Solvency II and to be able to apply them on basic life insurance products
- to understand the need of insurance undertakings to maintain solvency capital and to be able to apply different risk quantification methodologies
- to understand the basic principles and methodologies of asset-liability management and to be able to apply them under different contexts.

### **Recommended Bibliography**

- N. 4364/2016
- Regulation (EU) 2015/35
- Act of the Executive Committee TtE 81/2016, regarding the valuation of technical provisions

- Introduction to Solvency II of (re)insurance companies, I.Chatzivasiloglou, Financial Bulletin no.44, Bank of Greece
- The valuation of assets and liabilities of (re)insurance companies according to Solvency II, I.Chatzivasiloglou, Financial Bulletin no 45, Bank of Greece
- Financial Enterprise Risk Management by P.Sweeting,, Cambridge University Press
- Enterprise Risk Management – Integrated Framework by Committee of Sponsoring Organizations of the Treadway Commission (COSO)
- Investment Science by D.Luenberger, Oxford University Press

### **Teaching and Learning Activities**

One three-hour lecture per week, study exercises as homework (some to be submitted).

### **Assessment and Grading Methods**

The final grade is the average of the final examination grade ( $\alpha\%$ ) and the grade of the study and programming exercises to be submitted ( $100\% - \alpha\%$ ), provided that the final examination grade is at least 5/10. Otherwise, the final grade equals the final examination grade. The percentage  $\alpha\%$  varies within the range 20%-40% depending on the difficulty of the exercises each academic year.