UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Theory of Risk and Insurance Markets

2526-3-E1803M108

Learning objectives

At the end of the course, students will have achieved the following learning outcomes, in line with the Dublin Descriptors for first-cycle (Bachelor's level) qualifications:

Knowledge and understanding
Students will acquire a comprehensive understanding of the Italian insurance and pension systems. In particular, they will understand the main technical-operational characteristics and regulatory framework of life and non-life insurance companies, as well as the structure and functioning of both public pension schemes and private pension funds, including aspects related to their financial management.

Applying knowledge and understanding
Students will be able to apply the acquired concepts to analyze real-world insurance and pension scenarios, interpret regulatory and operational issues, and assess the functioning of financial instruments and mechanisms within these sectors.

Making judgements
Students will develop the ability to critically assess the role of insurance and pension institutions in the financial system, evaluate regulatory implications, and form reasoned judgments on technical and policy issues related to risk coverage and long-term savings.

Communication skills
Students will be able to clearly present and discuss the main technical and institutional features of the insurance and pension systems, using appropriate terminology and argumentation in both academic and professional contexts.

Learning skills
Students will enhance their ability to autonomously explore and deepen their knowledge in the fields of insurance economics and pension finance, preparing them for more advanced studies or entry into the financial services industry.

Contents

The course is divided into two parts, the first entitled "Economics and Technique of Insurance Companies" and the second entitled " Social Security".

Economics and Technique of Insurance Companies

This course provides the fundamentals of insurance business, the market and the economics of insurance companies. After an overview of the peculiarities of the industry and the concepts of risk management, the course explores the basic principles of insurance activities, the characteristics of supply and demand, the life and non-life businesses, the structure and operation of companies, the value creation process, the balance sheet, capital and governance requirements and the most relevant aspects of supervisory regulations. Risk and capital management.

Social security

The module focuses on outlining the characteristics of the Italian social security system, with a focus on the regulatory evolution that has determined its current structure. After the overview of the system, the pension funds system in Italy is analysed in more detail, focusing on closed pension funds, open pension funds and individual insurance pension products, analysing their regulations, structure and functioning. In the final part of the module the focus is on the financial management of pension funds, with hints at the basic principles of portfolio theory and particular attention to the evaluation and measurement of fund performance.

Detailed program

Economics and Technique of Insurance Companies

Section I - Industry characteristics, the notion of risk and its management. Risk pooling and its benefits. Basic principles of insurance, diversification, moral hazard and insurability of risks. Ownership structures, capital choices and supervision. Supply and demand structures.

Section II - Life insurance products: technical and regulatory characteristics of life contracts and their classification. The main technical-actuarial profiles relating to pricing and the establishment of the actuarial reserves. Analysis of the offer of the main products available in Italy.

Section III - Non-life insurance products: technical and regulatory characteristics of non-life contracts and their classification. The main technical-actuarial profiles relating to pricing. Analysis of the offer of the main products available in Italy.

Section IV - Technical management, financial statements and capital requirements. The statutory financial statements of insurance companies and the financial statements according to IAS/IFRS. Value creation and the main management and financial statement indicators for measuring performance. The three pillars of Solvency II. Strategic planning, capital management and Own Risk and Solvency Assessment.

Social security

1. Course introduction

2. The Italian pension system and its characteristics (ref. chapter 1th of the textbook)

3. Forms of complementary social security (ref. chapter 2th)

4. Forms and organisational models of pension funds (ref. textbook appendix)

5. Fiscal profiles of pension funds (ref. chapter 4th)

6. Negotiated funds - (ref. chapter 2th - 2.6)

7. Open-ended pension funds and the insurance offer (ref. chapter 2th - 2.11 and 2.12)

8. The financial management of pension funds (Slides)

8.1 basic principles of portfolio theory (Markowitz, CAPM) with Excel applications
8.2 passive management and benchmarking
8.3 the construction, types and selection of benchmarks
8.4 basic principles of performance measurement
8.5 risk-adjusted performance measures

Prerequisites

None

Teaching methods

All lectures are conducted in face-to-face delivery modality:

- 14 lectures of 2 hours delivered in the in-presence delivery mode. 28 lectures in the aggregate.

Assessment methods

For all sessions, the exam is conducted **orally** and may be preceded by a multiple-choice test on the Computer-Based Exam Platform (Moodle).

IF APPLICABLE (Multiple Choice - MC)

The test requires students to be connected to the instructor's Webex room for identity and environment monitoring. If requested, a second connection using a mobile phone may be required to allow visual access to the student's desk.

There will be three alternative exam formats available:

a) only the exam with Prof. Forte (Pensions module);
b) only the exam with Prof. Contaldo (Insurance Techniques module);
c) a combined exam covering both modules (Comprehensive format).

Each single-module test lasts 7 minutes, while the comprehensive test allows 14 minutes. Time is tracked

automatically, and the test is automatically submitted when time expires.

The comprehensive MC test consists of 20 multiple-choice questions: 10 from the Insurance Techniques module and 10 from the Pensions module. Only one correct answer is allowed per question.

Each correct answer = 1 point

Each incorrect answer = –0.25 points

Each unanswered question = 0 points

The Pensions module MC test consists of 10 questions, with the same scoring rules.
The Insurance Techniques module MC test also consists of 10 questions, with the same scoring rules.

At the end of the written (MC) test, students will receive their score and instructions for taking the oral exam.
The MC score will serve as a reference and indicative base for the subsequent oral evaluation.
After the MC test, students may decide to withdraw, but withdrawal is not allowed after the oral exam has started.

Students who complete the comprehensive test are required to take the oral exam for both modules (Pensions and Insurance Techniques).

Oral Exam Procedure
Only students who have passed the MC test — i.e., those who have obtained:

more than 3 points in each individual module (Pensions and Insurance Techniques), or

more than 7 points in the comprehensive test,

and have been properly identified, will be admitted to the oral exam, which will be conducted following the schedule determined by the instructors.

The final grade for the course will be the arithmetic mean of the grades obtained in the two modules.

It is possible to take the two modules in separate exam sessions; however, the grade of a single module can be retained for only one subsequent exam session.

Textbooks and Reading Materials

Economics and technique of insurance

Compulsory reading of the material provided by the lecturer and which will be made available in the "teaching material" section of the course e-learning page. The material consists of three documents covering all parts of the course.

Recommended textbooks:

A. Bellucci, Strategy, risk management and value creation in insurance companies, Giappichelli, 2014.

C.Porzio, D.Previati, R.Cocozza, S.Miani, Raoul Pisani. Economics of insurance firms. McGrow-Hill 2011. [Chapters 1, 2, 3, 4, 5, 6, 7, 8, 11].

Other textbooks: Alberto Floreani. Economics of insurance companies. Il Mulino/manuals 2011. Edited by Stefano

Miani. I prodotti assicurativi - third edition. G. Giappichelli Editore - Turin 2010. (NB the text only deals with part 2 and 3 of the course).

Social security

The reference resource consists of the parts of the book indicated in the Syllabus, and the slides provided by the teacher.

The study of the parts of the textbook indicated by the teacher is compulsory, in addition to the slides and other material that may be provided. The material provided by the teacher will be available in the "teaching material" section of the course e-learning page.

Recommended textbook:

"La previdenza complementare per i lavoratori pubblici e privati" ; Francesco Vallacqua - Ed. Egea 2012

Semester

First half

Teaching language

Italian

Sustainable Development Goals