UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Insurance Risk

2526-2-F1601M090

Learning objectives

1. Knowledge and Understanding
The course aims to provide students with essential analytical tools to:

- assess economic phenomena characterized by uncertainty...
- model insurance and financial products...
- understand and manage business risks...
  ... in accordance with the basic principles of actuarial science.
  In particular, the module ***Foundations of Actuarial Techniques*** provides a sound basis to understanding the insurance market, the main features of life and non-life insurance contracts, and quantitative methods for evaluating technical reserves under different accounting standards, as well as assessing risks in relation to Solvency II.

The module **Statistical Risk Assessment** develops skills related to the quantification, forecasting, and management of risk, with particular reference to the insurance sector (non-life), and with potential extensions to emerging risks (climate, cyber, ...) alongside with financial market risk (statistical analysis of extreme values).

2. Ability to Apply Knowledge and Understanding
Students progressively develop the ability to determine the future trends of demographic, economic and financial variables, shaping reality over short-, medium-, and long-term periods. Emphasis is placed on using Excel to understand the main pricing and reserving techniques in the context of local GAAP and Solvency II (module "Foundations of Actuarial Techniques"), and on using SAS and Matlab to implement generalized lineare models for insurance pricing and statistical tecniques of extreme value analysis, respectively (module "Statistical risk assessment"). Please refer to the syllabi of the individual modules for details.

3. Judgment Autonomy
In both modules, students will learn to complement statistical methods with the ability to interpret data, with a view to providing strategic support for business decisions. In both modules, students are encouraged to reflect on the implications for decision-making in actuarial and financial contexts. Please refer to the respective syllabi for specific

aspects.

4. Communication Skills
The ability to clearly and comprehensively present the results of analyses and the impacts of each decision, both qualitatively and quantitatively, is enhanced. Students become familiar with the specific technical language of the insurance sector and are encouraged to learn about the profession of the Actuary in insurance companies and financial companies that manage particular risks. In both modules, a particular focus is dedicated to aspects of Risk Management. Please refer to the respective syllabi for specific aspects.

5. Learning Skills
The course promotes the development of a study method that enables students to connect various topics (insurance company economics, actuarial and risk analysis techniques, Risk Management, Financial Risk Management, etc.) and explore the different implications for the actuarial profession. The integration of theory and practice fosters active and lasting learning, which is also instrumental in facilitating entry into the job market. Please refer to the individual syllabi for details.

Contents

Please refer to the syllabi of the individual modules.

Detailed program

Please refer to the syllabi of the individual modules for details.

Prerequisites

Please refer to the syllabi of the individual modules for details.

Teaching methods

Please refer to the syllabi of the individual modules for details.

Assessment methods

Please refer to the syllabi of the individual modules for details.

Textbooks and Reading Materials

Please refer to the syllabi of the individual modules for details.

Semester

Second semester

Teaching language

Italian

Sustainable Development Goals

QUALITY EDUCATION | GENDER EQUALITY | INDUSTRY, INNOVATION AND INFRASTRUCTURE