ACTUARIAL SCIENCE FOR SOCIAL SECURITY
SECS-S/06 - 9 CFU - 2° Semester

Teaching Staff

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LEARNING OBJECTIVES

1. Knowledge and understanding

The purpose of the course is the acquisition of theoretical principles concerning the life and non life insurance as well as pensions systems and social insurance. Beyond the indispensable theoretical knowledge, properly formalized, we also intend to transfer adequate professional skills to deepen the topics covered by an operational point of view.

The teaching methodologies are designed to develop students’ professional skills using also multimedia, database access, use of spreadsheets, etc. The exam is composed of a written test and an oral examination, with the goal of testing for the student’s knowledge, his understanding of the abstract concepts, and their translation from an operational point of view. During the entire course, knowledge and understanding are tested on a continuous basis, and a fruitful and active participation by students is always stimulated.

2. Applying knowledge and understanding

Special attention is also paid to operating activities of future graduates, who are facing the problems professionally before mentioned, often under different assumptions or in different contexts, also transversal and interdisciplinary. To this end, teachers use a teaching method with the emphasis to the acquisition operations ("know-how") of the analytical tools and concepts proposed during the teaching of the discipline, aiming to develop critical skills of the student in a continuous process interaction analysis - synthesis, also presenting in the classroom appropriate real cases, guiding the study and analysis with the help of educational tools and technology more appropriate. Teachers care in its review of final learning the actual acquisition of these skills, even proposing and discussing critically and constructively with students drawn from them prepared with these precipue purposes.

3. Making judgments

The development of a critical ability in the context of the topics covered is a major educational objectives
of teaching. A good acquisition of theoretical knowledge and operational capabilities in the program of education is not enough for a complete training of the student if such preparation is not accompanied by the acquisition of a thorough, independent, socially and morally responsible capacity assessment, setting and resolution of a problem, proposing models that consider more appropriate analysis of financial issues considered. Such awareness serves as a guide to teachers throughout the training of discipline, making them interact with students in a constructive logic, in order to stimulate all phases of teaching, their capacity for reflection, acquisition and interpretation of the information needed and data essential, although insufficient or incomplete, for the management of complex issues, the construction and understanding of formal models, both descriptive and prescriptive. The focus is, therefore, training of research of economic and financial information sources, both traditional and modern, more appropriate (consultations of specialized publications, databases, websites, etc.).

4. Communication skills

The teaching will put the student in a position to transfer to third parties, even non-specialists, with clarity, precision and language appropriate technical, information, analysis, value judgments, projects and proposals on complex financial issues, that on the job will face. The student is continually urged to make oral and formally their thoughts in proper arguments and techniques, to draft documents in writing, to prepare presentations multimedia, individually and in groups, to discuss what has been presented in the classroom, to stimulate a fruitful collaboration on the level of communication. The final exam is an additional chance for reflection and verification of the various communication skills actually achieved by the student. 5. Learning skills will provide students both an encouragement for a more active participation as possible to the entire educational process and for an improvement in the method of study and the purpose of a more effective learning of the discipline, presenting characteristics precipue in terms of learning by means of an appropriate process inductive - deductive.

COURSE STRUCTURE

The course starts by recalling basic concepts of probability theory. After the basic concepts of theory of insurance mainly related to the concepts of expected net present value and expected utility are introduced. After, the insurance portfolio management is discussed. Non life insurance and life insurance are presented. Finally, pension plans and health insurance are treated.

DETAILED COURSE CONTENT


Financial operations and insurance: operations under certainty and operations under uncertainty. Values, present values, expected values and expected net present values. The price in a financial operation under uncertainty. Expected value and variance. The utility function. The expected utility criterion. Insurance applications.

Non-life insurance.

Life tables. Life insurance. Mathematical reserve.


Pension plans. Health insurances.

**TEXTBOOK INFORMATION**
