The Hebrew University of Jerusalem

Syllabus

INTRODUCTION TO ACTUARY - 52007

Last update 10-10-2019

HU Credits: 4

Degree/Cycle: 1st degree (Bachelor)

Responsible Department: Statistics

Academic year: 0

Semester: 1st Semester

Teaching Languages: English

Campus: Mt. Scopus

Course/Module Coordinator: benjamin Yakir

Coordinator Email: benjamin.yakir@mail.huji.ac.il

Coordinator Office Hours: By appointment

Teaching Staff:

Prof Benjamin Yakir

Course/Module description:

The syllabus is based on the IFoA CM1 examination. (This examination replaces CT1 and CT5).

Course/Module aims:

Actuarial Mathematics (CM1) provides a grounding in the principles of actuarial modelling, focusing on deterministic models and their application to financial products. It equips the student with a knowledge of the basic principles of actuarial modelling, theories of interest rates and the mathematical techniques used to model and value cashflows which are either certain or are contingent on mortality, morbidity and/or survival. The subject includes theory and application of the ideas to real data sets.

Learning outcomes - On successful completion of this module, students should be able to:

1. Extract cashflows from a verbal description of a financial problem.
2. Conduct financial computations in actuarial contexts.
3. Answer question at the level and style of the actuarial examinations.
4. Analyse data and draw conclusions.

Attendance requirements(%):

None

Teaching arrangement and method of instruction: The theoretical material of the course will be presented in the lectures. A list of questions from old CT1 and CT5 examinations will be set. The students are required to learn independently the questions and understand the methods for solving them. The students can use the lecture time in order to clarify difficult subjects.

Course/Module Content:

1. Data and basics of modelling (10%)
2. Theory of interest rates (20%)
3. Equation of value and its applications (15%)
4. Single decrement models (10%)
5. Multiple decrement and multiple life models (10%)
6. Pricing and reserving (35%)

Required Reading:
Class notes

Additional Reading Material:

Course/Module evaluation:
End of year written/oral examination 60 %
Presentation 0 %
Participation in Tutorials 0 %
Project work 0 %
Assignments 0 %
Reports 0 %
Research project 0 %
Quizzes 40 %
Other 0 %

Additional information:
During the course there will be 4 exams. These exams will be computerized and will be based on past CT1 and CT5 examinations. The score of each these exams will determine 10% of the final score. (The score for an exam is the larger between the mark of the final exam and the mark that was assigned to the exam).

The final exam and the computerized exams are in English. Answers can be submitted in Hebrew.