Non-life insurance pricing

Academic Year: (2019 / 2020)   **Review date: 08-04-2019**

Department assigned to the subject: Business Administration Department

Coordinating teacher: BALBAS DE LA CORTE, ALEJANDRO

Type: Compulsory ECTS Credits : 6.0

Year : 2 Semester : 1

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

Background on Mathematical analysis, probability Theory, Visual Basic and other Languages, Life Insurance and Pension Plans, Fixed Income, and Financial Markets.

OBJECTIVES

The main objective is the study of the most important and modern non-life actuarial models.

Next we will give the topics that the student must learn so as to get the main objective above

Content
- Premium principles
- Risk measurement and management
- Reinsurance
- Credibility theory
- Generalized linear models in insurance

Habilities:
- Risk analysis for existing products/portfolios and design of new products
- Risk management.

Attitude:
- Personal job
- Collaboration with other students.

DESCRIPTION OF CONTENTS: PROGRAMME

FIRST PART: RISK, PREMIUM PRINCIPLE AND REINSURANCE
Risk measures
Frequency and severity
Premium principles
Reinsurance

SECOND PART: CREDIBILITY
Classical approach
Bülhmann approach
Bayesian approach

THIRD PART: GENERALIZED LINEAR MODELS
Beyond linear regression
Applications in insurance pricing
Applications in risk management

LEARNING ACTIVITIES AND METHODOLOGY

Theoretical lectures
Practical sesions
Programming in several languages
Applications wit real life examples

ASSESSMENT SYSTEM

- Exercises: 20%.
- Projects 20%.
- Exam: 60%.

% end-of-term-examination: 60

% of continuous assessment (assigments, laboratory, practicals…):   40

BASIC BIBLIOGRAPHY

- Ohlsson and Johansson Non-life insurance pricing with generalized linear models, Springer, 2010

- Yiu Kuen Tse Nonlife actuarial models. Theory, methods and evaluation, Cambridge Universty Press, 2009