

ST. JOHN'S UNIVERSITY
NEW YORK

THE PETER J. TOBIN COLLEGE OF BUSINESS

Department of Risk Management, Insurance & Actuarial Science

SYLLABUS

Course title: Loss Models (I)
Course number: ACT 4347

Submitted: Fall 2014
Dr. Ping Wang

DEPARTMENT

Risk Management, Insurance & Actuarial Science

COURSE NAME

Loss Models (I)

COURSE NUMBER

ACT 4347

COURSE DESCRIPTION

This is the first of a two-course series that covers the theory and applications of actuarial modeling. It focuses on the properties and applications of specific loss count and loss severity distributions. Certain estimation methods like percentile matching, maximum likelihood estimation, Bayesian estimation and credibility theory are also introduced.

PREREQUISITE

ACT 3332 and ACT 3333.

CREDIT

3 credit hours

OBJECTIVES OF THIS COURSE

After finishing this course, students are expected to be familiar with survival, severity, frequency and aggregate models, and construction of empirical models. Together with Act 4348, this course prepares students for the preliminary exam C of Society of Actuaries and Course 4 of Casualty Actuarial Society.

TOPICAL MODULES

- I. Actuarial distributions (4 weeks)
 - i. Basic distributional quantities
 - ii. Classifying and creating distributions

- II. Actuarial models (4 weeks)
 - i. Frequency and severity with coverage modification
 - ii. Aggregate loss models

- iii. Discrete-time ruin models
- III. Construction of empirical models (4-5 weeks)
- i. Estimation for complete data
 - ii. Estimation for modified data

METHODS OF INSTRUCTION

Lectures, discussions, and exercises.

SUGGESTED STUDENT PERFORMANCE EVALUATION

ASSESSMENT

Student performance will be assessed on homework, quizzes, midterm exams and final cumulative exam.

All examinations and quizzes are closed book and closed notes. Students may bring the same table as provided on SOA Exam C. SOA-approved electronic calculators may be used in all exams and quizzes.

TEXT BOOK

Title	Loss Models: From Data to Decisions
Author	Klugman, S.A, Panjer, H.H., and Willmot, G.E
Publisher	Wiley-Interscience
Date	2012, 4 th edition