UNIVERSITY OF CALGARY

FACULTY OF SCIENCE
Department of Mathematics and Statistics

Actuarial Science 533 Credibility Theory and Loss Distributions

Distributions useful for modelling insurance loss random variables. Approximations for and estimation of these loss distributions. Point and interval estimation, and tests of statistical hypotheses. Introduction to credibility theory, experience rating and claims reserving. Bayesian inferential techniques. Stochastic simulation and computational techniques.
Course Hours: H(3-1T)
Prerequisite(s): Mathematics 323 and Actuarial Science 327.

Main Text: "Loss Models," by Klugman, Panjer, and Willmot, third edition, 2008.
Supplementary / Backup Texts: *Introduction to Credibility Theory*, by Herzog, 1999.

Syllabus

Topics

Chapter 12:

Chapter 13:

Chapter 14:

Chapter 15 (15.1-15.6.4, and 15.6.6):

Chapter 16:

Chapter 20 (20.2, 20.3 except 20.3.8, and 20.4 except 20.4.3)

Chapter 19 and / or Chapter 21 (21.1-21.2 only) (only if time permitting):

Some of the material in the chapters listed above is clearly a review of material that appears in MATH 323 or STAT 421 (e.g., like Sections 12.2), and may be covered as a reading assignment rather than during class time.

It is intended that this course should cover a portion of the syllabus for that part of the professional actuarial examination concerned with the Construction and Evaluation of Actuarial Models. Currently, this corresponds to most of the material listed above from Chapters 12-16, 20, and 21 that is on the syllabus for the Society of Actuaries Exam C. This course syllabus should be updated as needed, with this objective in mind.

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January 30, 2009 Effective Fall 2009
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