



STATISTICS 437 "RISK THEORY"

Calendar Description: H(3-1T)

Economics of insurance; individual risk models for short term; collective risk models for single period; collective risk models over an extended period; application of risk theory to insurance.

Prerequisite: Mathematics 323 and 353

Text: "Loss Models," by Klugman, Panjer, and Willmot, third edition, 2008.

Syllabus

Topics

Chapter 3: Basic Distributional Quantities

Chapter 4: Characteristics of Actuarial Models

Chapter 5 (5.1-5.4): Continuous Models

Chapter 6 (6.1-6.5, 6.7): Discrete Distributions and Processes

Chapter 8: Frequency and Severity with Coverage Modifications

Chapter 9 (9.1-9.7, excluding 9.6.1, and including 9.11.1-9.11.2): Aggregate Loss Models

Some of the material in the chapters listed above is clearly a review of material that appears in MATH 321 or MATH 323 (e.g., like Sections 3.1 and 3.2), 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 3-6, 8, and 9 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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