ACTUARIAL SCIENCE 533
"CREDIBILITY THEORY AND LOSS DISTRIBUTIONS"

Calendar Description: H(3-1T)
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.
Prerequisite: Actuarial Science 327.   **Corequisite:** Statistics 421.

Suggested Text: *"Loss Models,"* by Klugman, Panjer and Willmot, 2nd edition.
    Chp: 16.3.1, 16.3.2, 16.4, 16.4.6, 9-12.5.3, 13.
Supplementary / Backup Texts :
        Introduction to Credibility Theory, by Herzog, 1999.
        Loss Distributions, by Hogg and Klugman, 1984.

Syllabus

This syllabus corresponds with those parts of Exam M and Exam C concerned with loss distributions and credibility theory. See www.soa.org for the latest exam information.

TOPIC	NUMBER OF HOURS
LIMITED FLUCTUATION CREDIBILITY THEORY	
Full credibility	3
Partial Credibility	1
GREATEST ACCURACY CREDIBILITY THEORY	
Bayesian method	6
Linear Exponential Family	1
Buhlmann model and Buhlamann-straub model	5
Empirical Bayes parameter estimation	4
Review of mathematical statistics	2
Estimation for complete data	1
Estimation for modified data	1
Estimation for parametric models	5
Model selection	2
Total Hours	**31**

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