Instructor: Dr. Cary Tsai

Prerequisite:

STAT 285

Required Text:

Loss Models: From Data to Decisions, 2nd Edition, 2004, S.A.Klugman, H.H. Panjer and G.E. Willmot; publisher: Wiley

References:

Foundations of Casualty Actuarial Science (4th Edition), 2004, H.C.Mahler and C.G. Dean
Introduction to Credibility Theory (3rd Edition), 1999, T.N.Herzog ACTEX
ACTEX Study Manual for SOA Exam C and CAS Exam 4, Fall 2005 Edition, by S.A.Broverman, Publisher: ACTEX

Calendar Description:

Limited fluctuation credibility theory: full credibility, partial credibility. Greatest accuracy credibility theory: the Bayesian methodology, the credibility premium, the Buhlmann model, the Buhlmann-Straub model, exact credibility, linear versus Bayesian versus no credibility. Empirical Bayes parameter estimation: nonparametric estimation, semiparametric estimation, parametric estimation. Simulation: basics of simulation, simulation in actuarial modeling. Covers part of the syllabus for C of the Society of Actuaries, and Exam 4 of Casualty Actuarial Society.

Outline:

This course studies the subject of Credibility Theory. The topics covered correspond to chapters 19-17 of the required text. They include the following:

Credibility Theory:

- Limited fluctuation credibility
- Bayesian credibility: non-parametric and semi-parametric
- Bühlmann and Bühlmann-Straub models
- Conjugate priors

Grading Scheme:

Assignments - 10%
Midterm - 40%
Final - 50%
Grading is subject to change.

Revised October 2006