

Math 417C Loss Models III Spring 2008

MWF 11:00 – 11:50 Bouillon 101

Instructor: Cen-Tsong Lin

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Office Hours: 10:00 – 10:50 Monday – Friday or by appointment

Prerequisite: Math417B

Course description:

The students will be introduced to useful frequency and severity models. They will be required to understand the steps involved in the modeling process and how to carry out these steps in solving business problems. The students should be able to:

- (i) analyze data from an application in a business context;
- (ii) determine a suitable model including parameter values; and
- (iii) provide measures of confidence for decisions based upon the model.

The students will be introduced to a variety of tools for the calibration and evaluation of the models.

Learning outcomes:

After taking this sequence, the students are expected to be familiar with survival, severity, frequency and aggregate probability models, and use statistical methods to estimate parameters of such models given sample data. The students are further expected to identify steps in the modeling process, understand the underlying assumptions implicit in each family of models, recognize which assumptions are applicable in a given business application, and appropriately adjust the models for impact of insurance coverage modifications.

Course outlines:

- Parameter estimation (Bayesian estimation, estimation for discrete distribution, Models with covariates) (Chapter 12)
- Credibility (Chapter 16)
- Model selection (Chapter 13)
- Simulation (Chapter 17)

Required Text: Klugman, Panjer and Willmot, *Loss Models: From Data to Decisions*, 2nd Edition, Wiley 2004

Grading Policy

Two tests: Friday, 4/18/2008 and Friday 5/16/2008	50%
Homework assignments	20%
Final exam: Thursday 6/3/2008 8:00 – 10:00 P.M.	30%

Note: Homework will be assigned daily throughout the quarter; these assignments are due one week after they are given.