

**Math 417C Loss Models III Spring 2010**

**MW 3:00 – 4:15 Black 201-01**

**Instructor:** Cen-Tsong Lin

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**Office Hours:** 10:00 – 11:00 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.

**Required Text:** Klugman, Panjer and Willmot, *Loss Models: From Data to Decisions*, 3rd Edition, Wiley 2008

**Course outlines:**

- Parameter estimation (Variance and interval estimation, Bayesian estimation, Estimation for discrete distributions ) (Chapter 15)
- Credibility (Chapter 20)
- Model selection (Chapter 16)
- Simulation (Chapter 21)

**Grading Policy**

Three tests: Wednesday, 4/21/2008 and Wednesday 5/19/2010	50%
Homework assignments	20%
Final exam: 12:00 – 2:00 P.M., Wednesday 6/9/2008	30%

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