INSR 260/831: Applied Statistical Methods for Actuaries
Spring 2009

Part I: Coverage Modifications and Simulation

Instructor: Jean Lemaire

Textbook: Klugman, Panjer, Willmot: Loss Models. From Data to Decisions, 2nd ed. or 3rd ed.

Course pack Reprographics

Office hours: Tuesdays, 3:00-5:00; Thursdays, 3:00-4:30, 3404 SH-DH

Coverage Modifications

Lesson 1 Jan 15	Reinsurance	Course pack
Lesson 2 Jan 20	Deductibles	K 8.2, K 3.1
Lesson 3 Jan 22	Deductibles	K 8.2
Lesson 4 Jan 27	The Loss Elimination Ratio. Inflation	K 8.3
Lesson 5 Jan 29	Policy limits. Coinsurance	K 8.4, K 8.5
Lesson 6 Feb 3	Past exam questions	Course pack

Simulation

Lesson 7 Feb 5	The inversion method - continuous	K 21.1
Lesson 8 Feb 10	The inversion method - discrete	Course pack
Lesson 9 Feb 12	Number of simulations	K 21.1
Lesson 10 Feb 17	Actuarial applications	K 21.2
Lesson 11 Feb 19	Past exam questions	Course pack
Lesson 12 Feb 24	Open	
Lesson 13 Feb 26	Open book exam. You may have in class: your class notes, a calculator (SoA approved or equivalent), the textbook. Other material, such as study manuals, is not allowed.	

Part II: Time Series Models

Instructor: **Robert Stine**

Textbook: Bowerman, O'Connell, Loehler: Forecasting, Time Series, and Regression (4th Edition, Thomson)

Office hours: Tuesday, Thursday, 3-5, 444 JMHH

Regression Modeling

Lesson 1 Mar 3	Regression models	Ch 3, 4.1-4.5
Lesson 2 Mar 5	Regression analysis by computer	JMP package
Lesson 3 Mar 17	Models with categorical effects	Ch 4.8-4.9
Lesson 4 Mar 19	Model diagnostics	Ch 5
Lesson 5 Mar 24	Regression for time series	Ch 6
Lesson 6 Mar 26	Seasonality	Ch 6.3-6.4, Ch 7.1-7.2
Lesson 7 Mar 31	Exponential smoothing	Ch 8
Lesson 8 Apr 2	Variations on exponential smoothing	Ch 8.4-8.5
Lesson 9 Apr 7	Stationary time series, ARMA	Ch 9.1-9.2
Lesson 10 Apr 9	Identification of a model	Ch 9.3-9.4
Lesson 11 Apr 14	Fitting an ARMA model	Ch 10.1-10.2
Lesson 12 Apr 16	Forecasting with an ARMA model	Ch 10.3-10.4
Lesson 13 Apr 21	ARMA models for seasonality	Ch 11.1-11.2
Lesson 14 Apr 23	Combining ARMA and regression	Ch 11.3
Lesson 15	Open/Review	

Apr 28: Mid-term exam

Grade: 40% assignments, 60% final exam.
Final grade: Average of first exam with score from Part II.