

ACT. SCI. 316/516: ACTUARIAL MODELS III
Spring 2002
Professor Michael R. Powers

Class Meetings: Tuesdays and Thursdays: 2:40 – 4:00 p.m.

Office: 481 Ritter Annex
Office Hours: Tuesdays: 12:45 – 2:30 p.m.
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Required Texts:

Klein, J. P. and Moeschberger, M. L., *Survival Analysis*, 1997, Springer-Verlag
Klugman, S. A., Panjer, H. H., and Willmot, G. E., *Loss Models: From Data to Decisions*, 1998, John Wiley and Sons
Ross, S. M., *Simulation* (2nd Edition), 1997, Academic Press

Schedule (Subject to Revision):

<u>Date</u>		<u>Topic</u>
January	22	Review of Estimation Methods (KPW 2.2, 2.3, 2.4)
	24	Problem Session
	29	Evaluating Estimators (KPW 2.5, 2.6)
	31	Problem Session
February	5	Model Selection Issues (KPW 2.9, 2.10)
	7	Problem Session
	12	Claim Count (Frequency) Models (KPW 3.2.3, 3.3.3, 3.4.2)
	14	Problem Session
	19	First In-Class Exam

	21	Problem Session
	26	Total Claim Cost (Pure Premium) Models (KPW 3.5, 3.10.1)
	28	Problem Session
March	5	The Credibility and Bayesian Paradigms (KPW 2.8, 1.5, 5.1-5.2)
	7	Problem Session
	12	<i>No Class (Spring Break)</i>
	14	<i>No Class (Spring Break)</i>
	19	Bayesian Credibility (KPW 5.4.1-5.4.2)
	21	Problem Session
	26	Bühlmann Credibility, Empirical Bayes Methods (KPW 5.4.3-5.4.5, 5.4.7, 5.5.1-5.5.2, 5.5.4)
	28	Problem Session
April	2	Second In-Class Exam
	4	Problem Session
	9	Simulation: Statistical Analysis and Validation (Ross 7, 9)
	11	Simulation: Statistical Analysis and Validation
	16	Problem Session
	18	In-Class Presentations (a) Estimating Survival and Cumulative Hazard Functions (KM 4.2) (b) Confidence Intervals/Bands for Survival Function (KM 4.3-4.4)
	23	In-Class Presentations (a) Estimating Mean/Median Survival Time (KM 4.5) (b) Estimating Survival Function for L-T and R-C Data (KM 4.6)

	25	In-Class Presentations (a) Estimating Survival Function for R-T Data (KM 5.3) (b) Estimating Hazard Function (KM 6.2)
	30	In-Class Presentations (a) Estimating Excess Mortality (KM 6.3) (b) (KM 7.1-7.3)
May	2	Review
	15 (Wed.)	<i>SOA/CAS Part 4 Exam (8:30 a.m. – 12:30 p.m.)</i>

Grading:	Two In-Class Exams	40% each
	In-Class Presentation	20%

The two in-class exams will be based upon readings, homework assignments, and class discussions. No make-up exams will be given.

Each student will make one in-class presentation on a chapter or section from the Part 4 Exam syllabus.