Actuarial Science 537   Credibility Theory

(see Course Descriptions for the applicable academic year: http://www.ucalgary.ca/pubs/calendar/)

Reference Text: "Loss Models," by Klugman, Panjer, and Willmot, fourth edition, 2012. And Chapter 6 of Modern Actuarial Risk Theory using R by Kaas et al. (second edition) 2008.

Syllabus

Topics

Chapter 6 (second text): Bonus-malus systems

Chapter 17: Introduction and Limited Fluctuation Credibility

Chapter 18: Greatest accuracy credibility

Chapter 19: Empirical parameter estimaion

It is intended that this course should cover a portion of the syllabus for that part of the professional actuarial examination concerned with the Construction and Evaluation of Actuarial Models. Currently, this corresponds to most of the material listed above from Chapters 17-19 is on the syllabus for the Society of Actuaries Exam C. This course syllabus should be updated as needed, with this objective in mind.

Course outcomes:

By the end of this course, students will be able to:

1. Identify different types of data used for actuarial analysis
2. Recognize differences in how data are aggregated and segregated.
3. Identify trend adjustments and describe the relationship between trend and loss development.
4. Estimate written, earned and unearned premiums.
5. Adjust historical earned premiums to current rate levels.
6. Use loss development triangles for investigative testing.
7. Calculate ultimate claims using various projection methods: development method, expected method, Bornhuetter Ferguson method, Cape Cod method, frequency-severity methods, Berquist-Sherman methods.
8. Assess the appropriateness of the projection methods in varying circumstances.

9.   Evaluate and justify selections of ultimate values based on the method.

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