

**MATH 653-001 – Construction/Evaluation of Actuarial Models I
Fall 2014**

(<http://math.gmu.edu/~robeirne/math653>)

PREREQUISITE: Math 554 (Financial Mathematics) and Probability & Statistics

INSTRUCTOR: Richard O’Beirne, Department of Mathematical Sciences
Telephone: 703-993-1467
Email: ROBEIRNE@GMU.EDU
Office: Exploratory Hall, Room 4452

MEETINGS: Mondays from 7:20 p.m. to 10:00 p.m. from August 25, 2014 through December 1, 2014 in Planet 127 (except September 1 – Labor Day; and October 13 class meets on October 14)

OFFICE HOURS: 5:00 p.m. – 5:55 p.m. on Mondays and Wednesdays, and by appointment as necessary.

TEXTBOOK: “Loss Models” (4th edition) by Klugman, Panjer and Willmot

MATERIAL: The course will cover most of the material contained in the following chapters:

Chapter 1 – Modeling
Chapter 2 – Random Variables
Chapter 3 – Basic Distributional Quantities
Chapter 4 – Characteristics of Actuarial Models
Chapter 5 – Continuous Models
Chapter 6 – Discrete Distributions and Processes
Chapter 8 – Frequency and Severity with Coverage Modifications
Chapter 9 – Aggregate Loss Models

GRADING: There will be 6 take-home assignments. The highest five will count for 25% of the grade. There will be three one-hour tests. The highest two will count for 45% of the grade. The final examination on December 15 will count for the remaining 30%. I will also give occasional quizzes. The quizzes will not count toward the grade.

This course is heavily oriented toward the Society of Actuaries (SOA) C exam (which is the same as the CAS Exam 4). This exam also covers material to be taught in Math 654. During this course I will review many exam-type questions which will be helpful to those planning to sit for the C/4 exam.

As time permits, at the end of the course, I will provide an overview of Discrete-Time and Continuous-Time Ruin Models which were presented in previous editions Chapters 10 and 11. This beautiful material is optional since the SOA alternately adds and removes these Chapters from the C/4 Exam syllabus.