

MATH 654-001 – Construction of Actuarial Models II

Spring 2014

(<http://math.gmu.edu/~robeirne/math654>)

- PREREQUISITE:** Math 653 or permission of instructor
- INSTRUCTOR:** Richard O’Beirne, Department of Mathematical Sciences
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Email: ROBEIRNE@GMU.EDU
Office: Exploratory Hall, Room 4452
- MEETINGS:** Wednesdays from 7:20 p.m. to 10:00 p.m. from January 22, 2014 through April 30, 2014 in IN 211 (except Wednesday, March 12, 2014 – Spring break)
- OFFICE HOURS:** 4:30 p.m. – 5:30 p.m. on Mondays and Wednesdays, and by appointment as necessary.
- TEXTBOOK:** “Loss Models” (3rd or 4th edition) by Klugman, Panjer and Willmot
- MATERIAL:** The course will cover most of the material contained in the following chapters:
- Chapter 10 – Review of Mathematical Statistics
 - Chapter 11 – Estimation for Complete Data
 - Chapter 12 – Estimation for Modified Data
 - Chapter 13 – Frequentist Estimation
 - Chapter 14 – Frequentist Estimation for Discrete Distributions
 - Chapter 15 – Bayesian Estimation
 - Chapter 16 – Model Selection
 - Chapter 17 – Introduction and Limited Fluctuation Credibility
 - Chapter 18 – Greatest Accuracy Credibility
 - Chapter 19 – Empirical Bayes Parameter Estimation
 - Chapter 20 – Simulation
- GRADING:** There will be 6 take-home assignments. The highest five will count for 25% of the grade. There will be 3 tests and a final. The lowest of the three tests will be dropped. The two tests will count for 45%. The final examination will count for the remaining 30%. I will also give ungraded quizzes.

This course is heavily oriented toward the Society of Actuaries (SOA) C/4 exam. This SOA exam also covers material which was taught in Math 653. During this course I will review many SOA exam-type questions which will be helpful to those planning to sit for the C exam.

The key to success in any mathematics course is in understanding the examples in the book and working the exercises at the end of every chapter. I will identify specific exercises that should be worked as we proceed through the course. You should

consolidate all of the worked exercises in a notebook to be used to study for tests and the final examination.

The Honor Code is in effect in this course. You may not give or receive help during tests or on the graded homeworks. I will discuss test procedures in more detail in class.

Proposed Schedule:

Math 654-001				
	Date	Teach	Review	Test
Class 1	1/22/2014	Intro		
Class 2	1/29/2014	Ch 10		
Class 3	2/5/2014	Ch 11		
Class 4	2/12/2014	Ch 12	Review	
Class 5	2/19/2014	Ch 13		Test 1
Class 6	2/26/2014	Ch 14		
Class 7	3/5/2014	Ch 15		
	3/12/2014	No Class		
Class 8	3/19/2014	Ch 16	Review	
Class 9	3/26/2014	Ch 16		Test 2
Class 10	4/2/2013	Ch 17		
Class 11	4/9/2014	Ch 17		
Class 12	4/16/2014	Ch 18	Review	
Class 13	4/23/2014	Ch 19		Test 3
Class 14	4/30/2014	Ch 20		
Final	5/7/2014	7:30 pm		