STAT 971
Probability Theory
Fall 2013

Classroom: Wednesday 4:30 – 7:10 p.m., Robinson A205

Instructor: William F. Rosenberger, Ph.D.
Professor and Chairman, Department of Statistics

Office: ENGR 1701, 703-993-3645
Office hours: By appointment: equigley@gmu.edu

Prerequisite: STAT 544: Masters-level Probability
MATH 315: Advanced Calculus

Textbook: Karr, Probability

Schedule: 13 lectures, midterm and final exams
Dr. Markaryan will substitute on October 9
No class on November 27
Last class December 4

Midterm exam: Wednesday, October 16

Final exam: Wednesday, December 11, 4:30 – 7:15 p.m.

Course description:
A rigorous treatment of probability theory for doctoral students. Probability measures, random variables, convergence concepts, conditioning martingales. A measure-theoretic treatment of probability, but not a course in measure theory. The course will include limited computation of probabilities, but that is primarily the purview of STAT 544.

Class requirements:

Lectures. Lectures are critical for the understanding of the material. The textbook is terse, and there will be no way to do well in the class without attending and understanding lecture materials. It is assumed that students will take careful notes in class.
Homework. Homework problems will be assigned weekly. Late homeworks will be accepted only under exceptional circumstances. It is expected that students will not collaborate on homework. There are a finite set of homework problems in probability theory, so it is likely that some solutions or steps will be found in other textbooks or other sources. On occasion, it may be necessary to reference other sources in your homework. Failure to reference such sources is considered plagiarism. It is a violation of the honors code to refer to a prior year’s student’s homework problems.

Exams. Exams will be in-class and closed book. One sheet of notes can be used.

Grading:

The course will consist of 13 lectures, a midterm exam, and a final exam.
Midterm Exam 35%
Final Exam 35%
Homework 30%

Textbook:

Karr is terse and many students don’t like it. I use it as a good reference because it covers all the important topics, and has some excellent homework problems. Some of his proofs are quite elegant. There are a number of typos in the book, however. Other books are available that students sometimes like better and can be used as a reference. These are ordered from simplest to most difficult.

Gut, Probability: A Graduate Course
Bhat, Modern Probability Theory (lots of errors)
Resnick, A Probability Path (lots of typos)
Laha and Rohatgi, Probability Theory
Durrett, Probability Theory and Examples
Chung, A Course in Probability
Billingsley, Probability and Measure

Academic integrity policy. By enrolling in this course, each student assumes the responsibilities of an active participant in GMU’s scholarly community in which everyone’s academic work and behavior are held to the highest standards of honesty. Cheating, fabrication, plagiarism, and helping others to commit these acts are all forms of academic dishonesty, and they are wrong. The GMU policy on academic conduct will be followed in this course.

Office of Disability Services. This office can work with the instructor to accommodate disabilities. Please notify them immediately if you require special accommodation.