The George Washington University
Department of Statistics

STAT-8257
Section 10

Fall 2011

Days: Tuesdays
Meeting Time: 6:10-8:40 p.m.
Classroom: 2020 K Street, Room 12

Instructor:
Hosam M. Mahmoud, Professor

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Office hours: 1:00-2:30 Friday

Teaching Assistant:
Zhang Tong, Ph.D.

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Office hours: 10:00-12:00 Thursday
Aim and Scope:

Rigorous modern measure-theoretic probability is introduced to provide a foundation for statistical inference. No prior knowledge of measure theory is assumed; the necessary concepts will be developed as necessary.

Prerequisites:

A first course in probability is expected to be in your background. It is assumed that everyone already knows all the basic distributions (Discrete: Bernoulli, Binomial, uniform, Poisson, etc., and continuous: uniform, exponential, normal, gamma, beta, etc.). For example, I expect everyone to know how to calculate $E[X]$, the expectation of $X$, for $X$ say a binomial $\text{Bin}(n, p)$ random variable.

Textbooks:

*Probability* by Alan Karr

Karr's book is a lucid coverage. We shall try to cover chapters 2 to 8. Still, you may find it helpful to keep at least one other text handy. Recommended texts are:


Chung is terse, to the point and has challenging exercises. Billingsley is more verbose and makes it a point to alternate frequently between measure theory and probability concepts.

Learning outcomes

As a result of completing this course, students will be able to:

1. Ask philosophical questions about probability theory and science.

2. Answer rigorous technical questions about probability.

3. Be at ease with several probabilistic modes of convergence.
Grading Policy:

It is essential that you work out problems. Weekly assignments will be handed out at the end of each class and will be returned at the beginning of the following class. Homework will constitute 80% of the grade. It is, of course, expected that you will work alone. I shall always be glad to drop you a hint if you stop by. There will be a final examination (of weight 20%).

Here is an example of what constitutes an A grade in this class. You score 95% or above: all homeworks are solid and well done. You get above 85% in the Final Examination. You can miss a couple of problems here and there and still get an A.

Please check Blackboard frequently (at least twice a week), for there will be announcements and material passed through it.

Academic Integrity

I support the GW Code of Academic Integrity. It states: “Academic dishonesty is defined as cheating of any kind, including misrepresenting one’s own work, taking credit for the work of others without crediting them and without appropriate authorization, and the fabrication of information.” For the remainder of the code, see:

http://www.gwu.edu/~ntegrity/code.html

Any case of the slightest hint of cheating will be prosecuted to the fullest extent of the university Academic Integrity Policy. You will receive an automatic F, and the case will be taken to the proper administrative channels.

Support for students outside the classroom

DISABILITY SUPPORT SERVICES (DSS)

Any student who may need an accommodation based on the potential impact of a disability should contact the Disability Support Services office at 202-994-8250 in the Marvin Center, Suite 242, to establish eligibility and to coordinate reasonable accommodations. For additional information please refer to:

http://gwired.gwu.edu/dss/

UNIVERSITY COUNSELING CENTER (UCC) 202-994-5300
The University Counseling Center (UCC) offers 24/7 assistance and referral to address students' personal, social, career, and study skills problems. Services for students include:

- crisis and emergency mental health consultations
- confidential assessment, counseling services (individual and small group), and referrals

See

http://gwired.gwu.edu/counsel/CounselingServices/AcademicSupportServices

Security

In the case of an emergency, if at all possible, the class should shelter in place. If the building that the class is in is affected, follow the evacuation procedures for the building. After evacuation, seek shelter at a predetermined rendezvous location.