TEXAS A&M UNIVERSITY

SYLLABUS

Fall 2009 **STAT 610-601** (Distribution Theory) TR 12:45 – 2:00, BLOC 150

Course description and prerequisites

A calculus-based introduction to probability theory, dealing (as the title suggests) with theory rather than applications. Intended for graduate students from various disciplines (including Statistics) who need to become familiar with advanced statistical models (beyond basic data analysis). Prerequisites: three semesters of calculus including theory of functions, continuity and differentiation, multiple integration, multivariate transformations and Jacobians, power series, Laplace transforms, limits, Taylor expansion.

Course objectives

By the end of the course, students should have the necessary theoretical background for the subsequent course on "Theory of Statistics – Statistical Inference" (STAT 611). In particular they should be familiar with the basic concepts of probability theory and know various models for probability distributions. They should be able to work with expectations of random variables and random vectors, to calculate distributions of transformations, and to know the basic limit concepts.

Instructor

Uschi Müller-Harknett
Office: BLOC 432; **Tel.:** (979) 862-2049; **Mail:** uschi@stat.tamu.edu
Office hours: TR 2:00-3:00, **F** 10:00-11:00, and by appointment.

Textbook and other resources

Your main resources for this course are our regular classes and the textbook: *Statistical Inference*, 2nd ed., by G. Casella and R.L. Berger, Duxbury.

Homework and additional materials will be posted on the web: http://www.stat.tamu.edu/~uschi

Grader

Subhadeep Mukhopadhyay
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Office hours: M 3:30-5:00, **W** 2:00-3:30

Course topics and exam dates

	Topic	Required reading
I.	**The Probability Measure**	Section 1.2 – 1.6
II.	**Working with Random Variables**	Section 2.1 - 2.3, 3.6, 4.7
III.	**Distribution Families**	Section 3.2 - 3.5
IV.	**Random Vectors**	Section 4.1 - 4.6
V	**Random Samples**	Section 5.3 - 5.5

Exams will be held in class on Thursday, October 1 and Thursday, November 5 (Midterms I and II) and on Wednesday, December 16, 8:00-10:00 (Final).

Course grade

Your grade will be based on your performance over the semester. **Homework** will make up 10% of the course grade, the two **midterm exams** will count for 25% each and the **final exam** for the remaining 40%. Your lowest homework score, and the lowest scoring answer at each exam, will be dropped.

If you have to miss one of the midterm exams due to illness or other circumstances beyond your control, please notify me or the Department of Statistics main office *before* the exam. If the absence is approved, the final exam score will be given additional weight to compensate.

The previous two paragraphs set out the **only** methods that will be used to determine course grades. If you feel that personal circumstances are affecting your academic performance, or are concerned that your work is not going to earn you the grade that you require for some purpose (e.g. getting/keeping an assistantship or a scholarship), please explore your options and take appropriate action in good time.

Other course information

Regular class attendance is assumed. I do not monitor attendance or give unannounced quizzes. However, syllabus details, including homework assignments and test dates, may be changed by in-class announcements. Anything that is missed because a student is not in class is the student's responsibility.

Americans with Disabilities Act (ADA)

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, in Cain Hall, Room B118, or call 845-1637. For additional information visit http://disability.tamu.edu

Academic integrity and fairness

Honor code: *"An Aggie does not lie, cheat, or steal, or tolerate those who do."*

I aim to treat you fairly. I expect you to treat me and your fellow students fairly. I take academic honesty seriously, and expect you to do so as well. You should be aware of the definitions of "academic misconduct" at http://aggiehonor.tamu.edu/Student Rules/definitions.html .