

ST 555
Mathematical Statistics II

Instructor: Dr. Subha Chakraborti (schakrab@cba.ua.edu)
Office: 345 Alston
Day/Time: Tuesday/Thursday 12:30-1:45
Bidgood 17

Place:

Required text: Introduction to Mathematical Statistics, by Hogg, McKean, and Craig, 6th edition.

Prerequisites: ST 554 or permission of the instructor

General Description/Objectives: This is the second course in a three-semester sequence of courses offered in Mathematical Statistics/Statistical Inference. The goal is to build upon the basic mathematical-statistical foundation laid in ST 554, to better understand what statistical inference procedures are, why they are needed, and the principles on the basis of which they are constructed. The techniques developed here will be useful in a variety of fields, settings, and applications.

Course Content: Material from chapters 4,5,6,7 and 8. Topics include some probability distributions such as the multinomial, t, F, and the contaminated normal, statistical estimation including point and interval estimation, sufficiency and uniformly minimum variance unbiased estimators, maximum likelihood inference, tests of hypotheses, including best tests. Additional topics could include material on Bayesian statistics, EM algorithm, Bootstrap and Monte Carlo methods, as time permits.

There will be reading assignments from the book and other sources. Students may be asked to present this material in class and write short reports to be turned in for credit. Research and library work will be involved.

Outcome: To be able to pursue advanced studies including research involving statistical inference.

Attendance: Required.

Exams and Assignments: There will be a midterm and a final exam; details will be provided in class. The final exam is comprehensive. Exams can have both a take home and an in-class component. Homework (including reading) will be assigned regularly. Expect some homework to be picked up and graded at random. When homework is due, you must be prepared and bring your solutions to class whether or not it is picked up. The solutions must be prepared in an orderly (typing is advised but not required) and delineated fashion. We reserve the right not to accept and grade a solution that is not prepared according to these standards. Students may be asked to present their solutions *in class*. Group study is strongly encouraged but any work for credit must be your own. Homework type questions are better answered during office hours. You are strongly encouraged to visit with the instructor. There will be several quizzes (typically unannounced) throughout the semester based on work up to that point in time (cumulative). No academic misconduct will be tolerated; the UA official academic misconduct policy will be followed in all cases.

Final Exam: Friday, May 11, 2007: 11:30-2:00

Note: You will have a week to ask any questions regarding a test, homework, or a quiz, from the day the grades are announced. After this period has passed, the matter would be considered closed and no further discussions related to the subject of grading will be entertained.

Grading: These components will weigh towards the final course grade as follows:

	<u>Homework & Quiz</u>	<u>Presentation/Report</u>	<u>Exam 1</u>	<u>Final</u>
Weight	10	10	40	40

Make-up Policy: No make-ups for quizzes or exams, no late homework will be accepted; **Office hours:** Will be announced in class (also by appointment if necessary); **Supplementary Reading:** Will be announced in class.

The instructor reserves the right to make changes to this syllabus as and when necessary. UA Honor Code will be followed. UA policies will be followed in the event of an emergency. To request disability accommodations, contact the Office of Disability Services at 348-4285.