

Mathematical Statistics, MA 486/586-1C Spring 2013

Class meets Mondays, Wednesdays, and Fridays 10:10–11am in Room UBOB 208

Instructor: Dr. Shannon Starr

Office: 478A Campbell Hall, phone (205) 934-8557

Office hours: Mondays and Wednesdays 11am-noon, or by appointment

Email: slstarr@uab.edu

Text: Online lecture notes of Dr. Nikolai Chernov.

Supplemental: Hogg & Tannis, *The Probability and Statistical Inference*, 6th 7th Ed.

Grading policy: (One of the two schedules that yields a better grade for you)

Homework	10% or	0%
Computer Project	10	10
Midterm I (February 11)	25	30
Midterm II (March 27)	25	30
Final (Friday, May 8, 8-10:30am)	30	30

Computer Projects: each student needs to do one computer project during the term. You can select a project from the list offered by the instructor or offer one of your own. But the project must be approved by the instructor before you do it. Only one student can work on each project! You can do projects in the mathematics computing lab that will be soon set up in the HH building. You can use MATLAB, Statistical Toolbox (every Mac computer in the lab has MATLAB installed). To use other software, you need the instructors permission. Projects can be submitted any time before the final exam, and may be resubmitted (more than once) after being graded, for full credit.

Homework: Problems will be assigned weekly on Mondays, unless announced otherwise. Homework will be due the next Monday after assignment. Corrected and graded homework will be returned in the next class meeting. One (lowest) homework score will be dropped. Half credit is given for late homework. You can use any software (including MATLAB) for doing homework problems

To 586 students: You are taking this course at a *graduate* level! You will be given extra, more difficult, assignments periodically. Unlike regular homework assignments, those extra assignments are *mandatory*. The extra assignments will make 15course grade, the rest will count for 85can be turned in any time before (or on) the final exam. The 586-level problems can be resubmitted after being graded, for full credit.

All tests in this course are **open-book** and **open-notes**. You may use a calculator, and you will actually need one.

Description: Basic sampling and data analysis, Simulation, Point estimation, Confidence Intervals, Sufficient statistics, Rao-Cramer bound, Tests for binomials, Tests for normals, Goodness-of-fit test, Contingency tables, Two factor analysis, Regression, Order statistics, Nonparametric methods: Wilcoxon test, Run test, Kolmogorov-Smirnov test

This description is tentative: some changes are possible.

Computer projects must be submitted in a presentable form. Include a print-out of the MATLAB code, a print-out of the computer output (including clear readable graphics), and a one-page report (hand-written or typed on a computer).

I am using the class as it was set up by Professor Chernov.

Therefore, you are encouraged to visit his website to see: Classnotes, homework assignments, the list of computer projects, past exams (some with answers) are available at www.math.uab.edu/chernov/teach.html (or just go to www.math.uab.edu, click on people, then chernov, then teaching). **Look at Spring 2008.**

Additionally all materials will be posted on Blackboard.

MATLAB has good on-line help. In addition, various MATLAB manuals are available online from many web sites. In particular, check out the official MathWorks (the producer of MATLAB) web page:

Help on general MATLAB commands can be found at

<http://www.mathworks.com/help/matlab/index.html>

Help on Statistical Toolbox commands can be found at

<http://www.mathworks.com/help/stats/index.html>

Another resource for basics of Matlab is the “Matlab Primer” by Kermit Sigmon

<http://www.math.ucsd.edu/~bdriver/21d-s99/matlab-primer.html>

If you happen to come across a particularly good MATLAB manual on the Internet, please share it with other students and the instructor.

Welcome to MA 486/586 and best of luck to you all.