

ARE 210: Introduction to Mathematical Statistics

Fall, 2010

Syllabus

Instructor: Jeremy Magruder

Office: 219 Giannini

e-mail: jmagruder@berkeley.edu

Office Hours: TBA.

Lectures: 3-4 MWF, 2311 Tolman. Subject to Student availability, the time and location of Friday lectures will change.

Midterm: In class, 10/27/2010

Final: 12/14/2010

Final Exam: Textbook: Hogg, Robert; McKean, Joseph; and Allen Craig. *Introduction to Mathematical Statistics*. 6th Ed.

Information about the course, including lecture notes, a copy of the syllabus, and problem sets, will be available on the course's bspace site.

This course will cover an introduction to probability theory and mathematical statistics. It is designed for the Ph.D. sequence in Agricultural and Resource Economics at the University of California, Berkeley; as such, the specific subject matter has been chosen to be complementary to the following econometrics sequence. The goal of this course is to develop a statistical vocabulary and intuition so as to facilitate econometric analysis. Students enrolled in other departments should have already completed coursework in Multivariate Calculus and Linear Algebra before enrolling in this course – this is a hard rather than a soft prerequisite.

Lectures will be three times weekly; Friday lectures are optional and will resemble “TA sections” with a discussion of past assignments.

Homeworks will be assigned regularly; they will be graded for completion and are worth 10% of your grade. The midterm is worth 40% of your grade and final is worth 50%; all grading will be done on a curve. The midterm will be in class, will focus on probability theory, and will be a standard exam. However, the final exam will be take-home and will focus on statistical inference. It is expected that the final is completed as individual work. No make-ups will be given.

Subject matter:

We will cover most of chapters 1-6 in HMC, as well as some discussion of chapter 8. This includes probability with one or many variables, set theory, expectations and conditional expectations, unbiasedness, consistency, and limiting distributions, statistical inference, bootstrapping, Maximum likelihood, and some discussion of additional tests.