

STAT 511 / MATH 511, Probability-- Fall 2011

Instructor:

David Hitchcock, associate professor of statistics

209A LeConte College

Phone: 777-5346

Email: hitchcock@stat.sc.edu

Course Web Page: <http://www.stat.sc.edu/~hitchcock/stat511.html>
(Also accessible via Blackboard)

Classes:

Meeting Times: MWF 9:05 a.m.- 9:55 a.m., LeConte College 210A

Office Hours:

MWF 10:10-11:00 a.m. and Tu-Th 10:30-11:30 a.m., or **please feel free** to make an appointment to see me at other times.

Textbook:

Mathematical Statistics with Applications, 7th edition. (2008), by Wackerly, D., Mendenhall, W., and Scheaffer, R.

Prerequisite: MATH 241 with a grade of C or higher.

Course Outline: Chapters 2-5 of the Wackerly et al. textbook. Topics covered include: Probability and independence; discrete and continuous random variables; joint, marginal, and conditional densities; moment generating functions; laws of large numbers; binomial, Poisson, gamma, univariate and bivariate normal distributions.

Learning Outcomes: By the end of the term successful students should be able to do the following:

- Understand the laws of probability, use counting rules, and understand independence.
- Recognize and understand common discrete and continuous probability distributions and their properties.
- Be able to use joint, marginal, and conditional densities and moment generating functions.
- Understand moments, expectation, variance, covariance, correlation, and conditional expectation.
- Derive theoretical results using algebra and calculus and apply these results to problems from a variety of applications.

Exams:

There will be three in-class exams (September 16, October 12, and November 16) and a final exam on December 5. Exams may not normally be made up, except in extreme circumstances, for which written documentation of excuse (doctor's note, funeral notice, etc.) is required. If you suspect you may miss an exam day, it is important to contact me well in advance of the test date.

Homework:

Homework assignments will be posted on the course web page and will be due each Wednesday. Certain problems will be graded on effort and correctness (1 point for making a decent effort at the problem, 1 point for a correct (or very nearly correct) solution). Other problems will be graded on effort (1 point for making a decent effort at the problem) and not for correctness, but you should try to understand how to solve all these problems before test time!

You must write your homework solutions NEATLY. You must present your solutions in the order that the problems are assigned. Handwritten solutions are fine, but if you type solutions, you should use either LaTeX or MS Word's Equation Editor, since other word processors (like Word without Equation Editor) are not designed for mathematical typing.

Each student's homework must be done independently. You may ask each other informal questions about the homework, but everyone is to do his/her own work. If homework is found to be copied, all students involved will receive a 0. Of course, you may always ask me questions about the homework. [To be clearer, students can ask each other informal ORAL questions about homework, but **cannot look at or copy each other's homework papers**. All submitted homework must be their own work.]

Graduate Students: Any students enrolling in the course for graduate credit must do a short project that will count for 5% of their course grade (with other grade components being rescaled proportionally). Any graduate students should please see me for details.

Grading:

The course grade will be based on homework average (15%), the three midterm exams (20% each), and a comprehensive final exam (25%). The lowest midterm exam score may be replaced by the final exam score (if the final exam score is higher). The overall course average will result in the following grades: 90-100 = A, 87-89 = B+, 80-86 = B, 77-79 = C+, 70-76 = C, 67-69 = D+, 60-66 = D, 59 and below = F.

Course Schedule: MWF, August 19 through December 2, except:

No class (Labor Day): September 5 (Monday)

No class (Fall Break): October 21 (Friday)

No class (Thanksgiving Break): November 23, 25 (Wednesday, Friday)

September 16: Exam 1

October 12: Exam 2

November 16: Exam 3

Monday, December 5 (9:00 a.m.): final exam