

STAT 511 / MATH 511, Probability-- Fall 2021

Instructor:

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Course Web Page: <https://people.stat.sc.edu/Hitchcock/stat511.html>

(Also accessible via Blackboard – go to course page in Blackboard

And then click on “Course Web Page” link on left of page)

Class Meeting Times: Mon-Wed-Fri, 1:10 pm - 2:00 pm, Close-Hipp 750 (CLHIPP 750)

Office Hours: Mon, Tues, Wed, Fri 10:45-11:45 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/Corequisite: 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 22, October 20, and November 19) and a final exam on Friday, December 10 at 12:30 p.m. 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: Weekly homework exercises will be assigned in class or on the course web page. These homework exercises will be collected and graded. You may work with other students in this class on these problems, but you should write your answers independently. Test problem(s) will often be similar in nature to assigned homework problems. Therefore you are personally responsible for knowing how to do each homework problem (even if you worked in a group on the homework). So it is important that you understand how to solve the homework problems! Please write your homework answers NEATLY on the pages provided (you can use other paper for preliminary scratch work, but neatly copy your final solution).

Graduate Students: Any students enrolling in the course for graduate credit must do extra assignments to be announced. Any graduate students should please see me for details.

Grading: The course grade will be based on homework average (12%), the three midterm exams (21% 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.

During Class: No cell phones may be on during class. Laptop computers must be put away during class time. Tablets (e.g., iPads) may be used *only for note-taking*, only if flat on the desk like a traditional notebook. Students may not use tablets to look at web pages, play games, etc.

Disabilities: Any student with a documented disability should contact the Student Disability Resource Center at 777-6142 to make arrangements for appropriate accommodations.

Exam Schedule:

September 22: Exam 1

October 20: Exam 2

November 19: Exam 3

Friday, December 10 (12:30 p.m.): final exam