Instructor: Joshua M. Tebbs
Class Time: 8:30-9:45 TTh (Section 001)
Class Location: LeConte 224
Office: LeConte 217
Office Hours: 10:00-12:00 TTh (I also have an "open door" policy).
email: `tebbs@stat.sc.edu`
www: `http://people.stat.sc.edu/tebbs/`

Course Overview: This course is an introduction to probability and statistics at the undergraduate level. Applications in engineering will be emphasized. This course does have a prerequisite of MATH 142 (or equivalent), and I will assume you have this level of mathematical knowledge. We will discuss the following topics:

- Probability and distributions (Chapters 2-5): Probability, discrete and continuous random variables and their distributions, mean, variance, percentiles, reliability analysis.
- Estimation and statistical inference (Chapters 6-9): Sampling distributions, one/two-sample inference for means, variances, and proportions, one-way analysis of variance.
- Regression (Chapters 10-11): Simple and multiple linear regression, estimation and prediction, confidence intervals and hypothesis tests, residual diagnostics.
- Factorial experiments (Chapter 12): 2^k factorial treatment structures, replicated and unreplicated analyses.

Course Materials: My course notes are available as a .pdf file on the course home page; they are also available at Printing Services in the Russell House (downstairs by the post office). You are expected to bring the course notes to class. We will follow them closely. The textbook for the course is optional:

- Montgomery, D. and Runger, G. (2018). *Applied Statistics and Probability for Engineers*, 7th Edition, Wiley.

Computing: We will use R. It is OK if you do not know R (or have never heard of it), because you will learn by example. The R package is available for free at `www.r-project.org`; the latest version is R 4.5.2 (2025-10-31, Part in a Rumble). The "An Introduction to R" manual available at this site (on the left, under "Manuals") is an excellent resource.

Homework: I will give 10 homework assignments during the semester−one assignment per chapter in the notes (Chapters 2-11 only). Homework must be written up neatly, stapled, and handed in to me during class. I do not accept homework through email. Each assignment will count towards your final grade. Late homework will not be accepted. Especially for later assignments, you will need to have access to a printer to print off your R code and output.

Examinations: We will have two in-class midterms:

- Exam 1: Tuesday, February 24 (Tentative: Chapters 1-5)

- Exam 2: Tuesday, April 7 (Tentative: Chapters 6-9).

We will have a cumulative final examination (covering Chapters 1-12) on Thursday, April 30, at 9:00am. All of my exams are closed-book and closed-notes. I do not give make-up examinations unless your absence is due to a university function, you have given me appropriate documentation, and you have discussed it with me in person at least one full week in advance.

Course Grades: Your course grade will be determined by your performance on homework (20 percent), the midterms (40 percent; 20 percent each) and the final exam (40 percent). Final course grades will be assigned according to a 90-80-70-60% schedule. I will use "+" grades at 88%, 78%, and 68%.

Classroom Management: I do not formally take attendance, but I expect you to be here. Students who attend my lectures regularly usually do the best in my courses. I do not use Blackboard to post course materials. Please turn off phones during class. I reserve the right to give in-class assignments or quizzes whose points may be used at my discretion.

Use of AI: All work submitted for this course must be your own. Although I do not forbid the use of generative AI tools (e.g., ChatGPT, etc.) when working on assignments, I strongly discourage you from using them. My assignments are designed to challenge you to develop creativity, critical thinking, and problem-solving skills. Using AI technology to complete my assignments will limit your capacity to develop these skills. Students who rely on this technology to do the homework will likely do poorly on my in-class examinations.

Additional remarks and expectations:

1. Students with documented disabilities who need special accommodations with exams or other aspects of the course should contact the Student Disability Resource Center. All examinations given through this office will run concurrently with the dates/times listed above.

2. Feel free to ask questions during class; your questions are an important part of this course. You can also ask me questions in office hours.

3. Attend every class and be on time. Being "on time" means being early (5-10 minutes).

4. Read/review appropriate sections of the notes before and after class. My course notes allow you to always know what is coming up.

5. Take my homework assignments seriously. These are designed to assess your understanding of the topics we discuss in class. They will also challenge you to think critically in new situations.

Finally: I am always happy to spend time with students answering questions about the course or about other topics. Please feel free to drop by my office and introduce yourself. I look forward to meeting all of you!