Instructor: Joshua M. Tebbs
Course: Statistics for Engineers (Section 003)
Class Time/Place: 1:15-2:30pm in 302 Gambrell
Prerequisite: MATH 142
Office: 215C LeConte (tel: 803-576-8765)
Office Hours: 9:30-11:00am MW
email: `tebbs@stat.sc.edu`
www: `http://people.stat.sc.edu/tebbs/`

Optional Textbook:

- Montgomery, D. and Runger, G. (2014). *Applied Statistics and Probability for Engineers*, 6th Edition, Wiley.

Course overview: This course is an introduction to probability and statistics at the undergraduate level. Applications in engineering will be heavily emphasized. We will follow my course notes and will discuss the following topics:

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

Homework: I plan to give 10 homework assignments during the semester−one assignment per chapter in the notes (Chapters 2-11 only). Homework must be written up neatly and stapled. The homework assignments are an important part of this course and are weighed heavily. Each will count towards your final grade (i.e., I do not "drop" any). Late homework will not be accepted.

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 3.4.3 (2017-11-30, Kite-Eating Tree). The "An Introduction to R" manual available at this site (on the left, under "Manuals") is an excellent resource.

Examinations: We will have two in-class midterm examinations:

- Exam 1: Tuesday, February 27 (Tentative: Chapters 1-5)
- Exam 2: Tuesday, April 10 (Tentative: Chapters 6-9).

We will have a cumulative final examination (covering Chapters 1-12) on Thursday, May 3, at 4:00pm. All of my exams are closed-book and closed-notes (and I do not allow formula sheets). Please also note that 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 at least one week in advance.

Grade Breakdown: Your course grade will be determined by your performance on homework (30 percent), the midterms (30 percent; 15 percent each) and the final exam (40 percent). Final course grades will be assigned according to a 90-80-70-60 schedule.

Some comments about STAT 509:

- Feel free to ask questions during class; your questions are an important part of this course. Very few students are able to master this material without keeping up on a regular basis. See me if you have a question about finding tutors.
- Working together on homework assignments is permitted and encouraged. However, each student must write up his/her solutions independently of others. "Copy-cat" type solutions will be identified by my course assistant and will be brought to my attention.
- Naturally, cheating on exams is an extremely serious offense and will be dealt with very harshly.
- Students with documented disabilities who need special accommodations with exams or other aspects of the course should contact the Office of Student Disability Services (ph: 803.777.6142). All examinations given through this office will run concurrently with the dates/times listed above.

My expectations for you:

1. Attend every class and be on time.
2. Read/review appropriate sections of the notes before class (this helps greatly).
3. Turn phones off during class.
4. Spend a lot of time on homework assignments (by doing them, you are essentially studying for exams).
5. Ask questions if you do not understand something or wish to know more.
6. Make it your goal to understand everything we do.

I have found that students who do most or all of these generally earn the best grades (not only in STAT 509 but in all of their courses).