STA 6166, Fall 2019
Statistical Methods in Research I
Section 3H44
MWF 4th Period (10:40-11:30) MAT 018

Instructor: Brenda Betancourt
Office: Griffin Floyd 220
e-mail: bbetancourt@ufl.edu

Office Hours: Monday, Wednesday, Friday 9:30am-10:30am

Teaching Assistant: Heejun Shin
e-mail: hshin1@ufl.edu

Course Objective: Train graduate students in the sciences to plan and conduct experiments and data analysis.

Textbook: *An Introduction to Statistical Methods & Data Analysis, 7th Ed.*
Author(s): R. Lyman Ott, Michael T. Longnecker, ISBN-13: 9780495017585

Other Materials: Course notes, datasets, assignments available on class website e-learning.

Software: You will need a computer for the homework assignments. The software used in class will be R. We will have a few labs on how to use R.

Homework and Exams:

- **Homework Assignments:** There will be approximately 4-5 assignments. You will have at least one week to hand them in from the time they are posted on the website. Assignments will total 100 points. Assignments are to be handed in during class on the date the assignment is due in paper format. Electronic submission of assignments will not be accepted. **Late homework will not be accepted and will receive a grade of 0**.
- **Exams:** There will be 3 in-class closed book exams. Each will be worth 100 points.

  Exam #1 .... Monday, September 23
  Exam #2 .... Monday, October 28
  Exam #3 .... Wednesday, December 4
- **Attendance/Exam Policies:** While attendance is not taken, students are expected to attend lectures and participate in class. Make-up exams will only be considered with documented medical event or conference attendance (graduate students). Early exams will be given under no circumstances. Turn off cell phones during classes.

Grading: Homework assignments and each exam will count as 25% of your course grade. Grades are not negotiable (unless a miscalculation is made in totaling points).

Letter grade distribution

	A 91 to 100	A- 87 to $<$ 91
B+ 84 to $<$ 87	B 80 to $<$ 84	B- 77 to $<$ 80
C+ 74 to $<$ 77	C 70 to $<$ 74	C- 67 to $<$ 70
D+ 64 to $<$ 67	D 60 to $<$ 64	D- 55 to $<$ 60
E $<$ 55		

Tentative schedule (may go through earlier topics more quickly):

Topic	**Textbook Section**
Introduction, Data Collection/Summaries, Populations/Samples	1.1-3.9
Probability, Random Variables, Graphical Representation	4.1-4.10
Sampling and Sampling Distributions, Estimating a Mean	4.11-4.16, 5.1-5.3
Statistical Tests for a Mean and Median	5.4-5.9
Comparing Two Population Means and Medians	6.1-6.6
Introduction to F, χ^2 Distributions, Inference on Variances	7.1-7.4
Introduction to Analysis of Variance and Experimental Design	8.1-8.3
1-Way ANOVA: Assumptions, Rank-Based Tests, Post-hoc tests	8.4-8.6, 9.1-9.5
Randomized Complete Block Design	15.1-15.5
Categorical Data Analysis: Estimating and Comparing Proportions	10.1-10.3
Contingency Tables, χ^2-Tests, Odds Ratios	10.4-10.8
Introduction to Linear Regression	11.1-11.5
Correlation and ANOVA intro to Multiple Regression	11.6, 12.1-12.2
Multiple Linear Regression	12.1-12.7