STA 6166 (WEB) - Statistical Methods in Research I
Spring 2015

Sections: Online using Canvas e-Learning
Instructor:

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Teaching Assistant: TBA

E-mail etiquette: Please put **"6166 web"** at the start of the subject line. Failure to do so will mean that your e-mail will not filtered and hence not answered. Use e-mails for asking policy questions etc. not homework problems.

Course Description: Prerequisite: STA 2023 (or equivalent)
Introduce basic data analysis tools and to train graduate students in statistical tools associated with hypothesis testing and linear models. The aim is to promote sound scientific research and experimentation based on good statistical thinking and practice. Class notes will be posted in addition to a series of podcast videos.

Students are encouraged to try more exercises from the book and other textbooks. The textbook used is meant as supplement to the course notes as there will be topics covered not in the textbook.

It is important to have reliable internet access at least once every 24 hour period (for a duration of 45 minutes). The course will be moving at a fast pace and it is expected that students put in the time necessary to keep up.

Course Materials Required:

1) *A First Course in Statistical Methods,* by Ott and Longnecker, 2004
(I only require you to have access to the book. It is however a necessary supplement to the notes.)
(ISBN-13: 978-0-534-40806-0, ISBN-10: 0-534-40806-0)

2) Statistical software (of your choosing) or at least calculator capable of calculating means and standard deviations

Videos: Lecture videos will be posted as mp4 files under "Files" on e-learning on a Monday, Wednesday and Friday at 10:00am

Office Hours:

- Q&A forum hosted on piazza.com/ufl/spring2015/sta6166 where the instructor, teaching assistant and students can all interact and see other students' questions. Students who help answer problems (without giving answers away) will be given extra credit at the discretion of the instructor and teaching assistant.

- Live office hours (Canvas Conference) will be provided weekly (2 by TA and 1 by instructor). Hours will be announced at start of semester. You can chat (type or audio) and use the boar for annotations by simply asking the instructor for permission to use the board.

Software:

You will need a computer for the homework assignments and to practise with. The main software used in class will be R (http://www.r-Project.Org/), although you can use any other software you wish that yield similar results. Minitab is a user-friendly alternative. For more information on software please see instructor's website http://www.stat.ufl.edu/~athienit

Assignments, Homework and Quizzes:

- Suggested homework will be assigned on an regular basis (after class/video or weekly) containing data analysis problems and/or book exercises from the week's material for the purpose of checking progress. Near the end of the week a subset of these problems will be labeled as a quiz (with small potential alterations) to be submitted within a 24 hour window. The format of the quizzes will not necessarily be the same every week. It may be multiple choice, fill in blank or upload a file (showing your work), so **read the instructions.** Uploaded files must be in pdf format. Dates/deadlines will be posted on e-learning and viewable on the calendar. It is important to practice the posted problems as they are posted and not wait to the last minute until the quiz is posted, as you will have limited time. Students are encouraged to try problems beyond just those that are listed. *The work/file submitted must be uniquely yours.* The lowest quiz will be dropped at the end of the semester.

- Three sets of multiple choice quizzes will be administered during the semester from a pool of multiple choice questions. They consist of 10 questions and duration is 40 minutes.
  - MC Quiz 1: February 6th
  - MC Quiz 2: March 13th
  - MC Quiz 3: April 29th

- There will be 3 assignments that have to be turned it (typed and/or handwritten). These assignments will consist of data problems and some concept questions and students are NOT allowed to collaborate. The tentative dates that the assignments will be posted are:
  - Assignment 1: February 6th (2 business days to complete)
  - Assignment 2: March 13th (2 business days to complete)
  - Assignment 3: April 20th due April 24th

  Note the first 2 are on a Friday.

You are responsible for submitting your work in a timely ΠΠΟΠΠeΓ and checking whether it was successfully submitted, i.e. received on the E-learning system. Please double check. Late submissions will not be accepted.

You must Show yOUl' WOl'k. the steps and methodology taken, to obtain your answer/conclusion.

Grades:

Assignments (1, 2 and 3) :	15% (each), 45% (total)
Multiple choice quiz sets (1, 2 and 3):	10% (each), 30% (total)
Free answer homework/quizzes:	25% (total, lowest quiz dropped)

Note:

- Scores may be curved.
- Contact TA with questions regarding grading for homework.

Grading Scale:

The grading scale will be as follows:

A:	91-100%,	A-:	87-<91%,		
B+:	84- <87%,	B:	80- <84%,	B-:	77- <80%,
C+:	74- <77%,	C:	70- <74%,	C-:	67- <70%,
D+:	64- <67%,	D:	56- <64%,		
E:	< 55%.				

Note: Final grade (in % points) may be a decimal figure, however, there will be no rounding up or down of the grade.

Course Policies:

Academic Dishonesty: I adhere to the University of Florida rules and guidelines for handling instances of academic dishonesty. Please refer to the Office of Students Services for detailed information about the current policies.

Instructor's Honor Code: We the members of the University of Florida community pledge tohold ourselves and our peers to the highest standards of honesty and integrity.

Grading: Grades will be changed only when an error has been made by the instructor.

Incomplete: Incomplètes are only assigned when extraordinary circumstances, arising after the date for dropping off the course, prevent the student from completing the course requirements. The student must be currently passing the course and discuss the circumstances with the instructor before the final exam takes place. Having a failing grade in the course is not a valid reason for requesting an incomplete.

Getting Help: Students may ask questions through the various media the class provides. A list of private tutors (if needed) may be obtained from Griffin Floyd 103.

Students with disabilities: Students requesting extra accommodation must first register with the Dean of Students office. The Dean of Students will provide documentation to the students who must then provide this documentation to the Instructor when requesting information.

Privacy Policies: Student records are confidential. Only information designated "UF directory information" may be released without your written consent. UF views each student as the primary contact for all communication. If your parents contact me about your grade, attendance or other information that is not "UF directory information". I will ask them to contact you.

Complaints: Should you have any complaints with your experience in this course please visit http://www.distance.ufl.edu/student-complaints to submit a complaint.

Tentative schedule:

Subjects	Sections
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	4.11-4.13,5.1-5.3
Statistical Test for a Mean	5.4-5.7
Comparing Two Population Means and Medians	6.1-6.6
Categorical Data Analysis: Estimating and Comparing Proportions	10.1-10.3
Introduction to *F,* chi-square Distributions, Inference on Variances	7.1-7.4
Contingency Tables, chi-square-Tests, Odds Ratios	10.5-10.6
Introduction to Linear Regression	11.1-11.5
Multiple Linear Regression	12
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
Randomized Complete Block Design	9.1-9.2

The instructor reserves the right to update any parts of this syllabus as necessary. Students will be notified of any changes.