

STA 6166 - Statistical Methods in Research I

Spring 2015

Sections 13F8: MWF 4 (10:40 -11:30) in LIT 121

Instructor:

Demetris Athienitis ([athienit\(5\)ufl.edu](mailto:athienit(5)ufl.edu)).

Office: Griffin Floyd 116B

Phone: 352-273-2972

Office Hours: Posted on class website and subject to change

Teaching Assistant: See website

Class Website: Canvas

E-mail etiquette: Please put "6166" at the start of the subject line. Failure to do so will mean that your e-mail will not be filtered and hence not answered.

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 online.

Due to time limitations (limited class time), students are encouraged to try more exercises from the book and other textbooks.

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 have access to this book)
(ISBN-13: 978-0-534-40806-0, ISBN-10: 0-534-40806-0)

- 2) Calculator capable of calculating means and standard deviations

Software:

You will need a computer for the homework assignments and practise. 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.

Homework and Quizzes:

There will be suggested homework assigned on a weekly basis containing data analysis problems and/or book exercises. Information will be provided on the class website. From the suggested homework, random question(s) will be chosen as an in-class (at any time during the class) or online quiz on Canvas (of E-Learning). *The work submitted must be uniquely yours. The lowest quiz grade at the end of the semester will be dropped.*

Exams: There will be two (in class) exams, given on the dates listed below.

- Exam 1: February 6th
- Exam 2: March 13th

where each exam is composed of multiple choice questions (approximately 60%) and some open-ended questions.

There will also be at the end of the semester

- Final project: April 24th (Work submitted must be uniquely yours)
- Multiple choice exam: April 29th

If a student is unable to take an exam at the scheduled time, they must notify the instructor as early as possible. If an emergency situation precludes an advance arrangement, you should let the instructor know within 24 hours of the missed exam. Each case will be reviewed individually. You will be required to provide official documentation to be eligible for make-up examination.

You are responsible for submitting your work in a timely ΠΠΟΠΠεΓ. Late submissions will not be accepted. You must SHOW YOUR WORK, the steps and methodology taken, to obtain your answer/conclusion.

Grades:

Exams (1, 2) are worth: 45% (20% worst score + 25% best score)
Final Project: 20%
Multiple choice exam/Exam 3 : **10%**
Homework/Quizzes: 25%.

Note: Scores may be curved.

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 to hold 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: Incompletes 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 during the lectures (preferred) or the office hours. The TAs will answer questions during office hours. 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.

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.