STA 6166, Fall 2009
Statistical Methods in Research I
Section 5842 – MWF Period 2 @ Matherly 16

Instructor: Dr. Larry Winner
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Office Hours: M 10:00-11:00, Tu 8:30-9:30, W 11:00-12:00

TA: TBA

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

Textbook: Ott and Longnecker, 2004. *A First Course in Statistical Methods*, Duxbury.

Other Materials: Datasets, assignments, and overheads available on class website.

Web Site: http://www.stat.ufl.edu/~winner/

Homework and Exams:

1. **Homework Assignments:** There will be 5 assignments. You will have one week to hand them in from the time they are posted on the website. Each assignment will be worth 20 points.

2. **Exams:** There will be 3 in-class exams. Each will be worth 100 points.

3. **Grading:** Grades will be based on the total of 400 points from homework and exams. Grades are not negotiable (unless a mis-calculation is made in totaling points)

4. **Exams are Closed Book**. You may write formulas/notes on back of tables that will be available on class website.

5. **Missed Exams**: Any exams that will be missed must be confirmed as soon as possible, **before** the time of the exam.

6. **Late Homework**: Will not be accepted and will receive a grade of 0. All homework must be handed in by hard copy. No e-mail will be accepted.

Prerequisites and Computing:

1. STA 6166 has a pre-requisite of an introductory statistical course. The course begins with (very brief) introductory material and some motivated students take it successfully as a first course.

2. You will need a computer for homework assignments. Examples will make use of EXCEL, SAS, SPSS, R and JMP; but you may use any program you choose. Datasets will be posted on web in column formatted ASCII format and can be easily imported into any of these programs.

Tentative Schedule (May go through earlier topics more quickly):

Lectures	Topics	Sections
1-2	Introduction, Data Collection/Summaries, Populations/Samples	1.1-3.9
3-5	Probability, Random Variables, Graphical Representation	4.1-4.10
6-7	Sampling and Sampling Distributions, Estimating a Mean	4.11-4.13,5.1-5.3
8-9	Statistical Test for a Mean	5.4-5.7
11-13	Comparing Two Population Means and Medians	6.1-6.6
14-16	Introduction to F, χ^2 Distributions, Inference on Variances	7.1-7.4
17-18	Introduction to Analysis of Variance and Experimental Design	8.1-8.3
19-20	1-Way ANOVA: Assumptions, Rank-Based Tests, Post-hoc tests	8.4-8.6
22-23	Randomized Complete Block Design	9.1-9.2
24-26	Latin Square Design, 2-Factor ANOVA	9.3-9.6
27-28	Categorical Data Analysis: Estimating and Comparing Proportions	10.1-10.3
29-31	Contingency Tables, χ^2-Tests, Odds Ratios	10.5-10.6
33-34	Introduction to Linear Regression	11.1-11.5
35-36	Correlation and ANOVA intro to Multiple Regression	11.7, 12.1-12.2
37-39	Multiple Linear Regression	12.1-12.5
40	Logistic Regression	12.6

Exam Dates:

- **Exam 1: September 30**
- **Exam 2: November 4**
- **Exam 3: December 9**

University Policies:

Academic Dishonesty: All members of the University Community share the responsibility to challenge and make known acts of apparent academic dishonesty. Acts of academic dishonesty will not be tolerated and will be referred to the Student Honor Council.

Academic Accomodations: If you have a documented disability and wish to discuss academic accomodations with me, please contact me as soon as possible.