

STA 6167
Statistical Methods in Research II
Fall 2012

COURSE OBJECTIVE To train graduate students in basic statistical tools with the aim of promoting sound scientific research based on good statistical thinking and practice.

PREREQUISITE STA 6166

INSTRUCTOR Ruth M Hummel
Office: 409 McCarty C
E-mail: rhummel@ufl.edu

CLASS WEBSITE <http://lss.at.ufl.edu/> -- Login to e-Learning in Sakai using your GatorLink username and password to access the STA 6167 page.

The **class Sakai website** will be used to distribute information, handouts, etc. to everyone in class. Be sure your campus email address is current because you are accountable for any information posted in this manner.

RECOMMENDED (NOT REQUIRED) TEXTBOOKS/RESOURCES

Cobb, George W. 1998. *Introduction to design and analysis of experiments*. ISBN 0-387-94607-1.

Oehlert, G. 2003. *A first course in design and analysis of experiments*. Available online at <http://www.stat.umn.edu/~gary/Book.html>.

Additional handouts as needed. These will be posted on Sakai.

HOMEWORK Homework will be assigned weekly. While you may consult with classmates, TAs, and the instructor, the work you turn in must be your own. This means that **it is considered cheating for you to work together on an assignment**. Attempt each problem on your own and **to the best of your ability** first. Only then should you request help from a classmate, TA, or the instructor.

Late **homework and exams** will not be accepted and will be recorded as a 0 grade. If you are going to miss a class or have a scheduling conflict, return the assignment before the due date! **Late assignments will never be accepted.**

In total, homework assignments will be worth 80% of your grade, and the lowest two scores will be dropped.

PARTICIPATION A portion of your grade will come from participation-related activities. These will generally be assignments requiring you to post comments on the

course discussion board, on Sakai. More information will be provided as these activities are assigned.

GRADING

Homework 80%; Participation 20%

>93%	A	90-93%	A-		
87-90%	B+	83-87%	B	80-83%	B-
77-80%	C+	73-77%	C	70-73%	C-
67-70%	D+	63-67%	D	60-63%	D-
<60%	E				

SOFTWARE

You will need a computer for the homework assignments. The main software used will be **SAS 9.2** and **JMP Pro 9**. You will need access to at least one of these software packages. It is **YOUR RESPONSIBILITY** to make sure that you have access to a statistical package.

JMP is available for free for all UF students and faculty, courtesy of the IFAS Statistics department, and can be used on both a Mac and a PC platform (using different installation versions). I will provide instructions on acquiring JMP during the first week of classes.

You may purchase a student version of SAS for your personal computer (you must install it on a windows-based platform – SAS does not work with Mac) from the UF bookstore. You can also access SAS on your computer (Mac or PC) through the SAS OnDemand website (http://www.sas.com/govedu/edu/programs/od_academics.html). Go to (<https://support.sas.com/ctx3/sodareg/index.html?execution=e2s1>) to create a student account, specifying that you are using it for STA 6166 at UF.

Both SAS and JMP are also installed in the IFAS lab (2103 McCarty Hall B).

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 (including giving or receiving unauthorized aid on an assignment, plagiarizing work, or distributing restricted materials) will not be tolerated and will be referred to the Student Honor Council.

The 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.* On all work submitted for credit by students at the university, the following pledge is either required or implied: *"On my honor, I have neither given nor received unauthorized aid in doing this assignment."*

Academic Accommodations: If you have a documented disability and wish to discuss academic accommodations, please CONTACT ME as soon as possible. Students requesting classroom accommodation must register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation. Until I receive this documentation, I CANNOT provide any accommodations.

TENTATIVE SCHEDULE OF TOPICS
Intro to Statistical Modeling and Review of Basic Statistics
Intro to Experimental Design
ANOVA, residuals, and transformations
Nonparametric options for ANOVA, and multiple comparisons
Factorial treatment structure in ANOVA, interactions
Including the design of the experiment: mixed effects, CRD, and RCBD
Latin Squares and Crossover designs
BIBD and Split-Plot
Repeated Measures
Review
Regression
Regression in Designed Experiments (ANCOVA)
Generalized Linear Models and Distributions
Logistic Regression
Poisson Regression
Review