

**ERSH 6300**  
**Applied Statistical Methods in Education**  
**Fall 2007**

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**Course Description**

From Graduate Bulletin: “Techniques for describing and summarizing data for educational research studies. Applications of the standard normal distribution and the use and interpretation of standard scores. Inferential statistics for one and two population studies including means, proportions, and correlations. **Prerequisite: ERSH4200/6200.**

The overall goal of the course is to present an introduction to statistics that emphasizes working with data and statistical ideas. The content of the course is divided into three parts.

1. Understanding the data
2. Understanding the inference
3. Application topics in inference

In order to achieve the overall goal, the course will involve readings from 2 textbooks, a series of assignments to reinforce the key concepts, a set of computer exercises, and three examinations.

**Textbooks**

Moore, D. S. (2007). *The basic practice of statistics* (4<sup>th</sup>. Edition). New York: W. H. Freeman and company.

Huck, S. W. (2003). *Reading statistics and research*. (4<sup>th</sup>. Edition). Boston: Allyn and Bacon.

**Suggested Supplementary Texts**

Green, S. B. & Salkind, N. J. (2005) *Using SPSS for Windows and Macintosh: Analyzing and Understanding Data*. (4<sup>th</sup>. Edition) Upper Saddle River, NJ: Pearson Prentice Hall.

American Psychological Association (2001). Publication manual of the American Psychological Association (5<sup>th</sup> ed.). Washington, DC: Author.

## Assignments and Examinations

The text has exercises at the end of each chapter. The answers to the problems will be given out so students can check their own work. It is vital to your success in this course that you spend time working on these assignments. Additional problems may be given out as review for tests.

In addition, computer assignments will be assigned during the semester. The computers in the classroom have SPSS on them and students can work after class if need be on these assignments. The CD that was included with the text has a statistical program called Crunchit that can also be used for statistical analysis.

There will be 3 exams during the semester including 2 take-home midterms and a final given during exam week. While examinations are not cumulative, the nature of the material is. So be aware that you may need to use previous knowledge to answer the second midterm and the final. Students can correct the first 2 exams to get back half the points missed.

**Grading Policy**

- Midterm1 - 25%
- Midterm2 – 25%
- Lab Assignments – 25%
- Final – 25%

Grades will be assigned as follows:

- A (above 95%)
- A- (between 90% and 95%)
- B+ (between 85% and 90%)
- B (between 80% and 85%)
- B- (between 75% and 85%)
- C (below 75%)

## Academic Honesty

Students are responsible for being familiar with UGA's policy on academic honesty as published in the booklet, *A Culture of Honesty: Policy on Academic Honesty* (available online at <http://www.uga.edu/ovpi/honesty/acadhon.htm>). The UGA policy and regulations will be followed in this class.

## Advice

### Come to class on time

I know that some of you come from long distances and perhaps have school duties that make it difficult for you to get here on time. Please do your best to do so. For some of you this may be a challenging class so being here as much as possible will be extra important. I will be available after class to answer questions that may come up. If additional help is needed I am available by appointment at my UGA office.

**Do I have to be good at math to be good at statistics?**

No, that’s why we have calculators and statistical computer packages like SPSS and Crunchit (included in the disc that comes with your text). You will need a calculator with some built-in statistical functions (means, standard deviations, correlations, regression lines). Look for a calculator that claims to do “two-variable statistics” or mentions “regression”.

The statistics we learn in this class do not require an understanding of advanced math, but learning this material is similar to learning math in that it must be practiced. Repeated exposure is important if not essential; therefore, it would be best if students read the text repeatedly and work the exercises.

**It’s all Greek to me! ☺**

Statistics uses a lot of symbols like Greek letters and subscripts, which makes it similar to learning a foreign language. Think of the symbols as a foreign language vocabulary that you must learn in order to understand the equations. A good first step in understanding a statistical problem is to read it out loud.

**Once I learn something can I pleeeeee ☺ be done with it?**

No. This course is progressive with topics building on each one so it’s important that you get your confusions addressed as we go or they will serve as barriers to future learning.

**The chapters below unless marked with an (H) all come from the Moore textbook. These assignments are tentative and may be changed.**

**ASSIGNMENTS**

		Chapters
August 21	Displaying Distributions with Graphs Introduction to SPSS and Crunchit	1
	Describing Distributions with Numbers	2 (H) 2
28	Normal Distributions Introduction to SPSS and Crunchit <i>SPSS Assignment 1</i>	3
Sept. 4	Scatterplots and Correlation Regression <i>SPSS Assignment 2</i>	4 (H) 3 5 (H) p. 565- 572
Sept. 11	Producing Data: Sampling Producing Data: Experiments <i>SPSS Assignment 3</i> <b>Midterm 1 Given Out</b>	8 (H) 5 9 <b>1 - 9</b>

Sept.	18	Introducing Probability <b>Midterm Due</b>	10 (H) 6
	25	Sampling Distributions General Rules of Probability	11 12
Oct.	2	Binomial Distributions Confidence Intervals: The Basic	13 14 (H) 6, 7
	9	Test of Significance: The Basic Inference in Practice	15 16 (H) 8
	16	From Exploration to Inference: Part II Review <b>Midterm 2 Given Out</b>	17 <b>10 – 17</b>
	23	Inference About a Population Mean <b>Midterm Due</b>	18 (H) 11
	30	Two-Sample Problems Inference about a Population Mean <i>SPSS Assignment 4</i> <b>SPSS Assignments 1-3 Due</b>	19 20
Nov.	6	Comparing Two Proportions Two-Way Tables <i>SPSS Assignment 5</i>	21 6
	13	Two Categorical Variables: The Chi-Square Test Inference for Regression <i>SPSS Assignment 6</i>	23 24 (H) 12
	20	One-Way Analysis of Variance <b>SPSS Assignments 4-6 Due</b>	25
	27	Review	

