

ERSH 6300: Applied Statistical Methods in Education
Spring Semester 2004, TR 5:00P-6:15P

Instructor: Gregory Palardy, Ph. D. gpalardy@uga.edu, 325D Aderhold hall

Location: 1057-C114

Office hours: TR 6:15-7P, M 2-3P, W 4:30-5:30P

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: ERSH 4200/6200"

The course will present an introduction to statistics that emphasizes working with data and statistical concepts. The content of the course and the textbook (Moore, 2003) are divided into three parts:

1. Understanding data
2. Understanding statistical inference
3. Applications of statistical inferences

The course requirements include daily readings and homework problems from the textbook, computer exercises, and three examinations.

Textbooks

Required

Moore, D. S. (2003). *The Basic Practice of Statistics* (3rd ed.). New York: W. H. Freeman and Company.

Optional

Green, S. B., & Salkind, N. J. (2003). *Using SPSS for Windows and Macintosh: Analyzing and Understanding Data* (3rd ed.). Upper Saddle River, NJ: Prentice Hall.

Huck, S.W. (2003). *Reading Statistics and Research* (4th ed.). New York: Longman.

Stanovich, K. E. (2003). *How to Think Straight About Psychology* (7th ed.). Allyn & Bacon.

Comments on Learning Statistics: You may agree that statistics can be difficult. Approaching this course with the following orientation will facilitate your learning.

- **It's not math, but it's like math.** The statistics we learn in this class do not require an understanding of advance math. But learning this material is similar to learning mathematics in that it must be practiced and repeated exposure is important if not essential. One has to read the text repeatedly, work on exercises, analyze different problems, and experience different analytic situations in order to absorb the information. *So, don't wait until the last minute to study for tests or work on assignments!*

- **It's similar to learning a foreign language.** Statistics uses a lot of symbols like Greek letters, subscripts, and sometimes superscripts, 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 equation is to read it aloud.
- **It's progressive.** Topics tend to build on each other. So make sure your confusions get addressed as we go or they will serve as barriers to future learning.

Assignments, Examinations, and Grades

Homework problems and questions as well as computer assignment will be given regularly and each student is expected to complete the exercises independently. All assignments must be completed and turned in on time. All work should be well organized and neat. It is vital to your success in this course that you spend time working on these assignments. Only a subset of the assigned problems will be collected, however. Those problems will be collected only three times during the semester, before each exam.

There will be three exams during the semester on February 17th (5:00-6:15 pm) and on March 29th (5:00-6:15 pm), and a final examination on May 5th (Thursday, 5:00-8:00 pm). The examinations will be administered in class and exam items may include computations, short answer, and multiple choice questions derived from homework problems and in-class material. While examinations are not cumulative, the nature of the material is. So be aware that while I won't specifically ask questions on material from previous tests, you may need to make use of that information to answer questions on the present test. For each exam you may use one 8.5 x 11 "cheat sheet" with notes and formulas on it. Grades will be based on completion of the homework assignments (20%), on computer exercises (20%), and on the three examinations (20% each). Borderline grades will be determined based on class participation.

The grading scale is:

A = Excellent = above 90%

B = Good = between 80% and 90%

C = Fair = between 70% and 80%

D = Poor = between 60% and 70%

F = Failing = below 60%

Attendance

Attendance is extremely important. In the past, students who have missed class experienced difficulty. When a student misses class, he or she misses an opportunity to check understanding of the concepts being developed in the course and to ask appropriate questions. For these reasons, attendance is required. Students who accumulate more than 3 absences during the semester may be dropped from the class.

Academic Honesty

It is the student's responsibility to be familiar with the University of Georgia's policy on academic honesty as published in the booklet, *A Culture of Honesty: Policy on Academic Honesty*. This document is available on-line at [<http://www.uga.edu/ovpi/>]. Click on the *Academic Honesty* to view it. The University policy and regulations regarding academic honesty will be followed in this class.

Course Meeting Schedule

January 11:	Introduction and Chapter 1. Picturing Distributions with Graphs
January 13:	Computer Lab 1, Intro to SPSS
January 18:	Chapter 2. Describing Distributions with Numbers
January 20:	Computer Lab 2, Descriptive Statistics
January 25:	Chapter 3. Normal Distributions
January 27:	Chapter 4. Scatterplots and Correlation
February 1:	Chapter 5. Regression
February 3:	Computer Lab 3, Scatterplots, Correlations, and Regression
February 8:	Chapter 7. Producing Data: Sampling
February 10:	Catch up day
February 15:	Midterm 1 Review
February 17:	Midterm 1: Chapters 1-5, 7
February 22:	Chapter 8. Producing Data: Experiments
February 24:	Chapter 9. Introducing Probability
March 1:	Chapter 10. Sampling Distributions
March 3:	Chapter 13. Confidence Intervals
March 8:	Chapter 14. Test of Significance
March 10:	Chapter 15. Inference in Practice
March 15:	Spring Break (no class)
March 17:	Spring Break (no class)
March 22:	Catch up day
March 24:	Midterm 1 Review
March 29:	Midterm 2, Chapters 8, 9, 10, 13-15
March 31:	Chapter 16. Inference About One Mean
April 5:	Chapter 17. Comparing Two Means
April 7:	Computer Lab 4
April 12:	AERA Conference (No Class)
April 14:	AERA Conference (No Class)
April 19:	Chapter 18. Inference About One Proportion
April 21:	Computer Lab 5
April 26:	Chapter 19. Comparing Two Proportions
April 28:	Final Review
May 5th, 5pm	Final Exam: Chapters 16-19

Note: This schedule may change depending on how we progress

On computer lab days we will meet in room 618 of Aderhold Hall.

