ERM 617: Statistical Methods in Education

Fall 2006
Tuesday 4:00-6:50 p.m.
334 Curry Building

Professor: Micheline Chalhoub-Deville
Office: 217 Curry
Phone: 336-334-3472
Email: chalhoub-deville@uncg.edu
Office Hours: Following class and by appointment

ERM Dept: 206 Curry Building
Phone: 336-334-3471

Notes

- I would like to hear your suggestions for how to improve the course to serve the diverse backgrounds and perspectives of all participants in this class and to make sure that participants' learning needs are addressed.

- UNCG seeks to comply with the Americans with Disability Act (ADA). Let me know (see me after class or during my office hours) if you have any disability that may necessitate modification of seating, assessment, or other class requirements. Be aware that students requesting accommodations based on disability must be registered with the office of Disability Services Located at 208 Elliott University Center: 334-5440 V/TTY.

- The UNCG Academic Integrity Policy addresses issues of plagiarism or cheating. The policy indicates that such academic misconduct may result in reduction of grade and/or other penalties.

Course Overview

This is an introductory course that covers statistical approaches appropriate for educational and other social sciences research. The course is intended to provide you with a conceptual understanding of basic statistical procedures used to understand and perform data analyses. At the end of the course, you will be expected to understand how, when, and why to apply the procedures covered. The course will also introduce software that will allow you to conduct a range of statistical analyses.

Course Objectives

Students should be able to:

- Appropriately use statistical expressions
- Create and interpret graphs
- Conduct statistical analyses with software
- Interpret statistical methodology
- Conceptualize the designing and testing of research hypotheses

Texts

Required Text

Howell, David C. (2004). Fundamental Statistics for the Behavioral Sciences (5th Ed.). Belmont, CA: Brooks/Cole.

Recommended Texts

Vogt, W. P. (1999). Dictionary of Statistics & Methodolgy (2nd Ed.). Thousand Oaks, CA: Sage Publications, Inc.

George, D. & Mallery, P. (2003). SPSS for Windows Step by Step Guide (4th Ed.). New York: Pearson Education, Inc.

Course Requirements

Attendance

Attendance and participation in classroom activities and discussions are required. Participants are expected to contribute actively to the course through discussion, comments, and reports. Should you miss a class, it is your responsibility to find out what was covered and to come prepared for the next session. Make sure to ask a class participant to collect copies of the handouts for you during your absence. **If you miss more than 3 class sessions, you will lose 10% of your final grade.**

Homework

Most homework will come directly from the Howell textbook—make sure you have the current edition. **Homework submitted more than two days late *will not be accepted* and you will receive zero credit for that homework**. Arrangements to turn in late work must be made ***prior*** to the due date.

I encourage you to work on homework assignments in groups (2 or 3 individuals per group). Submit your homework as a group. Make sure to write the names of group members on the front page of the homework. Every member in the group is equally responsible for the quality of the homework and for turning it on time. Group members receive the same grade on homework submitted.

Show all work on homework that you submit. Work must be neat and legible. Make sure that your final answer is clearly indicated (e.g., highlight or circle your final answer). Copies of the output should be provided with any work done on the computer.

Exams

Two exams will be given. These exams, the midterm and final, will not be cumulative. The **midterm** will be entirely **in-class**. **If you are not present on the day when the midterm is administered, you will receive a zero.** Only students with prearranged absences will be given the opportunity to make-up a missed midterm. The **final** will be **take-home**. Students will be responsible for all material covered during class lectures or in assigned readings. There will be several opportunities to review the material before each exam. The UNCG Academic Integrity Policy will apply for all examinations. **If the take-home final is not submitted by the set deadline, you will receive a zero**.

Calculators

You will need a hand calculator during this course. You do not need anything fancy. Any standard scientific calculator (not a graphic calculator) should do.

Computers and Software

We will make limited use of the *Statistical Package for the Social Sciences* (SPSS). Purchasing the software or owning your own computer is not required. SPSS is available in most UNCG computer labs. The IRC website (http://www.uncg.edu/irc/research/spss/) has information on licensing a personal copy at an affordable rate. The "Base module" is sufficient for all analyses covered in this class.

Grading

Homework is $^1/_3$ of your course grade. The midterm and final exams are each worth $^1/_3$ of your course grade.

Home Work	100 pts
Midterm	100 pts
Final	100 pts

Grades will be assigned based on the following formula:

Total Points	Grade	Total Points	Grade
270-300	A	210-224	B-
255-269	A-	180-209	C
240-254	B+	000-179	F
225-239	B		

General Expectations

We will cover roughly one chapter per class meeting. Your attendance at each lecture is expected. You are also expected to do the assigned reading *before* class. Reading in statistics textbooks can be dense. Give yourself ample time to read and think about the material.

I recommend that you develop study groups. Working through difficult concepts with others is one of the best ways to develop a good understanding of statistics. To this end, I encourage you to work together on homework assignments.

ASK QUESTIONS DURING CLASS. Be confident that if you do not understand a concept, at least one of your classmates needs clarification too. Help me do a better job of teaching by letting me know when I need to keep addressing a topic.

INCOMPLETES: Incompletes will be granted only under exceptional circumstances that are beyond your control. Requests for incomplete, including detailed explanations of your circumstances, must be submitted ***in writing***.

Topics and Readings

Week[1]	Subject	Chapter(s)
August 15	Syllabus and Intro to Statistics	1
August 22	Basic Concepts	2
August 29	Displaying Data, Exploratory Data Analysis	3
September 5	Central Tendency; Variability	4 & 5
September 12	The Normal Distribution	6
September 19	Probability; Sampling Distributions and Hypothesis Testing	7 & 8
September 26	Finish Hypothesis Testing and review for the midterm	**
October 3	**Midterm**	**
October 10	**No Class –Fall Break**	**
October 17	Correlations	9
October 24	Regression	10
October 31	Hypothesis Testing (one sample)	12
November 7	Hypothesis Testing (related-samples)	13
November 14	Hypothesis Testing (independent samples)	14
November 21	Chi-Square	19
November 28	Course Wrap-Up/Review, **Exam Handed Out**	**
December 5	**Final Exam Due**	**

1. This schedule is subject to change. Some topics may take more time; others may take less. Further supplementary readings may be assigned throughout the semester. Any changes will be announced in class.