

## EDA383: Advanced Quantitative Research and Analysis, Fall 2007

### Instructor

Jeff Wayman, Ph.D.  
SZB 310D  
(512) 475-8588  
jwayman@austin.utexas.edu

### Teaching Assistant

Vincent Cho  
SZB 364A  
(713) 385-0882  
Vincent.Cho@mail.utexas.edu

### Office hours

Since most students contact me through email with questions, I typically don't set fixed office hours. Instead, I try to be available nearly all of the time, so feel free to send me email, call, set an appointment, drop by, or contact me telepathically. If the class decides there is a need for fixed office hours, I can certainly set them.

### Meeting Times and Places

Wednesdays, 4 to 7 PM in the Learning Technology Center, SZB Room 439E.

### Course Text:

Gravetter, F. J., & Wallnau, L. B. (2006). *Statistics for the Behavioral Sciences*. Seventh edition, Thomson Wadsworth. The 7<sup>th</sup> edition is important – earlier editions won't do.

### Introduction and description:

This course is designed to build upon the basic workings of statistics that you learned in your introductory class, but we get to move on to more complicated, in-depth methods. We will move faster and go deeper than your introductory class may have.

You should have received the email I sent with review reading assignments and problems to help make sure your background knowledge is appropriate for this course. Concepts and skills I expect you to have from your Intro class include:

- T-test: One-sample
- T-test: Two independent samples
- One-way ANOVA
- Regression
- Chi-square for independence
- Confidence intervals for one and two means.

Concepts and skills we will learn in this class will add to what you previously knew about some techniques and introduce some new ones. These are subject to change, depending on class needs:

- ANOVA
  - One, two, or more factors
  - Interaction terms
  - Post-hoc tests
  - Effect sizes
  - Confidence intervals
- Regression
  - One, two, or more factors
  - Dummy coding
  - Interaction terms
  - Effect sizes

- Confidence intervals
- Chi-square tests for independence and goodness-of-fit
- Application of these methods to real-world problems
- Understanding these methods in reading journal articles

SPSS is the computer tool we will use for these methods. The aim of the course is not to teach you SPSS, but computer proficiency is necessary to be competent in quantitative methods. I'll show you how to do the things you need to get by in this course, but branch out learn more on your own – the more you learn about SPSS, the better you'll be. Computers with SPSS on them are located in the 5<sup>th</sup> floor LTC lab. You may also buy various licenses to have SPSS on your own.

#### Course objectives:

1. Become familiar with advanced concepts of quantitative research.
2. Become familiar with advanced statistical concepts and tools necessary to support such research.
3. Gain a knowledge base that makes subsequent quantitative learning efficient and useful.

#### Expectations for students:

1. Participate fully. This means doing all the reading, participating in class, doing the assignments, and asking questions when you have them.
2. Check email nearly every day.
3. Check our Blackboard site frequently.
4. Think and learn!

#### Grading

In assigning grades, I use a 90-80-70 breakdown for A-B-C, and I use +/- grading. Your grade will be computed from a total of overall points earned two ways:

- 1) Projects designed to help you select and apply these techniques to real-world problems. In these projects, you will establish research questions, select and conduct analyses, and find meaning from these analyses. We will use real-world school data sets for these projects. I'll wait until I evaluate class learning needs before I set the details of these assignments.
- 2) Short, unannounced quizzes given periodically in class that test core concepts necessary for any statistical learning to occur. These quizzes will be easy if you're keeping up and prepared for each class. They'll usually be 2 – 5 points apiece and I expect to give 6 – 9 of them.

Most assignments will be discussed in class, but some might be posted to Blackboard at odd times. You're expected to check Blackboard every day or so to see what's been added.

Additionally, I assign plenty of work that is not for a grade – usually, these are reading or practice assignments with keys. Of course, you're expected to do those whether you get graded or not, and I'm kind of impatient with folks who don't do them.

#### UT Honor Code

The core values of the University of Texas at Austin are learning, discovery, freedom, leadership, individual opportunity, and responsibility. Each member of the University is expected to uphold these values through integrity, honesty, trust, fairness, and respect toward peers and community.

I'm glad you're here! This will be good and you'll learn a lot if you keep up. I promise.