

**CED 611, Intermediate Graduate Statistics
Counseling 613, Advanced Statistical Techniques**

Spring 2013

Instructor: Katy Denson, Ph.D.

Contacts: Email: katydenson@centurylink.net

Because I won't have office hours, I will try to get to class about 30 minutes early and plan to stay a little after class if you have questions.

Text: *Discovering Statistics Using SPSS* by Andy Field. Sage Publications (2009).

Software: SPSS Statistical software (version 17.0 or higher are recommended). You can purchase and download a copy from <http://www.onthehub.com/spss/>. You can also get a copy from <http://studentdiscounts.com> (can be installed on two computers). Be sure that you choose the **Statistics Premium Grad Pack**. You can get a 6 month or 12 month license. The software is also on the computers in the student lab at the Metroplex and various labs on the Commerce campus.

Class Notes: Class notes will be posted on eCollege. Notes will primarily be copies of the PowerPoints used during lecture presentations. Other handouts may also be available. Datasets for the homework will also be on eCollege.

Description: This course is intended to provide graduate students with an introduction to statistics and is approved by the GraduateSchool as a Level III research tool. The emphasis in this course will be upon understanding statistical concepts and applying and interpreting tests of statistical inference. Content will include but not be limited to: the application of selected inferential statistical procedures, including advanced correlational methods, multiple regression, t-tests, ANOVA, two-way factorial ANOVA, reliability and other advanced procedures. Computer software (SPSS) will be employed to assist in the analysis of data for this course. Students should have access to a computer, SPSS software, and the Internet. This access is available at the Metroplex Center and on the Commerce campus in certain computer labs.

Course Objectives: Develop and demonstrate an understanding of:

- How interesting and fun statistics can be
- The uses and limitations of statistical software
- The reasoning and assumptions underlying the inferential statistical process
- Exploratory data analysis to explore assumptions
- Reliability, particularly as it applies to surveys
- Linear regression and multiple regression
- Analysis of variance (ANOVA)
- Factorial ANOVA, including post hoc and multiple comparisons
- The appropriate application and interpretation of inferential tests applied to ANOVA and multiple regression
- How to write a simple description of methodology and results from analyses

Grading: The course grade will be determined by the following combination of criteria:

- Homework: Will be assigned each session in class. It may consist of problems from the text or running and interpreting some form of data. Completing or attempting the homework is very important to success in this class because it gives you an opportunity for practice and application. It is expected that mistakes will occur in practice; therefore, incorrect (not incomplete or partially complete) answers on homework problems will not result in a significant penalty. For that reason, do not assume that high homework grades represent readiness for success on exams. Deductions will be made for poorly organized and labeled assignments or incomplete responses. Homework will count 50% of the course grade. The lowest homework grade will be dropped from the calculation of the final grade.
- Participation: A discussion will occur each session at the beginning of the class and will cover homework, readings, and previous discussions. You should be prepared to answer questions regarding discussion material that will be posted on eCollege for that week. It will be helpful if you have completed the discussion questions before coming to class. Participation will count 10% of the course grade.
- Mid-term Exam: Will be cumulative to that point, open book and notes, and will count for 20% of the course grade.
- Final Exam: Will be cumulative, open book and notes, and will count for 20% of the course grade.

Absences: If you are absent, make sure you have a buddy that will share class notes and collect handouts for you. If you can, let me know you are going to be absent. It is possible you could e-mail your homework, depending on the assignment. You will be expected to turn in homework upon your return, and you will be expected to take the quiz for the week you missed.

Other University Information

✧ ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services

Texas A&M University-Commerce

Gee Library, Room 132

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

✧ CONDUCT AND ACADEMIC HONESTY

"All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment." (See Student's Guide Handbook, Policies and Procedures, Conduct) "Graduate students at Texas A&M University-Commerce are expected to maintain high standards of integrity and honesty in all their scholastic work." (See Section A13.12, Academic Honesty, A&M-Commerce Procedures.)

✧ UNIVERSITY CLOSING DUE TO WEATHER

Check <http://www.tamu-commerce.edu/> regarding class cancellations. Also, check KETR radio on 88.9 FM and television channels 4, 5, and 8 (channel 7 for Tyler & Longview Area).

Calendar

Session	Topics	Readings
January 14	Statistics Review Preparing the Data file	Field, Chapters 1 and 3
January 21	No class – MLK holiday	
January 28	Statistics Review Preliminary Data Analyses	Field, Chapter 2
February 4	Statistical and Practical Significance Graphing and Manipulating Data	Field, Chapter 2
February 11	Assumptions	Field, Chapter 5
February 18	Multiple Regression	Field, Chapter 7
February 25	Reliability	Field, Chapter 17
March 4	Mid-term Exam	
March 11	SPRING BREAK	
March 18	One-way ANOVA and Post Hoc Tests	Field, Chapter 10
March 25	Two-way ANOVA	Field, Chapter 12
April 1	A Priori Contrasts	Field, Chapter 12
April 8	Repeated Measures ANOVA	Field, Chapter 13
April 15	MANOVA	Field, Chapter 16
April 22	Choosing the Right Statistic	Presentation
April 29	Review for Final	
May 6	FINAL EXAM	

General SPSS Instructions

Your SPSS book, *SPSS Survival Manual*, will give you lots of good information about SPSS and how to run each type of analysis that we do. Let me point out a few things that will make your life simpler.

Beginning on page 28 of your SPSS book, there is a section called **Changing the SPSS 'Options'**. Read through the list of changes you can make. If there is anything there you feel you need to change, go ahead. You can always change it back if you don't like it.

Getting Rid of the Syntax

Here is a REALLY IMPORTANT change that is not in your book. Get to the Options screen, and now click on the Viewer tab. On the left hand side, under the list of icons, you will see a checkbox in front of the words: Display commands in the log. **Uncheck this**. This adds countless pages to output, so get rid of it.

Changing the Font

From this screen you can also change your font for your titles and output, etc. It's not necessary, but if there is a certain font you want, go for it.

Adding a Page Break

SPSS will print the output pretty much however it wants to do it. You can add page breaks wherever you need them to make your output look better. Here's how to do it: When you are looking at your output, there are two windows, the navigation window on the left (skinny column) and the output on the right (larger portion). In the navigation window, click (but **don't** double-click) on the place where you want the page break to go. At a title is a good place because SPSS is notorious for putting the title on one page and the table on the next. When you click, that section is now highlighted. Go to Insert at the top of the screen. A menu comes down. Click on **Page Break**. You see that if you don't like where the page break is, you can clear the page break in the same way. Now click on Output at the top of the navigation window. The whole output should now be highlighted. Then go to File, and select Print Preview. This will let you see if your page breaks are in the right place and if you need any others.

Shrinking a Table

As you are looking at your output in Print Preview, you may see that your table is split onto two pages. This is very irritating, but there is a cure! You can shrink a table a long table to fit on one page or you can shrink a wide table to fit on one page. But be careful!! If you have a really long table, SPSS will shrink it for you, but the print will be microscopic and you will not be able to read it. Here's how to do it:

From the Viewer screen, where you are looking at your output, double-click on the table to enter the editing mode. There should now be a little double-hatch line around it. Right click and choose Table Properties. Then select the Printing tab. Check **Rescale Wide Table to Fit Page** or **Rescale Long Table to Fit Page**. Then click on OK. You can go to Print Preview again to check your work.