



EDCI 699 Statistics: Content, Process, Application

COURSE SYLLABUS: SPRING 2016

Instructor: Dr. Katy Denson, Ph.D.

Office Hours: Because I live in Albuquerque, New Mexico, I won't have office hours. But I will be very available to speak with you over the phone.

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COURSE INFORMATION

Materials – Textbook:

Discovering Statistics Using IBM SPSS Statistics (4th edition) by Andy Field, Sage Publications, ISBN # 978-1-4462-4918-5

Course Description: This course is intended to provide graduate students with an introduction to statistics and is approved by the Graduate School as a Level II 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: data and data files, data screening, scaling, visual representations of data, descriptive statistics, correlation and simple regression, sampling distributions, and the assumptions associated with and the application of selected inferential statistical procedures (including t-tests, chi-square, and one-way ANOVA). 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.

Student Learning Outcomes:

- How interesting and fun statistics can be
- How and why statistics has developed as a tool of the scientific process
- How data are collected and how observations are quantified during the scientific and research process
- How observations are represented and stored in a data file
- The uses and limitations of statistical software
- The scaling and coding of data
- Frequency distributions; how data can be represented visually, and the strengths and weaknesses of these representations
- Methods of appropriately describing the central tendencies of various distributions
- Variability and how to quantify variability
- The reasoning and assumptions underlying the inferential statistical process
- Probability, as it refers to inferential statistics
- Correlation and simple linear regression
- The appropriate application and interpretation of various inferential statistical procedures, including the t-test, the Chi-square test, inferential tests applied to correlation, and basic ANOVA
- How to write a simple description of methodology and results from analyses

COURSE REQUIREMENTS

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

- **Written Assignment:** A written assignment will be assigned for each class session. 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 45% of the course grade.
- **Quizzes:** Will be assigned each session and will cover homework, readings, and lectures. You will most likely be asked to interpret and answer some questions regarding an SPSS printout, as well as other content related questions. Quizzes will count 25% of the course grade.
- **Mid-term Exam:** Will be cumulative to that point, open book and notes, and will count for 15% of the course grade.
- **Final Exam:** Will be cumulative, open book and notes, and will count for 15% of the course grade.

TECHNOLOGY REQUIREMENTS

Software: SPSS Statistical software (version 19.0 or higher are recommended). About the cheapest place you can purchase and download a copy is from <http://www.hearne.software/Home>. Other sources include <http://www.onthehub.com/spss/> and <http://studentdiscounts.com> (can be installed on two computers). Be sure that you choose the **Statistics Standard Grad Pack**, not the Base 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.

Datasets: If you have your own data from a pilot study or work or some other project, you may use that data for your homework assignments. There may be times that your data are unsuitable for the topic. If you do not have your own data or your data are unsuitable, datasets will be provided. If you have your own data, you will need to discuss it with me for suitability.

ACCESS AND NAVIGATION

Class Notes: Because this an online course, lectures and class notes for each session will be available on eCollege. Feel free to print anything you want to use. The materials will be in Doc Sharing under the appropriate week. SPSS presentations and datasets for the homework will also be there.

COMMUNICATION AND SUPPORT

Please feel free to contact me any time you have questions. I make a rule for myself, and I would like for you to follow it also, that if I spend an hour on something, and really give it my all, but I still can't get it, it's time to ask for help. Don't be afraid to ask for help! Don't just sit there getting frustrated!

COURSE AND UNIVERSITY PROCEDURES/POLICIES

University Specific Procedures:

ADA Statement

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 132
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
StudentDisabilityServices@tamuc.edu
Student Disability Resources & Services

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. (See *Code of Student Conduct from Student Guide Handbook*).

A&M-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

COURSE OUTLINE / CALENDAR

Week	Session	Topics	Readings	Self-Assessment and Homework Due
1	January 19	Introduction to SPSS	Field, Chapter 3	January 24
2	January 25	Chapter 1	Field, Chapter 1	January 31
3	February 1	Finish Chapter 1 Chapter 2	Field, Chapters 1 and 2	February 7
4	February 8	Chapter 2	Field, Chapters 1, 2 and 3	February 14
5	February 15	Chapter 2	Field, Chapter 2	February 21
6	February 28	Chapter 2 Presenting Data	Field, Chapter 2	March 6
7	March 7	Mid-term Exam	The mid-term exam will be open Friday, March 11, through Sunday, March 13	
8	March 14	Spring Break		
	March 21	Correlation	Field, Chapter 6	March 27
9	March 28	Regression	Field, Chapter 7	April 3
10	April 4	t-tests for Independent and Dependent Means	Field, Chapter 9	April 10
11	April 11	ANOVA	Field, Chapter 10	April 17
12	April 18	Post Hoc Tests	Field, Chapter 10	April 24
14	April 25	Chi-square	Field, Chapter 18	May 1
15	May 2	Review for final exam		
16	May 9	Final Exam	The final exam will be open Monday, May 9, through Wednesday, May 11	

General SPSS Instructions

In Chapter 3, your textbook 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.

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.