



Course SOC 3305.001 Applied Data Analysis
Instructor Kara L. Sutton, PhD
Term Fall 2016
Meetings Tues. & Thurs.: 10:00am – 11:15am, GR 3.206

Instructor's Contact Information

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Office Hours Please e-mail to set up an appointment

General Course Information

Pre-requisites, Co-requisites, & other restrictions EPPS 2301 and (EPPS 2302 or EPPS 2303)

Course Description This course provides an introduction to data analysis techniques using standard social science statistical software packages. Topics include application, limitations, and interpretations of research results.

Recommended Texts & Materials Hamilton, Lawrence C. *Statistics with Stata, Version 12*, Cengage Learning, 2012 (8th edition). ISBN: 0840064632.

Course Objectives:

This course provides an introduction to the application of data analysis techniques that will enable students to perform statistical analysis using social science data. It will build upon prior existing knowledge of statistics, but the focus is less about how particular statistical tests perform, and more about how to use, interpret, and present the results of quantitative methods through the use of standard statistical software.

We will consider attributes of single variables, including their distributions and measures of central tendency and dispersion. We will then consider measures of association between two variables and introduce the concept and mechanics of hypothesis testing, and conclude with the basic linear model as a way to introduce additional covariates. Students will examine data gathered to address questions in social science research settings, becoming acquainted with the application of basic descriptive statistical techniques, tabular and graphical methods for displaying data, the notion of statistical inference, and analytic methods for exploring relationships with both categorical and continuous measures.

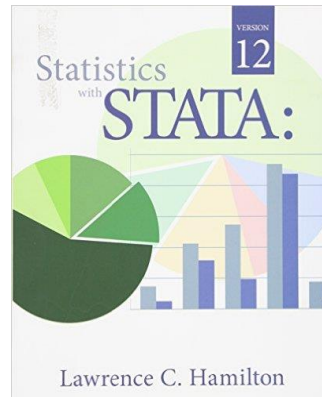
The course emphasizes hands-on application of the techniques discussed in class using STATA, a statistical software package. The majority of course time will be spent becoming familiar with the software, writing codes, conducting analyses, and interpreting outputs. Students completing this course will be good consumers of statistical information and have a solid foundation for pursuing further study of quantitative analysis. The goal is to integrate base statistical knowledge with the practical aspects of data analysis techniques through software application. Mastery of these skills will prepare students to conduct their own quantitative research and enhance their competitiveness in the job market.

Recommended Textbook:

Hamilton, Lawrence C. 2012. *Statistics with Stata, Version 12*. Duxbury Press. ISBN: 0840064632.

The textbook should be available at the bookstore on campus, and at alternative retailers off campus. You should also be able to find used or rental copies as well, either in store, or online.

It is currently available for purchase in used condition on Amazon for \$68.09.



Software:

We will rely heavily on the statistical software package, STATA. Preferred statistical software varies by profession/field and changes over time, but a concrete grasp of one is very transferrable to another. STATA is one of the predominantly used packages in social science research and is available in all EPPS computer labs.

Prior experience with STATA is not assumed and we will take a pragmatic approach, introducing enough of the basics for you to implement statistical methods we will discuss in class, and build toward more advanced coding. Depending on your academic or professional goals, you may wish to spend time figuring out more advanced techniques, and I am always happy to help guide you in this endeavor.

It is not required, but students do have the option of purchasing a license of STATA IC (\$75/6 months; \$125/1 year; \$198 perpetual) for use at home. Please see <http://www.stata.com/order/new/edu/gradplans/student-pricing/> for more details about this and other versions (note: we will be using datasets that are too large for “Small STATA”).

Additional Stata Resources:

<http://www.stata.com> (main website for Stata)

<http://www.statalist.org/forums/> (a forum for all things Stata – very helpful)

<http://www.youtube.com/user/statacorp> (brief tutorials on the use of Stata)

<http://www.ats.ucla.edu/stat/stata/> (UCLA site with helpful Stata information and tutorials)

Also Google Joseph Cohen Stata videos—good step-by-step videos for absolute beginners!

Course Requirements:

Labs: There will be a total of six (6) labs for this course. The goal of these exercises is to teach you how to apply your data analysis skills to a particular research scenario, including calculating a variety of test-specific statistics and interpreting the results in such a way that you could explain your findings to a non-academic audience.

Exams: There will be two exams this semester, a midterm and a final. The final exam is non-cumulative and will cover material post midterm topics. Makeup exams will only be given in cases of legitimate documented reasons (e.g., illness supported by a note from the student health center).

Final Project: A short empirical project and presentation is required for this course. It will allow the student to perform some original data analysis on a topic of interest and present the results to the class in a brief 7-10 minute presentation. A suggested outline and additional information will be provided in a handout.

Additional Course Information:

The general format for this course will be a combination of lecture and labs each week. The lab portion of the course is designed to allow you to work on currently assigned labs, and potentially complete them. For this reason, labs turned in after the due date will lose 5 points per day late, including weekends. Labs will not be accepted more than five days from the due date. This will help students from falling behind in the course.

Group work is greatly encouraged during lab time for this course – get to know your neighbor. However, it is expected that each student will submit his or her own lab, that he or she personally ran the code, performed the analysis, and typed up the coinciding report unless otherwise specified on the lab directions.

Grading Policy:

Labs	40%
Midterm Exam	20%
Final Exam	25%
Final Project	15%

Grading Scale:

<u>Grade</u>	<u>Percent</u>
A+	97-100%
A	93-96%
A-	90-92%
B+	87-89%
B	84-86%
B-	80-83%
C+	77-79%
C	74-76%
C-	70-73%
D+	67-69%
D	64-66%
D-	60-63%
F	<60%

Course Schedule and Assignments:

The schedule provided serves as a guideline for the semester. As we proceed, we may discover that some topics take a bit longer than expected to cover while others take less time. We may also add or alter a few of the topics along the way to accommodate student interest. Recommended readings associated with each topic are listed on the schedule.

Date	Topic	Recommended Reading/Assignments
August 23 rd August 25 th	Syllabus Day and Course Introduction Lab 1 walk-through	Class Survey (optional)
August 30 th September 1 st	Class Survey (Primary Data): Variables, Levels of Measurement	Chapter 1 Lab 1 walk-through due (Sept. 1 st)
September 6 th September 8 th	Relationships Between Different Measurement Levels	Chapter 2 (pp. 13-39)
September 13 th September 15 th	Working with Secondary Data: Creating new variables, Recoding, Bivariate analysis	Chapter 2 (pp.39-63) Lab 2 Due (Sept. 15 th)
September 20 th September 22 nd	Descriptive Statistics and Visual Display of Data	Chapter 3
September 27 th September 29 th	Survey Research; Summary Statistics and Tables	Chapter 4 Lab 3 Due (Sept. 29 th)
October 4 th October 6 th	Independent Samples T-Test and T-Test Calculations	Chapter 5
October 11 th October 13 th	Chi-square Test of Independence and Calculations	Lab 4 Due (Oct. 13 th)
October 18 th October 20 th	Midterm review and assignment workday Midterm!	Midterm Exam: October 20th
October 25 th October 27 th	ANOVA and ANOVA Calculations and Interpretation	Chapter 6
November 1 st November 3 rd	Multivariate Relationships	Lab 5 Due (Nov. 3 rd)
November 8 th November 10 th	Correlation and Scatter plots	Chapter 7 (pp. 163-190)
November 15 th November 17 th	Regression	Chapter 7 (pp. 190-214)
Week of November 21st NO CLASS (FALL BREAK!)		
November 29 th December 1 st	Regression continued Final Review	Lab 6 Due (Dec 1 st)
December 6 th	Student presentations	Project and Presentation Due!
Week of December 12th	Final Exam Week	Final Exam (TBA)

FINAL EXAM – Will be on date assigned by UTD, Check Galaxy for posted date

Extra Credit: None

Attendance: Attendance is not taken on a regular basis. However, students are expected to attend all class meetings. If you miss a class it is strongly encouraged that you borrow one of your classmate's notes and then talk with me if you need additional clarification.

Class Participation and Citizenship: Students are expected and encouraged to participate during class. Please read all required materials prior to class. Doing so will help in understanding the main concepts and assist in facilitating any group discussions that we might have. Further, this will help you during the assignments. If you have questions, please don't hesitate to ask! Respectfulness in the classroom for all participants is expected.

Disability Accommodations: Please contact me as soon as possible if you require special accommodations. The Office of Student AccessAbility (OSA) is located in the Student Services Building, suite 3.200. They can be reached by phone at (972) 883-2098 or by email at disabilityservice@utdallas.edu. I will gladly work with you and the OSA to make sure these accommodations are made.

Technical Support: If you experience any problems with your UTD account you may send an email to: assist@utdallas.edu or call the UTD Computer Helpdesk at 972-883-2911.

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Please go to <http://go.utdallas.edu/syllabus-policies> for these policies.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Instructor.