

Sociology 314: Analyzing Social Statistics
Spring 2014
Class Meetings: Tues. & Thurs. 12:30-1:50 PM
Classroom: KAP 305

Professor: Jennifer Rosen

Office: HSH 306

Office Hours: Wed. 11:30-1:30 & by Appointment

Contact: rosenjl@usc.edu

TA: Joy Lam

Office: Dohney Library Literatea Cafe

Office Hours: : Mon: 11-12.30 & 3.30-4:45

Contact: joylam@usc.edu

Course Description

This course focuses on the “doing” of social science research using quantitative methods. Sociologists are concerned with many topics, ranging from demographic trends to discrimination and inequalities to industrialization and democracy. We create theories to explain the similarities, differences, and trends we see, and these theories are oftentimes based on statistical data. We are also critical consumers of information, so we often subject these theories to rigorous empirical testing to assess whether they are good theories and whether they hold up across different situations, populations, and scenarios. This is a crucial difference between Sociology and “common sense.” While the latter arises from casual and non-random observations of the social world, sociological conclusions are based on systematic, numerous, and representative observations.

This course focuses on how statistics can be used to answer questions, describe data, and increase your ability to be a critical consumer of the information you encounter every day in books, newspapers, television, and other media. For many students, taking a statistics course brings up fear and anxiety. If this is true for you, *please don't be afraid!* We will work together to make statistics more approachable, and you will leave this course with a solid understanding of the benefits of social science statistics. I will provide you with an introductory understanding of how to use statistics to interpret and analyze real data, while keeping statistical formulas and proofs to a minimum. Instead, emphasis is given to building conceptual frameworks and gaining practical skills for conducting data analysis. As you will see long after you finish this course, the value of understanding statistics goes far beyond academic pursuits. Journalists, market researchers, business analysts, teachers, and lawmakers all use data and statistical analysis in their professions, making this knowledge one of the most marketable skill sets for social science majors!

Course Objectives

Statistics in the social sciences involves the collection, analysis, interpretation, and presentation of data to answer questions about the social world. The specific topics covered in this course include data description, statistical inference, hypothesis testing, analysis of association and variance, an introduction to regression analysis, and a basic understanding of computer-based statistical software. You will learn how statistics can help you answer questions about the social world and enhance your ability to think through problems.

Upon completing this course you will be able to:

1. Describe the structure and characteristics of statistical data;
2. Calculate and interpret measures of central tendency and variability in statistical data;
3. Assess the strength of association between sociological variables;
4. Determine whether observed statistical patterns and associations are generalizable to the larger social world;
5. Achieve a basic understanding of statistical and database computer software;
6. Identify and carryout basic statistical analyses used in sociological inquiry;
7. Become a critical consumer who can assess the validity of the data, graphs, charts, and statistics you encounter in academic books, journal articles, newspapers, television, and other media sources.

Your class assignments and labs will require you to gain a working familiarity with SPSS. SPSS is a statistical software package widely used in the social sciences.

Course Requirements and Grading

Required Materials

Nearly all of the readings required for this class are found in:

Levin, Jack & James A. Fox. 2011. *Elementary Statistics in Social Research: The Essentials* (3rd Edition). San Francisco: Allyn & Bacon.

You should carefully read each chapter *before* we discuss it in-class. Doing so will make the lectures much easier to follow. Additional required journal articles that are listed on the syllabus will be posted on Blackboard.

You will need a calculator that has square root and squaring keys.

Attendance/Participation (10%)

We will be covering a large amount of material over a short amount of time. Additionally, each new method we learn is based on previously covered concepts. In the interest of a productive and interesting learning environment, you are expected to attend all scheduled classes and be prepared to participate (do the readings!). Each lecture and lab session will provide you new information and examples of how the concepts really work. There will be *several in-class assignments*, the dates of which will be randomly selected throughout the course of the semester. We will also take attendance daily. These two factors will be combined for your attendance/participation grade. After two unexcused absences, points will be deducted from your attendance/participation grade. If you have more than 5 unexcused absences you will lose all attendance/participation points. Generally, an absence will only be excused for university approved activities, required court appearances, religious holidays of your faith, and medical emergencies.

Civility: We hope this goes without saying, but we will say it anyways: *it is important that we treat each other with respect so that everyone feels free to express their viewpoint and ask questions*

during class without fear of incivility or rudeness from others. Expressing disrespect and intolerance towards others will not be tolerated. If you do not feel comfortable discussing any of the topics in this course, please come talk to me privately.

Technology: Cell phones are strictly prohibited in class. Make sure all ringers are turned off before entering the classroom. Computers may be used to take notes or work on in-class assignments only. Please do not email or browse the internet during class. While you may think you are being subtle, it is very obvious from the professor and TA's perspectives when students are doing this. After one warning, ringing cell phones and web browsing will result in the reduction of your final grade.

Exams (15% each)

There will be three in-class exams and one final exam. Each will account for fifteen percent of your grade. They will consist of conceptual (multiple choice) and computational questions. I believe it is more important that you know when and how to use the concepts and formulas we discuss in the course, than it is to memorize formulas. Therefore, to avoid having you focus on rote memorization of statistical formulas, I will provide you with the relevant formulas on the exams. Exams will require you to use a calculator that has square root and squaring keys. Only the final exam will be cumulative.

Problem Sets (10% each)

There will be three problem set assignments that will each account for ten percent of your grade. These homework assignments will focus on describing, calculating, graphing, and interpreting statistics from the *General Social Survey Dataset* in SPSS.

Collaboration: You may discuss and work on these problem sets with your classmates, but you are responsible for turning in the homework in your own words. In other words, while you may collaborate with other students on how to solve the problem sets, you may not copy or paraphrase someone else's work, and you must submit all computer output that you have done yourself.

Extra Credit

Towards the end of the semester you will have the opportunity to complete an extra credit assignment, similar to the problem sets. The extra credit assignment will be discussed in more detail during the semester.

Late Work Policy

Unless you have arranged with me *before the due date* of the assignments, you should turn your assignments in by the beginning of class on the day it is due. Late assignments will be docked one full grade for every 48 hours that they are late. No assignments will be accepted after 1 week past the due date. No make-up exams will be offered except for students facing extraordinary situations that are outside of their control.

Your final grade will be calculated as follows:

<u>Requirement</u>	<u>Percentage of Final Grade</u>
Attendance and Participation	10%
Four In-Class Exams (15% each)	60%
Three At-Home Problem Sets (10% each)	30%
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TOTAL	100%

Services for Students with Disabilities

Please talk to me privately if there is anything that may adversely affect your ability to complete course requirements so that we may discuss reasonable accommodations. Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to your course instructor (or TA) as early in the semester as possible. The DSP is located in STU 301 and is open 8:30 a.m. – 5:00 p.m., Monday through Friday. Website and contact information for

DSP:http://sait.usc.edu/academicssupport/centerprograms/dsp/home_index.html

(213) 740-0776 (Phone); (213) 740-6948 (TDD only); (213) 740-8216 (FAX); ability@usc.edu

Statement on Academic Integrity

USC seeks to maintain an optimal learning environment. General Principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles. Scampus, The Student Guidebook, contains the Student Conduct Code in Section 11.00, while the recommended sanctions are located in Appendix A: <http://usc.edu/dept/publications/SCAMPUS/gov/> Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review should there be any suspicion of academic dishonesty. The Review process can be found at: <http://usc.edu/student-affaris/SJACS/> Information on intellectual property at USC is available at: <http://usc.edu/academe/acsen/issues/ipr/index.html>

Summary of Assignments and Due Dates

- Feb. 4** Exam I
Feb. 20 Problem Set Homework #1 Due
Mar. 11 Exam II
Mar. 25 Problem Set Homework #2 Due
Apr. 15 Exam III
May 1 Problem Set Homework #3 Due
May 6 Extra Credit Due by 5PM
May 14 Final Exam

Course Outline*

Unless otherwise noted, the reading assignments are for Levin and Fox's (2011) *Elementary Statistics in Social Research: The Essentials*.

WEEK 1

Tues, Jan. 14 Introduction to the Course

Thurs, Jan. 16 Statistics: What are they and what are they good for?
READING: Ch. 1

WEEK 2

Tues, Jan. 21 Describing your Data: Variables, Distributions, Graphs
READING: Ch. 2

Thurs, Jan. 23 What is Average? Measures of Central Tendency
READING: Ch. 3

WEEK 3

Tues, Jan. 28 Average is Unusual! Measuring Variability
READING: Ch.4

Thurs, Jan. 30 REVIW SESSION

WEEK 4

Tues, Feb. 4 **EXAM I**

Thurs, Feb. 6 NO CLASS

WEEK 5

Tues, Feb. 11 **LAB** -- Introduction to the GSS Survey and Data Analysis in SPSS
READING: Davis and Smith's *NORC General Social Survey User's Guide*. Pp. 1-22 **AND** Healey (2009) *Appendix F* **AND** Best (2001) *Damned Lies and Statistics: Untangling Numbers from the Media, Politicians, and Activists*.

Thurs, Feb. 13 **LAB** – Univariate Displays of Data: Variable Construction and Graphing in SPSS
READING: Paxton (2000), *Women's Suffrage in the Measurement of Democracy: Problems of Operationalization*

WEEK 6

Tues, Feb. 18 Exactly How Different Are You? Characteristics of the Normal Curve and Calculating Z
READING: Ch. 5

Thurs, Feb. 20 Samples and Populations: Estimating, Generalizing, and The t Distribution
READING: Ch. 6

Problem Set Homework #1 Due

WEEK 7

Tues, Feb. 25 Socio-Logic: Testing the Differences between Means
READING: Ch. 7

Thurs, Feb. 27 Identifying *Statistically Significant* Differences
READING: Ch. 7 (Cont'd)

WEEK 8

Tues, Mar. 4 **LAB** -- Comparing Means and Distributions in SPSS

Thurs, Mar. 6 REVIEW SESSION

WEEK 9

Tues, Mar. 11 **EXAM II**

Thurs, Mar. 13 **LAB** -- Standard Error of the Difference between Means in Dependent & Independent Samples

WEEK 10

Tues, Mar. 18 **NO CLASS – SPRING RECESS**

Thurs, Mar. 20 **NO CLASS – SPRING RECESS**

WEEK 11

Tues, Mar. 25 Association by Design or by Chance? Analysis of Variance
READING: Ch.

Problem Set Homework #2 Due

Thurs, Mar. 27 Nonparametric Tests of Significance: Chi-Square & The Median Test
READING: Ch. 9

WEEK 12

Tues, Apr. 1 LAB – Chi Square and ANOVA in SPSS

Thurs, Apr. 3 From Decision Making to Association: Introduction to Correlation
READING : Chapter 10

WEEK 13

Tues, Apr. 8 Predicting Outcomes with Linear Regression
READING: Ch. 11

Thurs, Apr. 10 REVIEW SESSION

WEEK 14

Tues, Apr. 15 **EXAM III**

Thurs, Apr 17 **LAB** – Correlation and Regression in SPSS
READING: Ch. 13

WEEK 15

Tues, Apr. 22 Regression Assumptions: The Substantive and Practical Implications
READING: Chapter 5 in Willaim Berry's *Understanding Regression Assumptions*

Thurs, Apr. 24 Ordinary Least Squares Regression Analysis: Finding Net Effects
READING: Chapters 1 & 2 in Paul Allison's *Multiple Regression: A Primer*

WEEK 16

Tues, Apr. 29 TBD

Thurs, May 1 FINAL EXAM REVIEW
Problem Set Homework #3 Due

May 3-6 STUDY DAYS
Extra Credit due May 6 by Email No Later than at 5pm

FINAL EXAM --- WEDNESDAY MAY 14, 2-4PM

*Syllabus may change at the professor's discretion.