

ANALYSIS OF SOCIOLOGICAL DATA I, 920:541

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This course provides an introduction to statistics. We will address the basics involved in manipulating and analyzing data, and we will work on the sociological interpretation of statistical findings.

THE GOOD NEWS: I am assuming little or no statistical background on the part of students registered in the course – I will be gearing my lectures to the neophyte. If all goes as planned, you will leave this course with an in-depth understanding of a wide variety of statistical concepts and techniques. You will be ready to tackle multiple regression, the starting point of the second course in the graduate statistics sequence.

THE BAD NEWS: Developing an in-depth understanding, even with the most prolific of guides, necessitates practice, practice, practice ... i.e. this course will demand lots of time. Assignments will be numerous; deadlines will be firm; re-writes will be assigned for work that fails to show a thorough understanding of the lesson.

Don't be discouraged. Thomas Edison once said, "As a cure for worrying, work is better than whiskey." This course will keep you calm and sober.

BOOKS

There is one required text for the course. It is available at the Campus bookstore or at the usual online venues. I will also place one copy in the sociology library.

Healey, Joseph F. 2012. *Statistics: A Tool for Social Research*, 9th edition. Belmont, CA: Wadsworth.

I will use SPSS in this course. I will provide detailed instructions for executing assignments and these help sheets will be posted on our course Sakai site. Healey provides support as well.

Two different SPSS manuals can be accessed online: The SPSS Core Systems User Guide at http://sociology.rutgers.edu/Sociologycomputing/SPSS19_Manuals/IBM%20SPSS%20Statistics%2019%20Core%20System%20User%27s%20Guide.pdf and the SPSS Guide for Basic Statistics at http://sociology.rutgers.edu/Sociologycomputing/SPSS19_Manuals/IBM%20SPSS%20Statistics%20Base%2019.pdf. You can also click help within SPSS.

If you own another PC package, or prefer to use one of the other packages available through the CSRI, let me know. I am not averse to your using your own materials as long as I am informed.

REQUIREMENTS

Each student will be required to collect his/her own data set.

Your data will consist of information on *either* the 50 states of the United States *or* 50-60 nations around the globe.

During the first three weeks of the course, I will devote significant class time toward discussions of data collection and data entry.

Several assignments will determine the final grade:

1) *Problem Sets/ Computer Assignments*: Class meetings 2-7, will include short problem sets and/or a weekly computer assignment. Assignments will be handed out at the end of each class and will be due at the beginning of the next class. Together, these assignments will account for **30%** of the final grade.

2) *Mid-Term Examination*: The class will include a take-home exam addressing concepts covered in the first half of the course. The exam will constitute **15%** of the final grade.

3) *Short Papers*: Four short papers addressing The Comparison of Two Groups, ANOVA, Chi-Square, and Regression/Correlation respectively will be assigned. In essence, you will analyze your data using each of the techniques, and write a short paper (2-4 pp.) explaining your results. Together, these papers will account for **40%** of your grade.

4) *Oral Report*: During our last class meeting, students will be required to present their Regression assignment to the group. This effort will account for **5%** of your grade.

5) *Attendance*: Class attendance and participation is an expectation of the course. These factors will constitute **10%** of your grade.

NOTE: A key component of this class is an emphasis on cooperation over competition. There is bound to be some variability in students' statistical sophistication. Advanced students are encouraged to assist, even tutor, those needing extra help. Tutoring efforts will be considered and rewarded at grade time.

CLASS SCHEDULE

MTG. 1 (1/17): Introduction to the course

Instructions on Data Collection

Lab: Establish Department Account at CSRI

Assignment: SPSS Core Systems User Guide: Sections 3, 5, 7 (read if needed)
SPSS Guide for Basic Statistics: Chapter 1

MTG. 2 (1/24): Basic Concepts

Populations vs. Samples

Descriptive Statistics vs. Inferential Statistics

Types of Variables/Levels of Measurement

Lab: Entering Data

Assignment: Healey: Chapter 1

MTG. 3 (1/31): Sampling

Lab: Creating samples

Assignment: Healey: pp. 142-146
SPSS Core Systems User Guide: Section 9 – Select Cases
(**Note:** Next week's reading is heavy. You might want to start early.)

MTG. 4 (2/7): Displaying and Describing Data

Tables and Graphs

Descriptive Statistics

Dispersive Statistics

Lab: Application of lecture topics

Assignment: Healey: Chapters 2, 3, and 4
SPSS Guide for Basic Statistics: Chapters 2 and 3

MTG. 5 (2/14): Probability

Probability Distribution

Normal Distribution

Sampling Distribution

Central Limit Theorem

Assignment: Healey: Chapter 5 and pp. 147-153

MTG. 6 (2/21): Confidence Intervals

Assignment: Healey: Chapter 7

MTG. 7 (2/28): Hypothesis Testing

Assignment: Healey: Chapter 8

SPSS Guide for Basic Statistics: Chapter 9 (One Sample T-test)

MTG. 8 (3/7): Review and Distribution of Mid term exams.

**MID TERM EXAMS ARE DUE IN THE 3/20/12 CLASS
NO LATE PAPERS WILL BE ACCEPTED!!!!**

CUT LOOSE -- SPRING BREAK!!!!

MTG. 9 (3/20): Review of mid terms

Comparing Two Groups

Lab: t-tests for two groups

Assignment: Healey: Chapter 9

SPSS Guide for Basic Statistics: Chapter 9 (Independent Sample T-tests)

MTG. 10 (3/27): ANOVA

Lab: ANOVA

Assignment: Healey: Chapter 10

SPSS Guide for Basic Statistics: Chapter 10

MTG. 11 (4/3): Non Parametric Tests: Chi-Square

Measures of Association

Lab: Crosstabs

Assignment: Healey: Chapters 11 (skim Chapters 12-13)

SPSS Guide for Basic Statistics: Chapter 5 (Crosstabs) and Chapter 27 (Chi-Square)

MTG. 12 (4/10): Correlation/Association/Linear regression

Lab: Scatterplots, Pearson Correlation, and Simple Regression

Assignment: Healey: Chapter 14

SPSS Guide for Basic Statistics: Chapters 12 and 16

MTG. 13 (4/17): No formal lecture: Schedule Individual Conferences

MTG. 14 (4/24): Introduction to Multiple Regression and Final Oral Reports

**PAPERS ARE DUE IN THE APRIL 24 CLASS
NO LATE PAPERS ACCEPTED!**