

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. You'll find new *and* used editions at the Livingston bookstore or at the usual online venues. I will also place one copy in the sociology library.

Healey, Joseph F. 2005. *Statistics: A Tool for Social Research*. Belmont, CA: Wadsworth.

With regard to computing: I will teach SPSS in this course. I will provide detailed instructions for executing assignments. Healey provides support as well. And additional support materials can be accessed via the CSRI web page. But if you wish to purchase your own set of SPSS manuals, contact SPSS Inc. (1-312-651-3000) or visit the Prentice Hall website.

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 the fifty states of the United States.

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

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

SPSS User's Guide: Chapters 5-6.

MTG. 3 (1/31): Sampling

Lab: Creating samples

Assignment: Healey: pp. 149-153

SPSS User's Guide: Chapter 8

(**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 User's Guide: Chapters 13-14

MTG. 5 (2/14): Probability

Probability Distribution

Normal Distribution

Sampling Distribution

Central Limit Theorem

Assignment: Healey: Chapter 5 and pp. 154-161.
SPSS User's Guide: Pg. 292-296

MTG. 6 (2/21): Confidence Intervals

Assignment: Healey: Chapter 7

MTG. 7 (2/28): Hypothesis Testing

Assignment: Healey: Chapter 8

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

MID TERM EXAMS ARE DUE IN THE 3/21/07 CLASS

NO LATE PAPERS WILL BE ACCEPTED!!!!

CUT LOOSE -- SPRING BREAK!!!!

MTG. 9 (3/21): Comparing Two Groups

Lab: t-tests for two groups

Assignment: Healey: Chapter 9
SPSS User's Guide: Chapter 20

MTG. 10 (3/28): ANOVA

Lab: ANOVA

Assignment: Healey: Chapter 10

SPSS User's Guide: Chapter 21

MTG. 11 (4/4): Non Parametric Tests

Chi-Square

Measures of Association

Lab: Crosstabs

Assignment: Healey: Chapters 11 and 12 (Chapters 13 and 14 are optional)

SPSS User's Guide: Chapter 16 and 34

MTG. 12 (4/11): Correlation/Association/Linear regression

Lab: Scatterplots, Pearson Correlation, and Simple Regression

Assignment: Healey: Chapter 15

SPSS User's Guide: Chapters 23 and 26

MTG. 13 (4/18): No formal lecture: Schedule Individual Conferences

MTG. 14 (4/25): Introduction to Multiple regression and Final Oral Reports

PAPERS ARE DUE IN THE APRIL 25 CLASS

NO LATE PAPERS ACCEPTED!