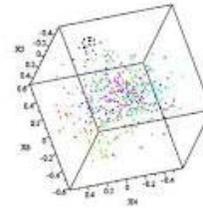
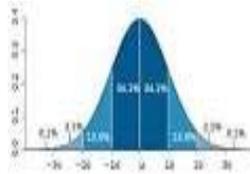


Department of Planning, Policy, & Design  
University of California, Irvine

**PPD 214: Quantitative Analysis**  
**Winter Quarter 2012**



Course: SH 1165, Weds, 11 am – 1:50 pm, <https://eee.uci.edu/12w/54515>

Instructor

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**COURSE BACKGROUND AND GOALS**

Urban planners, policy analysts, and public managers collect and use information to examine societal problems. Issues concerning the environment, housing, education, health, jobs, land use, revenue generation, organizational structures, transportation, and many others require understanding the logic and results of quantitative analyses. Different techniques exist for data collection including personal interviews with experts, telephone surveys, and focus groups. In many cases, data are readily available from secondary sources and need only be prepared for data analysis. Different analytic approaches also exist including qualitative interpretation of the content of personal interviews and statistical analysis of quantitative data such as Census data. This course is concerned with the latter approach.

Statistics is one analytic tool necessary for effective communication and understanding of spatial and social phenomena. Individuals concerned with planning and policy decisions, including administrators and elected officials, rely on statistics to formulate agendas and make decisions. Whether you choose to work in government, a nonprofit organization, business, or as a policy analyst/researcher, you will benefit from a good understanding of statistical analyses. While you may not use statistics every day, you will frequently be presented with results from statistical analyses. The ability to read and understand statistics, as well as evaluate the rigor of statistical analyses, is important for many professions.

**Learning Objectives**

Students in this course will learn to conceptualize a research problem, employ numerical data to address these problems, and draw conclusions from the results of data analyses.

Specifically, upon completion of this course, students will be able to:

- Formulate and assess descriptive and explanatory research questions
- Find, organize, and present descriptive data
- Evaluate and choose appropriate statistical tests for the most common types of questions
- Interpret the results of a set of basic statistical tests
- Understand the approach and results of basic statistical analyses printed in public outlets

Therefore, this course has two goals. First, students will gain an understanding of research involving statistical analyses and its applications to real world problems. Second, students will develop valuable skills for use in planning and policy-related careers.

### **COURSE TEXT/READINGS**

Frankfort-Nachmias, Chava and Anna Leon-Guerrero. 2011. *Social Statistics for a Diverse Society*. Thousand Oaks, CA: Pine Forge Press.

Other readings as assigned or recommended are available on the course website, can be accessed through the UC Libraries, or borrowed from the instructor.

The course book is an introductory text that is not math intensive compared to some statistics text books. This book provides a basic understanding of statistical concepts. In my experience, I have found students' preferences for statistics text books vary depending on their backgrounds and ways of thinking. For this reason, I encourage you to read the course text and review other text books available in the UCI libraries or elsewhere. Three examples of other text resources are:

Agresti, Agresti and Barbara Finlay. 2008. *Statistical Methods for the Social Sciences*. Prentice-Hall: Upper Saddle River, New Jersey.

Cohen, Barry H., Welkowitz, Joan, and R. Brooke Lea. 2011. *Introductory Statistics for the Behavioral Sciences*. Hoboken, NJ: John Wiley & Sons.

Wonnacott, Thomas H. and Wonnacott, Ronald J. *Introductory Statistics for Business and Economics* (any of last 3 editions). New York: John Wiley & Sons

### **Other Reading**

Best, Joel. 2001. *Damned Lies and Statistics*. Berkeley: University of California Press.

Lewis-Beck, Michael S. *Applied Regression*. Beverly Hills, CA: Sage.

Tanner, David E. 2012. *Using Statistics to Make Educational Decisions*. Thousand Oaks, CA: Sage Publications.

Williams, Frederick and Monge, Peter R. 2000. *Reasoning with Statistics*. New York: Wadsworth Pub Co.

## SCHEDULE

**Week 1** Introduction  
The Research Process & Use of Statistics in Planning and Policy  
Introduction to Statistics

*Frankfort-Nachmias & Leon-Guerrero, pp. 1-26*

Descriptive Statistics  
Frequency Tables and Percentages  
Measures of Central Tendency  
Variability

*Frankfort-Nachmias & Leon-Guerrero, pp. 27-168*

### **Assignment 1 distributed**

**Week 2** Measures of Central Tendency and Variability (cont'd)  
  
SPSS Practicum 1 (Meets in SE I computer lab)

*Review Frankfort-Nachmias & Leon-Guerrero, pp. 27-168*

### **Assignment 1 due at end of lab period**

**Week 3** Probability  
Probability Distributions

*None required; optional on course website*

The Normal Curve and Z Scores

*Frankfort-Nachmias & Leon-Guerrero, pp. 169-195*

### **Assignment 2 distributed**

**Week 4** Population and Sample: Parameters and Statistics  
  
*Surveys and Survey Sampling*

*Frankfort-Nachmias & Leon-Guerrero, pp. 196-255*

*Other Reading: Converse, Philip E. and Michael W. Traugott. 1986. Assessing the Accuracy of Polls and Surveys. Science 234:1094-1098.*  
*Fowler, Floyd J. Jr. 1984. Survey Research Methods. Newbury Park, CA: Sage Publications.*

**Assignment 2 due**  
**Assignment 3 distributed**

**Week 5**            Student Presentations

**Assignment 3 due**

**Week 6**            Exam I

Hypothesis Testing and the t-test

*Frankfort-Nachmias & Leon-Guerrero, pp. 256-292*

**Assignment 4 (class project, mid-quarter) due**  
**Assignment 5 distributed**

**Week 7**            Analysis of Variance (ANOVA)  
Cross tabulations, Chi-square analysis

*Frankfort-Nachmias & Leon-Guerrero, pp. 454-488; 293-398*

SPSS Practicum 2 (Meets in SE I computer lab)

**Week 8**            Correlation  
Simple Linear Regression  
                         Concepts & interpretation

*Frankfort-Nachmias & Leon-Guerrero, pp. 399-453*  
*Lewis-Beck, 9-47*

Multiple Regression  
                         Concepts & Interpretation

*Lewis-Beck, pp. 47-74*  
*See Berry, William D. and Stanley Feldman, 1995. Multiple Regression in Practice. Newbury Park, CA: Sage*

**Assignment 5 due**  
**Assignment 6 distributed**

**Week 9**            Multiple Regression (cont'd)  
                         Interpretation & Diagnostics

                         SPSS Practicum 3 (Meets in SE I computer lab)

*Review regression readings*

**Week 10**           **Final Projects**

**Assignment 6 due**  
**Assignment 7 (class project, final paper) due**

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**COURSE POLICIES**

Any student who feels he/she may need an accommodation based on the impact of a disability should contact the instructor privately to discuss his/her specific needs. Also, contact the Disability Services Center at 949-824-7494 as soon as possible to better ensure that such accommodations are implemented in a timely fashion.

Students are expected to attend lectures and complete the reading assignments.

Two points will be deducted from the grade of written assignments for each day past the due date up to two days late. No credit will be given for assignments turned in more than two days past the due date.

The exam cannot be taken early or late without an acceptable and verifiable excuse (e.g., doctor's note). Incompletes will not be given except under extraordinary circumstances.

Final grades in the course will be determined in the following fashion:

Activity	Points
5 Problem set assignments	40
Midterm exam	20
Mid-quarter paper (A4)	10
Final project paper (A7)	20
Presentation	10
Total	100

Grades assigned on point total for course as follows:

96 and above            A

92 – 95                A-

86 – 91                B+

80 – 85                B

Below 80 is not a passing grade in this course