

# **BPOLST 502 POLICY ANALYSIS AND IMPLEMENTATION: STRATEGIES AND METHODS**

Winter Quarter 2004

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## **Course Description**

This course is the first in a series of two courses offered through the MAPS program intended to train graduate students with becoming producers of information, i.e. a policy researcher. This course begins your training by surveying important aspects of the conduct of research into social scientific questions. This course lays the basic foundation for both academic and practical investigation. There are many benefits to taking this class that go beyond merely understanding statistical relationships. In order to conduct surveys, experimental designs, code interviews, and even create a multiple regression of social science questions, it is essential that you know how the scientific method and data analysis impacts the way you create a research design. This class will touch on all of these issues.

There are several important goals tied to this course:

You will gain an understanding of research and statistical analyses and their intrinsic relationship to policy concerns. When you read academic articles, you will be able to critique how they set up their study, and the statistical methods used to attack the question.

You will be able to use descriptive statistics, statistical inference, the meaning and analyses of using confidence intervals, test statistics, and p-values.

You will become more sophisticated in learning how to model data.

This class will put you in an excellent position to create innovative capstone projects in your second year.

You will become proficient with using SPSS 9.0 (SPSS 11.0) and Windows Excel programs. These are important job skills that you can offer an employer, or take with you to use in further graduate study.

And finally, this class will help strengthen your competency in becoming a policy analyst in the MAPS program.

My plan as your instructor is to discuss the basic logic of each topic, along with some examples of techniques that are particularly useful to policy and social science analysts. This class will provide you with information that will allow you to conduct further study on your own as you navigate your way through choosing and executing future research projects in upcoming classes, and most importantly, your capstone project.

We will also be using additional class time to go over computer datasets to instill greater facility of the concepts of statistics and public policy.

**Class Schedule:**

**January 9th                      Week One: Introduction: How to Create A Plan of Attack for Data**

Topics covered:  
The Scientific Method  
Theories  
Hypotheses  
Literature Reviews  
Research Design Ethics

**January 16th                      Week Two: Descriptive Statistics**

Topics covered:  
Distributions, densities  
Histograms  
Mean, median, mode  
Introduction to charts and graphs (visual displays)  
Variables  
Standard Deviation  
The Normal Curve  
Percentiles

**January 23rd                      Week Three: Error/Correlation/Plotting**

Topics Covered:  
Error  
Plotting Lines  
Correlation

**January 30th                      Week Four: Scales/Typologies**

(More in-class stuff, because exam is next week)

Topics Covered:  
Surveys  
Error in sampling  
Population  
Random sampling  
Standard error for percentage  
Experiments

**February 6th**

**Week Five: Probability**

**Quiz #1 (Open Book, Open Note)**

Topics Covered:

Chance

Random draws

Conditional probability with and without replacement

Multiplication rule

Independence

Mutual exclusivity

**February 13th**

**Week Six: Correlation and Regression**

Topics covered:

Correlation coefficient

Changing standard deviations

Ecological Correlations

The Regression Method

Regression Fallacy

**February 20th**

**Week Seven: Multiple Regression, Error**

Topics Covered:

Computing Residual Mean Square error

Plotting Residuals

Slope and Intercept

Method of Least Squares

**February 27th**

**Week Eight: Sampling Continued--Analysis of**

**Variance**

Quiz #2: Open Book, Open Note

Topics Covered:

Confidence Intervals

Bootstrap

The Sample Average

**March 6th**

**Week Nine: Analysis of Variance/Hypothesis Testing**

ANOVA I,II

Use with Confidence Intervals

Read 3 academic articles using different research models  
(experimental design, regression, surveys)

**March 13th**

**Week Ten: Hypothesis Testing/Wrap Up**

Pick up Take Home Final

**March 20th**

**Take Home Final Due**

Take Home Final Due-Please Sign Honor Code on Front of Page