

## **Quantitative Methods: Analyzing People**

4 credit mandatory elective MA class

by Levente (Levi) Littvay

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Class: Wed 13:30 & Fri 13:30 Office Hours: Wed 15:30-17:00 & Fri 15:30-17:00

(Appointment is always required 24 hours before meeting or you can't expect me to be there. Email me or call me.)

**Class Website:** <http://e-learning.ceu.hu>

You need to sign up for the on-line class. Once the class has started, you can log in with your CEU ID and password. The code to sign up for the class is: **downs**

### **Summary**

A large portion of political science research published today utilizes statistical analysis. It is crucial for political scientists to be familiar with the most commonly used statistical techniques to be able to read and understand the literature. The focus of this course is to get behind the numbers and provide a basic overview of the most commonly used statistics. The goals of the course are to provide students with the most basic tools to understand quantitative political science literature, build a foundation for those who wish to apply these techniques. It aims to introduce supplemental information on appropriate design of quantitative research and the principles of data collection and handling. Beyond the most basic concepts we will utilize dedicated statistical computer software to help us analyze social science data. This will minimize the need for calculating mathematical statistics by hand. While the core materials, the notes and the textbooks are identical for both Quantitative Methods courses but the assignments, the exam and in class quizzes will predominantly focus on problems *where we wish to understand why people do what they do in the context of political behavior*. Both courses will arm you with the ability to understand and conduct basic statistical analysis independent of the specific topic of research (people or countries).

### **Learning Outcomes:**

The goal of the course is to provide students with the most basic tools to understand quantitative political science literature. At the conclusion of the course students should be able to comprehend literature published in ranked political science journals using any of the statistical methods listed (holding the last few topics if we fall behind) and correctly conduct analysis of their own using statistical software.

### **Evaluation**

First half of the class will be assessed through occasional assignments, occasional quizzes and a mid-term exam. After that regular assignments will be given. All assignments and quizzes will be weighed equally and there could be several assignments due for a single class. In addition to these the class will include a final paper. The topic of the project has to be pre-approved according to the schedule. Attendance (with timely arrival) is **required**. Late arrivals are counted as unexcused absences. Three unexcused absences will lead to an automatic failure of the class. If you will miss a class or come late for any reason, make sure I know about it **before** the class. (Even if it is a few minutes before class.)

## Grading

Exam 30%  
Quizzes and Assignments 40%  
Project Proposal 10%  
Final Project 20%

## Important Notice

Complete academic honesty is expected of everyone. Failure to comply with this requirement will result in automatic failure in this course (and subsequently in the program) and additional disciplinary action on higher levels. This is an American university and American standards will be applied. For more information about these standards see: [http://en.wikipedia.org/wiki/Academic\\_dishonesty](http://en.wikipedia.org/wiki/Academic_dishonesty) **(READ VERY CAREFULLY!)**

All assignments are to be done individually. You can talk about how to do it but none of the actual work can be done in a group. Any evidence to the contrary will be investigated.

## Schedule

Week 1-1 - Sep 22 - Descriptive Stats and Variability - **Read: Preface, Ch 1, 2, 3, 4**  
**(NOTE how there are readings due the first class!!!)**  
Week 1-2 - Sep 24 - z test - **Ch 5**  
Week 2-1 - Sep 29 - Probability - **Ch 6**  
Week 2-2 - Oct 1 - Central Limit Theorem - **Ch 7**  
Week 3-1 - Oct 6 - Hypothesis Test - **Ch 8**  
Week 3-2 - Oct 8 - t test (sum up ANOVA)- **Ch 9, Ch 11**  
Week 4-1 - Oct 13 - Estimation - **Ch 12**  
Week 4-2 - Oct 15 - Correlation - **Ch 15 - Assignment: Jeffery and Cover 1989 (You are expected to do independent research on what the interrater reliability statistic means.)**  
Week 5-1 - Oct 20 - Regression  
Week 5-2 - Oct 22 - Chi-Square Test - **Ch 16 – Jeffery and Cover due - Assignment: Smith et al 2007**  
Week 6-1 - Oct 27 - Review– **Smith et al 2007 due**  
Week 6-2 - Oct 29 - Exam 1 (review could be cancelled with an optional session scheduled)  
(Note: from this point on expect take home assignments every class)  
Week 7-1 - Nov 3 - Imputing and Transforming Data (start thinking about final paper topic)  
Week 7-2 - Nov 5 - Univariate Statistics  
Week 8-1 - Nov 10 - Importing Data  
Week 8-2 - Nov 12 - Crosstabs (Start Thinking about data)  
Week 9-1 - Nov 17 - Chi-square Tests and Correlations  
Week 9-2 - Nov 19 - z & t test - **Ch 10 (Talk to me or Paul about final project and data)**  
Week 10-1 - Nov 24 - Regression - **Read: Lewis-Beck 1980**  
Week 10-2 - Nov 26 - Diagnostics - **Read: Fox 1991 - Research Proposal AND DATA is Due – Assignment: Matland 1994**  
Week 11-1 - Dec 1 - Reliability & Validity - **Read: Carmines & Zeller 1979 - Matland 1994 due**  
Week 11-2 - Dec 3 - Logistic Regression - **Read: Pampel 2000**  
Week 12-1 - Dec 8 - Factor Analysis - **Read: Kim and Mueller 1978a and 1978b**  
Week 12-2 - Dec 10 - What else is out there

**Textbook:**

Frederick J Gravetter and Larry B. Wallnau. *Essentials of Statistics for the Behavioral Sciences*. (The library has several copies of the textbook on reserve.)

**Additional Books:**

Michael Lewis-Beck. (1980) *Applied Regression: An Introduction*. SAGE

John Fox (1991) *Regression Diagnostics*. SAGE

Edward Carmines and Richard Zeller (1979) *Reliability and Validity Assessment*. SAGE

Fred Pampel (2000) *Logistic Regression: A Primer*. SAGE

Jae-On Kim & Charles Mueller (1978a) *Introduction to Factor Analysis: What It Is and How To Do It*. SAGE

Jae-On Kim & Charles Mueller (1978b) *Factor Analysis: Statistical Methods and Practical Issues*. SAGE

**Articles:**

Matland, Richard (1994) "Putting Scandinavian Equality to the Test: An Experimental Evaluation of Gender Stereotyping of Political Candidates in a Sample of Norwegian Voters" *British Journal of Political Science* 24(Apr): 273-292.

Segal, Jeffrey and Albert D. Cover (1989) "Ideological Values and the Votes of United States Supreme Court Justices." *American Political Science Review* 83(Jun): 557-565.

Smith, Kevin, Christopher Larimer, Levente Littvay, and John Hibbing (2007) "Evolutionary Theory and Political Leadership: Why Certain People Do Not Trust Decision-Makers" *Journal of Politics* 69(May): 285-299.