Syllabus

L32 363. Quantitative Political Methodology
Monday and Wednesday 11:00-12:00
Seigle Hall 304
Labs Thursday and Friday (Misc.)
Applied Statistics Classroom (Seigle Hall L016)

Instructor Information

Andrew D. Martin, Ph.D.
Professor and Chair, Department of Political Science, Arts &
Sciences
Professor and CERL Director, School of Law
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    (email Kate Hoops khoops@law.wustl.edu to schedule)

Textbook

Alan Agresti and Barbara Finlay. 2009. *Statistical Methods
for the Social Sciences, Fourth Edition*. Upper Saddle River,
NJ: Prentice Hall. ISBN: 978-0130272959.

Course Description

What is the probability that two states will go to war in a
particular year? How likely is it that Justice Sotomayor will
vote to grant *cert* in an abortion rights case? How strong is
the relationship between issue preferences and voter
behavior? Do domestic political institutions systematically
impact currency markets? The use of quantitative methods
allows political scientists to answer these types of
questions.

This course is an introduction to research methodology and
quantitative analysis for social scientists. Students will be
introduced to the logic of social scientific inquiry, and to the
basic statistical tools used to study politics. Students will
learn and apply the following to answer substantive
questions: measurement, descriptive analysis, correlation,

graphical analysis, hypothesis testing, confidence intervals, analysis of variance, and regression analysis. Major components of the course include learning how to collect, manage, and analyze data using computer software, and how to effectively communicate to others results from statistical analyses.

Requirements and Evaluation

The requirements for this course are simple---do the readings ahead of time, attend class and labs, and complete the assignments on time. The twice-a-week lectures will focus primarily on substantive issues as well as the statistical issues covered in the readings. The lab sessions will serve as a software tutorial, as well as a seminar-like setting where students can discuss research design. Lab instructors will also introduce new statistical material covered in the text but not in the lecture. Expect to leave the lab session each week with the ability to implement the analyses we covered in the lecture, and a good understanding of why you would want to do them.

Student evaluation will be based on homework assignments and three examinations. Students will be given weekly homework assignments (these will be made available on Wednesdays). Unless there is prior announcement, these assignments will be due in class the following Wednesday, and will be returned no later than the subsequent Monday. We will also post an answer key on Telesis. Students are encouraged to work together on homework assignments, although each student is responsible for turning in their own work. Homeworks will comprise 25% of the final grade. The lowest homework grade will be dropped when computing each student's homework score.

There will be two mid-term exams (as noted on the schedule). Each midterm will make up 20% of the final course grade. There will also be a final exam as scheduled by the undergraduate college that will count for 35% of the final course grade.

Grades will be assigned as follows: 90%-100% A, 80%-90% B, 70%-80% C, 60%-70% D, 0%-60% F. Plusses or minuses will be given for scores within two points of a cutoff, and by discretion of Professor Martin.

Late assignments will not be accepted, and no incompletes will be assigned, but for extreme circumstances. Failure to meet the requirements of the course will result in a failing grade. If a student needs to miss an examination or requires special accommodations, prior arrangements should be made with Professor Martin.

Teaching Assistants

There are two graduate teaching assistants assigned to this course. All of the teaching assistants concentrate in social science or applied statistics, and have vast experience in applied quantitative analysis. They will each hold office hours.

Graduate TA
Ms. Morgan Hazelton
Email: mwhazelt@wustl.edu
Office Hours: Friday, 2:00-4:00, Seigle Hall 212

Graduate TA
Mr. Santiago Olivella
Email: olivella@wustl.edu
Office Hours: Tuesday 3:00-5:00, Seigle Hall 258

Each laboratory session will be led by one of the teaching assistants. Most grading will be done by the graduate TAs; some will be done by Professor Martin. You should meet with the graduate TAs with any concerns about evaluation. I am happy to meet with students about grading issues only after they have met with the graduate TAs. The graduate teaching assistants will work closely in conjunction with Professor Martin on all issues of grading and student evaluation. I encourage you to get to know the teaching assistant responsible for your lab.

Course Evaluation

Course evaluation will take place online at http://evals.wustl.edu from late November and early December. All students who complete the course evaluation will receive one percentage point of extra credit toward the final course grade. These evaluations are an extremely important tool we use to make this course better.

Software

In the lab sessions and to complete your homework assignment you will be using the R statistical package (http://www.r-project.org/). This package is widely used in political science, economics, psychology, sociology, and biostatistics. R is available for every computing platform, and most importantly, is free. As such, you need to rely on computer labs to complete your assignments. Please feel free to contact Professor Martin or a teaching assistant if you have any questions about software.

Calendar

Note:	<Red Text> assignments	☑Expand Topics ☐ Expand Assignments ☑Include History

Date	Time	Description

09/01/10 Wed	11:00A-12:00P	Session 1

Introduction and Organization

09/06/10 Mon	11:00A-12:00P	Labor Day
09/08/10 Wed	11:00A-12:00P	Session 2

Measurement
Sections 1.1-1.4, 2.1-2.2

09/13/10 Mon	11:00A-12:00P	Session 3

Sampling
Sections 2.3-2.5, 3.1

09/15/10 Wed	11:00A-12:00P	Session 4

Location and Scale
Sections 3.2-3.5, 3.7

09/20/10 Mon	11:00A-12:00P	Session 5

Probability Distributions
Sections 4.1-4.3

09/22/10 Wed	11:00A-12:00P	Session 6

Inference
Sections 4.4-4.7

09/27/10 Mon	11:00A-12:00P	Session 7

Estimation
Sections 5.1, 5.3

09/29/10 Wed	11:00A-12:00P	Session 8

Proportions and Sample Size
Sections 5.2, 5.4, 5.6

10/04/10 Mon	11:00A-12:00P	Session 9

Review and Catch-Up

10/06/10 Wed	11:00A-12:00P	Session 10

Exam One

10/11/10 Mon	11:00A-12:00P	Session 11

Hypothesis Testing
Sections 6.1-6.3

10/13/10 Wed	11:00A-12:00P	Session 12

Type I and Type II Errors
Section 6.4

10/18/10 Mon	11:00A-12:00P	Session 13

Small Sample Inference
Section 6.7

10/20/10 Wed	11:00A-12:00P	Session 14

Comparing Means and Proportions
Section 7.1-7.3, 12.1

10/25/10 Mon	11:00A-12:00P	Session 15

Small Sample Comparisons
Section 7.4, 7.8

10/27/10 Wed	11:00A-12:00P	Session 16

Tables and Categorical Variables
Sections 8.1-8.3

11/01/10 Mon	11:00A-12:00P	Session 17

Review and Catch-Up

11/03/10 Wed	11:00A-12:00P	Session 18

Exam Two

11/08/10 Mon	11:00A-12:00P	Session 19

Lines and Linear Regression
Sections 3.5, 9.1-9.2

11/10/10 Wed	11:00A-12:00P	Session 20

Simple Linear Regression
Sections 9.3-9.4

11/15/10 Mon	11:00A-12:00P	Session 21

Inference for Linear Regression
Section 9.5

11/17/10 Wed	11:00A-12:00P	Session 22

Assumptions and Model Fit
Sections 9.6-9.7

11/22/10 Mon 11:00A-12:00P Session 23

                            Thanksgiving [NO CLASS]
11/24/10 Wed 11:00A-12:00P Thanksgiving Break
11/29/10 Mon 11:00A-12:00P Session 24

                            Multivariate Analysis and Statistical Control
                            Sections 10.1-10.5, 11.1
12/01/10 Wed 11:00A-12:00P Session 25

                            Multiple Regression II
12/06/10 Mon 11:00A-12:00P Session 26

                            Logistic Regression
                            Sections 15.1-15.3
12/08/10 Wed 11:00A-12:00P Session 27

                            Review and Catch-Up
12/21/10 Tue 10:30A-12:30P Final Exam

Assignments

Sort by Due Date ☐