

POL 3085
Quantitative Analysis in Political Science
Fall 2006

Class Time and Location: TTh 11:15-12:30, Blegen Hall 115

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Course Description

Political Science 3085 is an upper-level undergraduate introduction to the research methods used by political scientists to study political behavior and institutions. The objective of this class is to provide an introduction to the tools to interpret political phenomena from a systematic and analytical perspective. In this course, we will consider issues of research design and hypothesis formulation, study basic statistical techniques, and learn how to implement these methods and manage data with computer software.

Required Texts

There are three required texts for the course, which are available at the bookstore.

Pollock, Philip H. 2005. *The Essentials of Political Analysis*. Second Edition. Washington, D.C.: Congressional Quarterly Press.

Pollock, Philip H. 2005. *An SPSS Companion of Political Analysis*. Second Edition. Washington, D.C.: Congressional Quarterly Press.

Lloyd Jaisingh. 2005. *Statistics for the Utterly Confused*. Second Edition. McGraw-Hill.

The first two are bundled together for a discount. You may also be required to read selections from academic journals, which will be announced in class and on the course website through WebCT at <http://webct.umn.edu>.

Software

This course will use the statistical program SPSS for many of the assignments, and the analysis for the paper. SPSS is available in some of the campus computer labs. A six-month rental of SPSS Career Starter version 14 can be downloaded from the online store at E-Academy (<http://www.e-academy.com>) for \$45.99. We will have occasional lab sessions to demonstrate how to use the software. These sessions will be held during

regular class meeting time, but will be held in a computer lab. The location for these sessions will be announced in class.

Evaluation

Your grade for the class will be based on the midterm and final exams, frequent homework assignments, a research paper, and class participation.

Midterm exams:	15 percent each
Final exam:	20 percent
Final paper:	15
Assignments:	20
Class Participation:	15

Grading is on an A-F base. The CLA publication "Classroom, Grading, and Examination Procedures" defines this scale as

- A** Achievement **outstanding** relative to the level necessary to meet course requirements.
- B** Achievement **significantly above** the level necessary to meet course requirements.
- C** Achievement **meeting the basic course requirements** in every respect.
- D** Achievement **worthy of credit** even though it does not fully meet the basic course requirements in every respect.
- F** Performance **failing to meet the basic course requirements**.

The exams will primarily be calculation problems, short answer, and short essay. A calculator will be necessary. The second midterm will test only on material covered since the first midterm, but the final exam will be cumulative. Homework will be due at the beginning of the class period on the assigned due date, and late assignments will not be accepted. Class participation is based on your involvement in class discussions, class attendance, and quizzes. Roll will be called at the beginning of class. If you need to leave class early on a particular day, please inform the instructor before class begins; otherwise, students who leave early will be counted absent. Quizzes are unannounced; dates of the quizzes are determined through a pseudo-random number generator.

If you miss an exam, and the absence is not due to illness, family emergency, or an University of Minnesota sanctioned absence, then there is a penalty of 5% of the total grade, with the remaining 10% of the grade assigned to the final. If you miss both exams, and both absences are unexcused, you automatically fail the class. Make-up exams are available for excused absences only. In those cases, the exam must be rescheduled promptly; if the student fails to retake the exam in a timely fashion, the unexcused absence penalty will be enforced. Unexcused absences on the final will result in a zero for the exam. Incompletes are only provided when extraordinary circumstances (e.g., a substantial illness that causes an extended absence) prevent the completion of work.

For the research paper, you are required to analyze a research question in political science. You will develop a theoretical explanation for some political phenomena that is of interest to you, likely based on your previous coursework in political science. From this theory, you must formulate hypotheses concerning the relationship between a

dependent variable and some independent variables. Testing these hypotheses will require the collection of data and applying the appropriate statistical methods learned in this course. In the paper, which should be approximately 10-12 pages long, you should explain the research design, present the findings from the statistical analysis, and discuss your conclusions regarding your hypotheses. The organization of the paper and how to conduct the analysis will be discussed later in the class. The paper will be due on the last day of class, Tuesday, December 12. There will be preliminary due dates for the paper topic, hypotheses, and data description.

Academic Honesty

Students should be aware of the University Student Conduct Code regulations regarding academic honesty. This code defines scholastic dishonesty as follows:

Scholastic Dishonesty: Scholastic dishonesty means plagiarizing; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; altering, forging, or misusing a University academic record; or fabricating or falsifying data, research procedures, or data analysis.

Students responsible for scholastic dishonesty will be penalized, including the possibility of receiving an "F" or "N" for the course. If you have any questions regarding specific assignments or exams, ask the instructor. More information concerning academic dishonesty can be obtained at the Office for Student Academic Integrity website, <http://www.osai.umn.edu>.

Disabilities

Any student with a documented disability condition (e.g., physical, learning, psychiatric, systemic, vision, hearing, etc.) who needs to arrange reasonable accommodations should contact the instructor and Disability Services at the beginning of the semester. Disability Services is located at 180 McNamara Alumni Center; they can be contacted at (612) 626-1333 (TTY or voice), or through their website at <http://ds.umn.edu>.

Final Note

The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.

Schedule

Introduction and Measurement

- T 9/5 Introduction; Measurement of Concepts
Essentials, ch. 1
- Th 9/7 Reliability and Validity; Levels of Measurement
Essentials, ch. 1

Research Design

- T 9/12 Explanations and Hypotheses
Essentials, ch. 2

Summarizing Variables

- Th 9/14 Summarizing Variables:
Confused, chs. 1-4
Essentials, ch. 3 (pp. 48-58)
- T 9/19 Summarizing Variables: continued
Computer: Intro to SPSS, Descriptive Statistics
Companion, ch. 1,2

Making Comparisons

- Th 9/21 Making Comparisons
Essentials, ch. 3 (pp. 58-70)
Confused, ch. 6
- T 9/26 Making Comparison, continued
Computer: crosstabulation
Companion, ch. 3
Computer: Transforming Data
Companion, ch. 4
- Th 9/28 Making Comparisons: Correlation and Simple Regression
Confused, ch. 5

Controlling for Confounding Effects

- T 10/3 Causal Relationships
Essentials, ch. 4 (pp. 73-81)
- Th 10/5 Making Controlled Comparisons
Essentials, ch. 4 (pp. 82-94)
- T 10/10 Computer: Layered Crosstabs
Companion, ch. 5

Th 10/12 First Midterm

Statistics

Introduction to Probability

- T 10/17 Statistical Inference Overview
 Essentials, ch. 5
- Th 10/19 Random Variables and Probability
 Confused, ch. 7
- T 10/24 Discrete Probability Distributions and Expectations
 Confused, ch. 8
- Th 10/26 Normal Probability Distribution; Sampling Distribution and CLT
 Confused, chs 9-10

Statistical Inference for Means

- T 10/31 Tests of Significance: t-tests (overview), sampling
 Essentials, ch. 6 (121-130)
 Confidence Intervals for Means – Large Samples
 Confused, ch. 11
 Confidence Intervals for Proportions
 Confused, ch. 11
- Th 11/2 Hypothesis Tests – Large Samples
 Confused, ch. 12
- T 11/7 Confidence Intervals and Hypothesis Tests – Small Samples
 Confused, ch. 13
 Computer: t-tests
 Companion, ch. 6
- Th 11/9 More than two groups: ANOVA

T 11/14 Second Midterm

Statistical Inference for Distributions

- Th 11/16 Chi-Squared and other measures of association
 Essentials, ch. 6 (130-142)
 Confused, ch. 14
- T 11/21 Measures of Association, continued (handouts, web links)
 Computer: Chi-Squared, measures of association
 Companion, ch. 7

Regression Models

- T 11/28 Correlation and Regression; Multiple Regression
 Essentials, ch 7 (144-158)
 Confused, ch. 5
- Th 11/30 Multiple Regression: Dummy Variables and Interactions
 Essentials, ch. 7 (159-168)

T 12/5 Computer: Regression
 Companion ch. 8, 9

Th 12/7 Logistic Regression
 Essentials ch. 8
 Logistic Regression (computer)
 Companion ch. 11

T 12/12 Cleanup; Review for Final; Paper due

12/20 Final Exam, 1:30-3:30pm

STANDARD STATEMENT ON COURSE REQUIREMENTS
POLITICAL SCIENCE DEPARTMENT

(Note: For further information, please see the University "Classroom, Grading, and Examination Procedures" brochure online at: <http://www.cla.umn.edu/cgep/>)

1. The two grading systems used are the ABCDF and S-N. Political Science majors must take political science courses on the ABCDF system; non-majors may use either system. In all political science courses the bottom line for the S grade is the equivalent of the C- grade; in other words, what is normally considered as D level work will be assigned a grade of N on the S-N system. All students, regardless of the system used, will be expected to do all work assigned in the course, or its equivalent as determined by the instructor.
2. The instructor will specify the conditions, if any, under which an "Incomplete" will be assigned instead of a grade. No student has an automatic right to an I. The instructor may set dates and conditions for makeup of work, if it is to be allowed. The Department of Political Science administers a general make-up exam every quarter for students who have written permission from the Instructor to make up a missed final examination. Inquire at the Undergraduate Advising office (1282 Social Sciences) for the date scheduled for the make-up.
3. Inquiries regarding any change of grade should be directed to the instructor of the course. A student who alleges unfairness on the part of an instructor is entitled to file a grievance with the Department's Grievance Committee.
4. Students are responsible for class attendance and all course requirements, including deadlines and examinations. The instructor will specify if class attendance is required or counted in the grade for the class.
5. The College does not permit a student to submit extra work in an attempt to raise his or her grade, unless the Instructor has specified at the outset of the class such opportunities afforded to all students.
6. The College has defined scholastic misconduct broadly as "any act that violates the rights of another student in academic work or that involves misrepresentation of your own work." Scholastic dishonesty includes, (but is not necessarily limited to): cheating on assignments or examinations; plagiarizing, which means misrepresenting as you own work any part of work done by another; submitting the same paper, or substantially similar papers, to meet the requirements of more than one course without the approval and consent of all instructors concerned; depriving another student of necessary course materials; or interfering with another student's work." Instructors may define additional standards beyond these. Further information is available at <http://www1.umn.edu/regents/policies/academic/StudentConductCode.html>.
7. Students with disabilities that affect their ability to participate fully in class or to meet all course requirements are encouraged to bring this to the attention of the instructor so that appropriate accommodations can be arranged. Further information is available at the Disability Services website: <http://ds.umn.edu/>
8. University policy prohibits sexual harassment as defined in the 12/11/1998 policy statement. The full statement is available at: <http://www1.umn.edu/regents/policies/humanresources/SexHarassment.html>
Complaints about sexual harassment should be reported to the University Office of Equal Opportunity at 419 Morrill Hall.