

Political Data Analysis
Political Science 201
Fall 2021

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Classroom: Behavioral Sciences Building 281
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Office Hours: MWF 09:00 – 09:50 AM
CRN: 13213

201 Political Data Analysis

3 hours. Introduction to basic elements of statistics and data analysis for political science. Includes descriptive and inferential statistics; introduction to UIC computer facility and statistics software. ***Prerequisite(s)***: MATH 090 or MATH 092 or MATH 118. **Meets M/W/F 9:00-9:50 AM**

I. Introductory Statement

Americans have a love-hate relationship with statistical analysis. Sports fans can't seem to get enough of them, devouring WAR (wins above replacement), OPS (on-base percentage + slugging percentage), o-zone starts and quarterback ratings. Business and advertising use it to better market their products and increase profit margins. And people sometimes loathe the way statistics are manipulated to support almost any conclusion, as exemplified by one of Mark Twain's most famous quips of escalating mendacity, "lies, damned lies, and statistics."

This course is designed to help students understand when, how and why to use statistical analysis, and to provide them with the necessary skills to evaluate the statistical analyses they encounter in their studies and their everyday lives. The focus of the classroom instruction will be on conceptual understanding of statistical theory, not manual number crunching. The mathematical calculations these days are crunched by computers, and we will explore that facet of analysis in a weekly SPSS (Statistical Package for Social Sciences) lab run by co-instructor and graduate student Noah Blakemore Briggs.

Among the topics covered in this course will be descriptive statistics, probability theory, standard error and standard deviation, the t-test, the Chi-square test and multiple regression analysis.

II. Course Format

The course will be in-person and in the classroom. We will be required to follow all university pandemic precautions, which will be discussed in the detail the first few classes. Student performance will be evaluated on the basis of two exams, each covering half of the textbook content, a class attendance/participation grade, a lab exercise grade and a paper reviewing one of two books, either *Moneyball* or *Soccernomics*. Both exams will be a combination of short answer, essay, multiple choice, and fill-in-the-blank. Students are expected to attend class regularly, having read and thoughtfully considered the readings for each class. Please stay current with the reading. Class will consist of a mix of lecture and in-class/lab exercises. Starting in late September, weekly Friday classes will consist of a computer lab taught by co-instructor Noah Blakemore Briggs. To provide students flexibility for Thanksgiving week travel, the class lectures for Monday 11/22 and Wednesday 11/24 will be conducted online using Blackboard Collaborate. Students are also expected to follow the university's code of conduct: https://www.ethics.uillinois.edu/compliance/university_code_of_conduct.

III. Readings and Materials

1. *Elementary Statistics in Social Research*, Jack Levin, James Alan Fox, David R. Forde, (Allyn & Bacon, 2013)
2. *Moneyball: The Art of Winning an Unfair Game*, by Michael Lewis, (W.W. Norton, 2004)
3. *Soccernomics: Why England Loses; Why Germany, Spain, and France Win; and Why One Day Japan, Iraq, and the United States Will Become Kings of the World's Most Popular Sport*, by Simon Kuper and Steven Szymanski (Nation Books, 2018)

IV. Book Review

This paper is a book review of one of two books: (1) *Moneyball* by Michael Lewis; or (2) *Soccernomics* by Kuper and Szymanski. The assignment is to discuss and analyze how statistics changed the games of baseball and soccer. Both sports have been played for more than a century and, yet, in a few short years statistical analysis transformed how these games are played, managed and run as businesses. The focus of this paper is on the ability of statistics to cut through the biases—what sports professionals thought they *knew* to be true—and quickly change entrenched cultures. Do NOT simply tell me what the books are about. The focus is on statistical analysis. The format is 4-5 double-spaced pages at 12-point font.

V. Computation of Course Grade

Class attendance/participation	20%
Mid-term Exam	20%
Final	20%
<i>Moneyball</i> or <i>Soccernomics</i> book review	20%
Lab Exercises	20%

VI. Weekly Course Schedule

Week One: 08/23 – 08/27 (NO LAB)

Introduction to the course

Lecture: Overview of course: Statistical analysis, variation, central tendencies, variables, measurement

Why the Social Researcher Uses Statistics

Read: Chapter One (C1) in *Elementary Statistics in Social Research (ESSR)* by Levin et al.

NO LAB: Lectures MWF

Week Two: 08/30 – 09/03 (NO LAB)

Organizing the Data

Read: C2 *ESSR*

Measures of Central Tendency

Read: C3 *ESSR*

NO LAB: Lectures MWF

Week Three: 09/06 – 09/10 (LABOR DAY: NO CLASS 09/06; NO LAB)

Measures of Variability

Read: C4 *ESSR*

Probability and the Normal Curve

Read: C5 *ESSR*

NO LAB: Lectures MWF

Week Four: 09/13 – 09/17 (FRIDAY LAB)

Probability and the Normal Curve

Read: C5 *ESSR*

Week Five: 09/20 – 09/24 (FRIDAY LAB)

Samples and Populations

Read: C6 *ESSR*

Week Six: 09/27 – 10/01 (FRIDAY LAB)

Testing Differences between Means

Read: C7 *ESSR*

Week Seven: 10/04 – 10/08 (FRIDAY LAB)

Testing Differences between Means

Read: C7 *ESSR*

Week Eight: 10/11 – 10/15 (FRIDAY LAB)

Analysis of Variance

Read: C8 *ESSR*

Week Nine: 10/18 – 10/22 (FRIDAY LAB)

REVIEW FOR MID-TERM EXAM

MID-TERM EXAM WEDNESDAY 10/20

Week Ten: 10/25 – 10/29 (FRIDAY LAB)

Nonparametric Tests of Significance

Read: C9 *ESSR*

Week Eleven: 11/01 – 11/05 (FRIDAY LAB)

Correlation

Read: C10 *ESSR*

Week Twelve: 11/08 – 11/12 (FRIDAY LAB)

Correlation

Read: C10 *ESSR*

Week Thirteen: 11/15 – 11/19 (FRIDAY LAB)

Regression Analysis

Read: C11 *ESSR*

Week Fourteen: 11/22 – 11/26 (NOTE: THE CLASS LECTURES ON MONDAY 11/22

AND WEDNESDAY 11/24 WILL BE CONDUCTED ONLINE USING

BLACKBOARD COLLABORATE; NO CLASS OR LAB FOR THANKSGIVING

11/26)

Regression Analysis

Read: C11 *ESSR*

Week Fifteen: 11/29 – 12/03

Nonparametric Measures of Correlation

Read: C12 *ESSR*

Choosing Statistical Procedures for Research Problems

Read: C13 *ESSR*

***MONEYBALL* or *SOCERNOMICS* BOOK REVIEW DUE 12/03**

REVIEW FOR FINAL EXAM (12/04)

Week Sixteen: 12/06 – 12/10

FINAL EXAM TBA