Introduction to Statistical Methods in Political Science
POL 201.30 – POL 501.30

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Contact Information

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- **Office Hours:** Mondays 2:00PM – 4:00PM, or by Appointment

- **Class Hours:** Asynchronous Online

- **Office:** SBS N721

- **Classroom:** Online (Brightspace)

Description

Elementary statistical methods in empirical political science, focusing on the analysis of public opinion, survey research designs, sampling, and probability. The course considers the application of descriptive and inferential statistics to testing hypotheses on various political issues.

Objectives

The main goal of the course is to provide students with an introductory level of statistical literacy and fluency. At its core, doing statistics involves making principled inferences about the characteristics of a collection of units of interest (e.g., people, organizations, institutions, states, countries, etc.). To achieve this, the course will provide students with a solid foundation in the concepts and practices of statistics as applied to public policy and political science. Students will learn to conduct and interpret fundamental statistical analyses in applied real-world contexts. The course will also emphasize understanding the limits of statistical inference and the conditions under which statistical conclusions are valid.

By the end of the course, students should be able to:

- Understand basic statistical concepts and methods used in public policy and political science research.

- Apply descriptive and inferential statistical techniques to analyze data.

- Interpret and examine statistical analyses frequently used in public policy and political contexts.

- Develop critical thinking skills necessary for questioning and assessing the reliability and validity of basic statistical analyses in public policy and political contexts.

Required Textbook

Diez, D., Çetinkaya-Rundel, M., Barr, C. (2019). *OpenIntro Statistics* (4th Edition). United States: OpenIntro, Incorporated.

It is imperative that you buy the physical copy of the book, as you can consult it while doing the tests. You cannot use any other electronic devices while you take the test, and Respondus Lockdown Browser will only give you access to the quiz.

I strongly recommend getting a hard copy of the book (the paperback version on Amazon costs around \$25). This course demands significant independent study, and it is highly recommended to possess a physical copy of the textbook for this purpose. Alternatively, you can get the free digital (PDF) version of the book here: `https://www.openintro.org/book/os/`.

Instruction Method

This asynchronous online course is structured around weekly online lectures, quizzes, and a final exam. Each online lecture will guide you through concepts, theory, and applications. You will watch videos and read content. The online lectures are intermixed with comprehension questions to reinforce your understanding as you learn.

Also, you will greatly benefit by taking notes from the online lectures, and review the materials before each online test. I will give you access to the course's lecture slides for you to review while you take the quiz.

After completing each online lecture, you should reinforce your learning by reading the corresponding textbook chapter and reviewing your notes and any practice problem sets provided.

Requirements and Grades

Grades

A student's final grade will consist of the following components:

- **Lecture Participation (Embedded Comprehension Quizzes):** 25%

- **Online Quizzes (5 Total):** 50% (10% each)

- **Final Exam:** 25%

All assessments are open-book meaning you can review the physical or printed copy of the book and your printed or handwritten notes. All assessments will follow an online proctoring protocol using **Brightspace's Respondus Lockdown browser** integration. The details of the protocol will be informed during the first week of classes. The protocol is designed to ensure testing conditions' integrity and increase honesty in exam taking. At the end of each quiz and exam, students will be probed via webcam to show their handwritten work to prove that you completed the testing independently.

Letter Grade Scale

Grade	Course Score Points
F	≤ 59.99
D	60.00–64.99
D+	65.00–69.99
C-	70.00–72.99
C	73.00–76.99
C+	77.00–79.99
B-	80.00–84.99
B	85.00–87.99
B+	88.00–89.99
A-	90.00–94.99
A	94.00–100.00

Weekly Requirements

Each week students are expected to complete the following sequence of assignments:

1. Complete the online lecture for the unit (including watching videos, reading content, and responding to comprehension questions).

2. Read and study the assigned lecture slides.

3. Read the book chapter, review your notes, and complete practice problem sets for self-assessment.

4. Complete the assigned weekly quiz or, in Week 6, the final exam.

Schedule

Week (Date Range)	Topics Covered	Tasks
Week 1 (May 26–Jun 01)	Unit I: Introduction to Data. Unit II: Summarizing Data.	• Read/watch Chapters 1 & 2 • Complete the online lecture and complete embedded lecture quiz • (Optional) Practice problems • **Do: Online Quiz 1**
Week 2 (Jun 02–Jun 08)	Unit III: Probability.	• Read/watch Chapter 3 • Complete the online lecture and complete embedded lecture quiz • (Optional) Practice problems • **Do: Online Quiz 2**
Week 3 (Jun 09–Jun 15)	Unit IV: Random Variables.	• Read/watch Chapter 4 • Complete the online lecture and complete embedded lecture quiz • (Optional) Practice problems • **Do: Online Quiz 3**
Week 4 (Jun 16–Jun 22)	Unit V: Foundations for Inference. Unit VI: Inference with Categorical Data.	• Read/watch Chapters 5 & 6 • Complete the online lecture and complete embedded lecture quiz • (Optional) Practice problems • **Do: Online Quiz 4**
Week 5 (Jun 23–Jun 29)	Unit VII: Inference with Numerical Data.	• Read/watch Chapter 7 • Complete the online lecture and complete embedded lecture quiz • (Optional) Practice problems • **Do: Online Quiz 5**

Week (Date Range)	Topics Covered	Tasks
Week 6 (Jun 30–Jul 05)	Unit VIII: Introduction to Linear Regression.	- Read/watch Chapter 8 - Complete the online lecture and complete embedded lecture quiz (Optional) Practice problems **Do: Online Final Exam**

University Policies

Academic Integrity

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty is required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Professions, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty please refer to the academic judiciary website at `http://www.stonybrook.edu/commcms/academic_integrity/index.html`.

Critical Incident Management

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Student Conduct and Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.

Student Accessibility Support Center

If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact the Student Accessibility Support Center, Stony Brook Union Suite 107, (631) 632-6748, or at sasc@stonybrook.edu. They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.

Extended Absence

In the event of a short-term absence from class, students are encouraged to communicate immediately and work directly with the instructor. However, if a student is struggling with an extended absence due to a hospitalization, family illness, or death, they are encouraged to reach out to the *Student Support Team* (`https://www.stonybrook.edu/commcms/studentaffairs/studentsupport/`).

Course Policy on Generative AI Tools

Purpose: Your course grade measures *your own mastery* of the material, not whether you are capable of copying and pasting the output of ChatGPT, Gemini, Claude, or similar AI tools.

1. **No AI use on quizzes or final exam.**

Assessment	AI Use	Enforcement
Online Quizzes	Prohibited	LockDown Browser & instructor review
Final Exam	Prohibited	LockDown Browser & instructor review

   Using any AI tool during these is an academic integrity violation and will be reported.

2. **AI is allowed for learning and practice.** You *may* use AI when:

   - Studying the textbook or notes
   - Doing ungraded practice problems
   - Asking for explanations or checking your own answers

   Use AI as a tutor, not an answer key. Cross-check explanations. Do not copy AI responses into graded work. This will be considered cheating.