

POL 502: Intermediate Statistics for Public Policy

William Pollock

Fall 2017

Class Time: Monday 6-9 P.M.

Class Location: SBS N705

Email: William.Pollock@StonyBrook.edu

Office: Social and Behavioral Sciences S-735

Office Hours: Monday 4-6pm

Course Description:

This is the second class in the statistical methods sequence in the public policy program. Students will learn the basics necessary to conduct empirical research in public policy. Although a good portion of the class will be spent learning linear regression, an equal emphasis will be placed on learning how to properly interpret statistics and how to apply them to answer real world questions. The second part of the class will delve into the statistical assumptions necessary to use linear regression to test hypotheses. We will closely examine the Gauss-Markov assumptions, learn how to test for violations of these assumptions, and learn how to handle violations of these assumptions. By the end of the class, you should be able to apply these techniques to a topic that interests you. This will require you to establish a research question, independently collect and analyze data, test a hypothesis, and record and present your findings. Additionally you should be able to critically assess work that utilizes multiple regression.

Course Requirements:

ATTENDANCE: Students are expected to attend all class and are responsible for any material covered if they miss class.

READINGS: Students are expected to complete all of the assigned readings *before* class. Required readings from the book are listed for each class date below. In addition, I may post some supplementary readings on the weekly topics to Blackboard prior to our meetings.

EXAMS: There will be two exams: a midterm and a final. I will provide additional details regarding the exam format and location as the semester progresses. It is the student's responsibility to plan a schedule that avoids exam conflicts. Students are expected to arrive on time for scheduled exams. I will stop handing out exams after the first student has completed his or her test and has left the examination room.

Make-up exams will only be allowed due to a legitimate, documented reason for absence. Excused absences from tests must be discussed with the instructor on a case-by-case basis. **You must notify me of your circumstances prior to the original test date in order to receive a make-up exam.** Exceptions will only be made if prior notification is impossible by unavoidable circumstances.

HOMEWORK: Homework will be posted to Blackboard approximately one week before the due date. Some parts of the homework (and your final papers) will require the use of Stata to complete. As such, students are required to have access to a copy of Stata. Not having access to the software is not an excuse for late or missing homework. If you are having trouble accessing Stata, you must get in contact with me so that we can work out a solution. If possible please bring a laptop to class so that you can follow along with the in-class examples.

Assignments are due at the beginning of the class for which they are due. Late assignments will receive half credit. If an assignment is not turned in by 6 p.m. the day after the assignment is due, no credit will be issued for the assignment.

RESEARCH PAPER: Each student will write an approximately 10-15 page paper that empirically tests a hypothesis using linear regression. This will be a fully developed research paper, including an introduction to your topic, a review of relevant literature, discussion of your own theory, a clear statement of your operational hypothesis, presentation of your data and empirical results, and conclusion.

A one-page project proposal will be due early in the semester. Following the selection of a topic, I expect students to obtain data well in advance of the paper due date. Late papers will receive half credit. If the paper is more than one day late, it will not be accepted.

At the end of the semester students will be required to give an approximately 15 minute presentation in class on their project. The structure of the research presentations will follow that of the paper. The ultimate goal of the presentations is for me and the class to provide feedback on your projects prior to completing the final paper. Thus, your project will need to be in an advanced state (with at least preliminary data analysis) prior to the presentation date.

Grade Components:

Homework 1: 10%

Homework 2: 10%

Midterm: 15%

Final: 20%

Presentation 10%

Paper Proposal 5%

Term Paper: 25%

Participation 5%

Grade Scale:

93% or better: A

90 A-

88 B+

83 B

80 B-

78 C+

73 C

70 C-

68 D+

60 D

<60 F

Required Book:

- Studenmund, A. H. 2001. *Using Econometrics: A Practical Guide*. 6th ed. Boston: Addison Wesley.

Recommended Book:

- Acock, Alan. 2014. *A Gentle Introduction to Stata*. 4th ed. Stata Press.

- *All other assigned readings will provided by the instructor, and will be made available via Blackboard.

BLACKBOARD SYSTEM:

Blackboard will allow students to access course videos and readings. The Blackboard system is available from any computer with access to the Internet. The Blackboard address is:

<http://blackboard.stonybrook.edu>

Logging into Blackboard requires a NET ID and a Password. You can check (or change) your Net ID by logging into the SOLAR system and entering the "Security and Personal Data" Folder. Initially the password is the SOLAR ID number. This should be changed for security purposes. For additional assistance in using Blackboard, see the student consultants in the Main Library SINC site (S1460 Library).

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 are required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, 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/uaa/academicjudiciary/>.

Americans with Disabilities Act:

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, room128, (631) 632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential.

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 Judicial Affairs 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

Course Schedule

August 28th

Introduction, Review Syllabus

September 4th

No Class – Labor Day

September 11th

The Logic of Regression

--Studenmund: Ch. 1; also look over Chapter 17

September 18th

Fitting Regression Models; Thinking about Causality

--Studenmund: Chs. 2 and 3

September 25th

Assumptions and Theoretical Underpinnings of OLS

--Studenmund Ch. 4

October 2nd

Assumptions Continued/ Regression for Hypothesis Testing

Studenmund Ch. 5

Paper Proposals Due

October 9th

No Class – Homework 1 Due

October 16th

Discuss Midterm / Omitted Variable Bias / Multicollinearity

--Studenmund Chs. 6 and 8

October 23rd

Midterm Exam

October 30th

Functional Form, Outliers and Interactions

--Studenmund Chapter 7

November 6th

Heteroskedasticity and Autocorrelation

--Studenmund Chapter 9 and 10

November 13th

Correcting Violations cont'd / Making Tables & Graphs / Intro to

Binary Outcome and Other Models

--Studenmund: Chapter 13

Homework 2 Due

November 20th

Articles on Causal Inference in Public Policy

*** Data Collection Due ***

November 27th

Student Presentations

December 4th

Final Exam

December 20th
Term papers Due