

Public Policy 802: Quantitative Methods II

118 Berkey Hall
Monday 6:00pm-8:50pm

Prerequisites: PPL 801 or equivalent

Professor

Leah Lakdawala

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Office Hours: Monday and Wednesday, 1:30pm-2:30pm

Course Website: On ANGEL

Teaching Assistant

Bob Martin

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Office Hours: T/Th 9:00am-10:00am

Required Textbook

- *Introductory Econometrics*, 4th Edition, by Jeffrey Wooldridge.

Course Description

PPL 802 is a course in econometrics with focus on public policy. The course covers statistical tools commonly used to gauge economic relationships and how to apply those techniques to the logic and practice of public policy analysis. Throughout the course we develop basic research, measurement, design, and data collection issues. More importantly, specific skills and techniques for analyzing multivariate data are presented to deal with “less than perfect” data. We will discuss economic applications and analyze economic data.

The specific topics of the course include: basic probability and statistics, univariate and multivariate regression, ordinary least squares, the Gauss-Markov theorem, small and large sample inference, dummy variables, heteroskedasticity, instrumental variables, selection bias.

The prerequisites for the course include PPL 801. Some background in calculus is useful, and inadequate statistics background may make this course more difficult than necessary. The material can be difficult and the workload substantial, particularly for people who find math courses challenging. However, your payoff for all this work is a set of skills and analytical tools that are extremely useful and in high demand in the marketplace.

One central goal of this course is to provide the students with the knowledge to use and correctly interpret the output of a statistical software package. For that we will focus on *Stata* which is available in several computer labs around campus, including those in Eppley, the Computer Center, Berkey Hall and the Union. We will have lab sessions in Berkey Hall 216 throughout the semester (during class time).

Course Grade

Your course grade will be determined primarily by three exams. Problem sets will account for a small share of the final grade and will be posted on ANGEL to help you prepare for the exams.

The exams and homework will contribute to your final grade as follows.

- Mid-term 1 is worth 20%
- Mid-term 2 is worth 20%
- Final is worth 35%
- Homeworks are worth 20%
- Class participation is worth 5%

The homework assignments are designed to help you better understand the course material, give you practice with analytical problems, and prepare you for exams. Completing the homework assignments is critical in good exam performance; however, to do well on exams, you should complete all assignments AND attend class. Some of the material that we cover in class (and that is eligible to appear on exams) may not be reviewed in homework exercises.

The midterm exams will be 90 minutes long, given during the first half of class. For the final exam you will have two full hours.

Class participation is important. You are expected to read the book chapters *before* each class so that you are familiar with the topics and are able to engage in discussion during class.

Other Course Policies

Late Homework Assignments: Assignments must be turned in on time and in hard copy format. If an assignment is turned in within 24 hours after the due date, it will automatically lose 50% of the grade. No credit is given to homework assignments handed in more than 24 hours late.

Makeup Exams: If you have a significant reason that you believe would justify rescheduling an exam, you must contact me **as soon as possible**. Valid reasons for rescheduling an exam include illnesses, family events, and/or emergencies. Significant reasons that can be anticipated (e.g., required participation in University-sponsored activities, Conferences, etc.) must be given to me at least **two weeks** before the exam. For reasons that cannot be anticipated, see me immediately to make appropriate arrangements. Generally, if circumstances warrant it, alternative exam times will only be provided before the regularly scheduled exam. However, the resolution of any conflicts will be handled on a case-by-case basis.

University policy will be strictly adhered to. Cheating will not be tolerated. Disabled students will be accommodated. Religious observances will be facilitated. For the latter two issues, students must notify me at the beginning of the term so that appropriate arrangements can be made.

Proposed Course Schedule

Note that this is a tentative course schedule. As the course develops, some of the material and dates may change. I will inform you of any changes to the schedule in class and through the course website (ANGEL), which you should check regularly.

January 7: Chapter 1 – The Nature of Econometrics and Economic Data

January 14: Chapter 2 – The Simple Regression Model

January 21: University Holiday – NO CLASSES

January 28: Chapter 2 – The Simple Regression Model, continued

February 4: Chapter 3 – Multiple Regression Analysis: Estimation. **Homework 1 due.**

February 11: Chapter 4 – Multiple Regression Analysis: Inference

February 18: Midterm 1

February 25: Chapters 5 and 6 – OLS Asymptotics and Further Issues. **Homework 2 due.**

March 4: Spring Break – NO CLASSES

March 11: Chapter 7 – Binary Variables

March 18: Chapters 8 – Heteroskedasticity. **Homework 3 due.**

March 25: Chapters 9 and 10 – Specification and Data Problems and Introduction to
Time Series Data

April 1: Midterm 2

April, 8: Chapter 13 – Introduction to Panel Data Models

April 15: Chapter 15 – Instrumental Variables Estimation and Two Stage Least Squares.
Homework 4 due.

April 22: Chapters 15 and 19 – Carrying Out an Empirical Project

Final exam: Monday, April 29 - 8:00-10:00 p.m.