

Applied Statistics for Public Administration

Fall 2025

PAD 5351, CRN 12630

T 6-8:50 p.m., UGLC 338

Instructor: Carlos Olmedo, PhD

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915-204-8128

Office Hours: By appointment

Course Objectives

This course is an advanced introduction to quantitative tools pertinent in policy analysis and management. The primary emphasis is to foster analytic and critical thinking behind descriptive and inferential statistics. Upon successful completion of this course, students will be comfortable applying the logic and skills learned to policy relevant problems and decision-making. Graduate students who wish to continue polishing their skills will also be prepared to take further sections of more advanced empirical methods and foundations that are multidisciplinary in nature.

This course assumes that students have a basic familiarity with rudiments of probability (likelihood of events) and descriptive statistics (mean, median, mode, standard deviation, etc.), although an overview will be provided since they are the foundations to statistical inference and methods. It also assumes that students are comfortable with elementary algebra (at minimum know how to interpret a slope coefficient in a linear mathematical expression) and are able to work with symbolic notation (summation and product operators, subscripts, elements of the Greek alphabet, etc.).

The approach taken is more conceptual than that found in a typical introductory course in econometrics, but is complemented by an emphasis on applied statistical practice. The learning process in this course is driven by a combination of: 1) theoretical research foundations; 2) descriptive, hypothesis testing and regression estimation methods; and 3) database management and use of the *Stata* statistical software. Developing and managing datasets as well as spreadsheet and basic programming skills to conduct analysis will be a major component of this class.

Course Requirements

Students are responsible for material and content covered in class and are required to complete all assignments, as well as actively participate in class discussions in a manner that is respectful. The University provides free student licenses of the *Stata* software. Log in to the following link with your UTEP credentials, download and install the application, and then place a Service Desk call with the UTEP Helpdesk to have the *Stata* license activated.

https://www.utep.edu/technologysupport/ServiceCatalog/SOFTWARE_PAGES/soft_stata.html

You will need a laptop for in-class work. Late assignments will be downgraded and make-up exams will not be allowed unless a valid reason is provided. Grading is based on the student's contribution to the course and quality of work in the following areas:

- 5% – Class participation
- 40% – Problem sets (4)
- 40% – Exams (3)
- 15% – Semester project presentation (develop database, hypothesis and statistical test/model)

Scholastic Dishonesty Policy

Students are expected to respect the University's standards on academic dishonesty. You owe it to yourself, your fellow students, and the institution to maintain the highest standards of integrity and ethical behavior.

Students with Disabilities

The University provides academic accommodations for students with disabilities to provide equal opportunities in their studies. Students must register with the Center for Accommodations and Support Services at 915-747-5148 (cass@utep.edu) for consideration. Please communicate with me as soon as possible if you require accommodations so that you do not fall behind.

Syllabus Disclaimer

The syllabus provides an outline of what will be covered in this course. It is subject to change in case of extenuating circumstances and according to the instructional needs and interests of the class as the topics progress. Any changes will be announced in class.

Textbook

The class does not require a textbook. Lectures will be based on PowerPoint content, data exercises and selected readings organized around empirical research that students are expected to be able to summarize and interpret. It is through empirical practice that students will develop or strengthen their analytic skills as well as substantive understanding of statistical inference and regression logic.

Course Outline

Class 1: Research Methods Review (Aug. 26)

Class 2: Descriptive Statistics (Sept. 2)

Class 3: Descriptive Statistics in Stata (Sept. 9)

Class 4: Research Designs and Student Survey in Stata (Sept. 16)

Class 5: Normal Distribution (Sept. 23)

Class 6: Z-Scores (Sept. 30)

Class 7: Hypothesis and Significance (Oct. 7)

Class 8: Z-test, T-test and Significance in Stata (Oct. 14)

Class 9: T-test (Oct. 21)

Class 10: T-tests (Oct. 28)

Class 11: Comprehensive Overview (Nov. 4)

Class 12: Linear Regression (Nov. 11)

Class 13: Linear Continued and Logistic Regression (Nov. 18)

Class 14: Thanksgiving Holiday (Nov. 25)

Class 15: Student Project In Class Q&A (Dec. 2)

Class 16: Student Project Presentations (Dec. 9)