

Econ 494 - Introduction to Stata

Instructor: Zdinak, Michael

Fall 2019

Class	: Section 1 –T-R– 05:30 pm–07:00 pm Seigle Hall / L016
Office	: Seigle Hall 356
Office Hours	: TBA
Email	: zdinakmg@wustl.edu
Textbook [†]	: Colin & Trivedi. 2010. Microeconometrics using Stata: : Revised Edition, 2e. Stata Press, StataCorp LP: College Station, TX. : ISBN-13: 978-1597180733 : ISBN-10: 1597180734
Software [‡]	: Stata Statistical Software: Release 15.

Course Description

This half-semester course introduces students to the data analysis and statistical software tools used in upper-level econometrics and applied economics courses. The course is designed to serve as a bridge between introductory econometrics and practical work with real-world databases. The course will be held in the computer classroom so that students can obtain hands-on experience with data preparation, workflow, and modeling using the Stata statistical software package. Emphasis throughout the course is placed on examples of applications in economics.

Prerequisites: Prior completion, concurrent enrollment, Econ 413 (or equivalent).

[†] Optional. [‡] Required.

Drop/Add Policy & Grade Options

This course must be taken for a letter grade. The P/F and audit grade options are NOT available. The last day to add or drop the course (with a "D") is **Friday, September 6, 2019**. There is no option to withdraw (with a "W") from this course. Exceptions have only been made in the case of illness or emergency. Students cannot use Webstac to add, drop, or withdraw from this course after the first session. All requests for changes in the grade option must be directed to Dorothy Petersen (dottie@wustl.edu).

Grading Policy

The following weights will be used to determine your course grade:

- 6 Homework Assignments: 60%
- 1 Final Project: 40%

Academic Integrity

The homework and the final project are to be your own work. Evidence to the contrary will result in a failing grade, and academic disciplinary action. If you ever feel that these standards of academic integrity are not being met, please notify me or an undergraduate advisor immediately. If you are uncertain about the policies regarding academic integrity at Washington University, please refer to the following [link](#).

Homework

Homework is an integral part of this course. The best way to learn how to use Stata for data analysis and econometrics is to do it. For weeks 1-5, the assigned homework exercises will consist of questions requiring application of the tools we'll cover in class to find, download, clean, and analyze the real-world datasets most commonly used by economists.

Each assignment will be due one week after it has been assigned. Submitted files will be graded but not returned. Sample solutions will be provided. A penalty will be applied to your final grade for any late or missing assignments. You are permitted to drop one homework assignment, not the final project. I ask that you submit this request in writing.

No previous programming experience is required, but familiarity with computers and basic statistics is assumed. The final homework assignment will involve students working with the same dataset used for the final project, as described next.

Final Project

The purpose of the final project is to provide students with the opportunity to estimate, test, and interpret an economic model by utilizing the data analysis and statistical software skills learned throughout the course. Students will replicate the empirical results in a peer-reviewed article from a professional economics journal.

This replication will occur in two stages, across weeks 6 and 7 of the course.

Core Competencies

Upon completion of this course, students should be able to:

- Identify, acquire, and prepare a database for use in a research project.
- Understand and apply principles of dataset preparation and work-flow, including cleaning, documentation, automation, and replication.
- Create a data codebook and other documentation appropriate for a research project.
- Produce descriptive statistics using data collected by a survey.
- Estimate simple cross-sectional regression models.

Computer Software

Washington University participates in the Stata Campus GradPlan. Here is a [link](#) to the discounted packages. A six-month Stata/IC student license may be purchased for only \$48 [link](#). Stata 15 is also available on all computers in the Arts & Sciences Computing Lab, located in Seigle Hall room L012. Here is a [link](#) listing lab hours.

Economic Datasets

Panel Study of Income Dynamics (PSID), Integrated Public Use Microdata Series (IPUMS), Current Population Survey (CPS), Survey of Consumer Finances (SCF), National Income and Product Accounts (NIPA), Federal Reserve Economic Data (FRED), Wharton Research Data Services (WRDS), and Bloomberg Financial Data (BBD).

Tentative Course Calendar

The following calendar is tentative and subject to change. The numbers in brackets indicate the relevant chapters from the textbook.

Monday	Tuesday	Wednesday	Thursday	Friday
Aug 26th 1	27th 2 Lab 1	28th 3	29th 4 Lab 2	30th 5
Sep 2nd 6 <i>Labor Day</i>	3rd 7 Lab 3 Hw 1 due	4th 8	5th 9 Lab 4	6th 10
9th 11	10th 12 Lab 5 Hw 2 due	11th 13	12th 14 Lab 6	13th 15
16th 16	17th 17 Lab 7 Hw 3 due	18th 18	19th 19 Lab 8	20th 20
23rd 21	24th 22 Lab 9 Hw 4 due	25th 23	26th 24 Lab 10	27th 25
30th 26	Oct 1st 27 Lab 11 Hw 5 due	2nd 28	3rd 29 Lab 12 Final 1 due	4th 30
7th 31 <i>Midterms</i>	8th 32 Open Lab	9th 33	10th 34 Open Lab Final 2 due	11th 35 <i>Fall Break</i>

Tentative Course Outline

Week 1–2: Introduction to Stata

Chapter 1, Sections 1.1-1.6, Microeconometrics using Stata

Topics: Stata docs, syntax, common errors, do-files, gui, file path, structure, save, use, cd, ls, pwd, import, export, summarize, scalars, matrices, e, r, regress

Homework 1: Submit do file; download, import, & summarize Gapminder data

Week 2–3: Global and local macros in Stata

Chapter 1, Section 1.7-1.12, in textbook

Topics: Gen, egen, rename, replace, indicators, drop, keep, label, shape, destring, global, local, for, each, while, n, N, variable types, precision, dates

Homework 2: Submit do file; download, import, & summarize SCF data

Week 3–4: Stata Data Management and Graphics

Chapter 2, Section 2.1-2.6, in textbook

Topics: Formats, collapse, reshape, append, merge, twoway; scatter, line, bar

Homework 3: Do file; use global/local macros to format & clean WRDS/BBD data

Homework 4: Do file; reshape, merge, then collapse and graph NIPA/FRED data

Week 4–5: Basic Regression Analysis & Simulation Techniques

Chapter 3, Section 3.4-3.8 and Chapter 4, Section 4.1-4.4, in textbook

Topics: Regress, interactions, multicollinearity, heteroscedasticity, simulate data

Homework 5: Do file; fuzzy match and merge .dat files with scrambled names

Homework 6: Do file; find MVUE of tank problem, simulation & estimators

Week 6–7: Research Design & Final Project

Final Project 1: Replicate paper summary statistics and basic graphics

Final Project 2: Replicate and analyze selected regression.