

Syllabus
ECON 2311Q: Econometrics I
Fall 2019

Instructor: Rui Sun (rui.sun@uconn.edu)
Office Hours: Monday, 3:00pm – 4:30pm or by appointment, OAK 307
Lectures: MoWe 4:40pm – 5:55pm and MCHU 306

Course Description:

ECON 2311Q is a semester long course in introductory econometrics. Econometrics is the art and science of the estimating and testing of economic models. These estimated models can then be used for causal inference and prediction. The course will focus on multiple regression methods for analyzing data in economics and related disciplines. The objective of the course is for the student to learn how to conduct and how to critique empirical studies in economics and related fields. The mathematics of econometrics will be introduced only as needed and will not be a central focus.

Prerequisites:

ECON 1200 or both ECON 1201 and 1202; MATH 1071Q or 1110Q or 1125Q or 1131Q or 1151Q or 2141Q; and STAT 1000Q or 1100Q

Course Webpage:

Supplementary course materials will be provided on [HuskyCT](#). You should check this page regularly.

Course Materials:

There is no required textbook for this course, however, the following textbooks are recommended:

- Stock, J. and Watson, M., *Introduction to Econometrics*, 4th Edition, Pearson.
- Wooldridge, J., *Introductory Econometrics: A Modern Approach*, 7th Edition, Cengage.

In addition to the recommended textbooks, a series of lecture notes which follow the material presented in class will be posted on HuskyCT. The recommended textbooks and lecture notes are complements to the lectures, not substitutes.

Requirements:

Assessment of this course will be based on the following four components:

- Participation: You are expected to attend class regularly. Periodically throughout the classes, you will be asked to complete pop quizzes (will not be graded) without notice. No makeups for the pop quizzes.
- Homework Assignments: A set of problem sets including computer exercises will be assigned during the semester. These assignments are designed to re-enforce course material, prepare you for exams, and emphasize practical applications of quantitative

methods. The assignments will require use of statistical software. While cooperation and discussion is encouraged, homework assignments, including computer work, must be the work of the student whose name appears on them (i.e., your own). Homework will be collected at the beginning of the section on the due date.

- Midterm Exams: There are two in-class midterm exams. Dates are TBA.
- Final Exam: The final exam is scheduled by the University.

Grading:

- Option 1: participation (10%) + homework (20%) + two midterms (20% + 20%) + final (30%)
- Option 2: participation (10%) + homework (20%) + best midterm (30%) + final (40%)

The higher score between those two options will be used to decide your letter grade. I will generally follow the following grading scheme, however, I reserve the right to make adjustments as necessary. You will be notified if adjustments are made.

≥ 93.00	<i>A</i>	73.00 – 76.99	<i>C</i>
90.00 – 92.99	<i>A–</i>	70.00 – 72.99	<i>C–</i>
87.00 – 89.99	<i>B+</i>	67.00 – 69.99	<i>D+</i>
83.00 – 86.99	<i>B</i>	63.00 – 66.99	<i>D</i>
80.00 – 82.99	<i>B–</i>	60.00 – 62.99	<i>D–</i>
77.00 – 79.99	<i>C+</i>	≤ 59.99	<i>F</i>

If the class average on the final grades falls below 83, a curve will be added to bring the class average up to 83. For example, if the class average is 80, then a 3 curve will be added to bring the class average up to 83. The **class average** of this course is guaranteed to correspond to the lowest B.

Cheat Sheets:

Two pages (single sided, 8.5 × 11 inches) of paper are allowed for each midterm exam and four pages for the final exam. They can either be printed or handwritten.

Makeup Exam Policy:

Only students with legitimate excuses will be allowed to make up missed exams. The date and time for student to take a makeup exam will be arranged on a case by case basis.

Academic Integrity:

You are responsible for acting in accordance with the University of Connecticut’s [Student Code](#). Review and become familiar with these expectations. In particular, make sure you have read the section that applies to you on [Academic Integrity](#). Cheating and plagiarism are taken very seriously at the University of Connecticut. As a student, it is your responsibility to avoid plagiarism.

Disabilities and Accommodations:

In compliance with the University of Connecticut policy and equal access laws, I am available to discuss appropriate academic accommodations that may be required for students with disabilities. Students in need of accommodations should go to the [center for students with disabilities](#) to verify their eligibility for appropriate accommodations. If you are eligible for accommodations such as extra time during exams, please provide documentation and coordinate with me no later than a week prior to every exam.

Tentative Course Outline:

Topic	Chapter(S&W)
1. Introduction	1
2. Review of Probability and Statistics a) Random Variables and Probability Distribution Functions b) Estimators and Sampling Distributions c) Statistical Inference: Estimation and Hypothesis Testing d) Jointly Distributed Random Variables, Covariance and Correlation	2&3
Exam One	
3. Simple Linear Regression a) Simple Linear Regression Model b) Estimation and Interpretation c) Inference	4&5
4. Multivariate Regression Analysis a) The Multivariate Regression Model b) Estimation and Interpretation c) Inference	6&7
Exam Two	
5. Nonlinear Regression Functions a) Functional Form b) Dummy Variables and Interaction Terms	8
6. Joint Hypothesis Tests and Robust Inference a) Joint Hypothesis Testing b) Robust Inference: Heteroscedasticity, Serial Correlation, Clustering	5, 6&7
Final Exam	

Statistical Software:

The course will require use of Stata, one of the primary statistical packages used by economists. Stata is freely available to students at UConn through the computer labs or online with UConn AnyWare. Eligible students can also download Stata at <https://software.uconn.edu/software/stata/>. You are welcome to use other statistical software such as R, but I will only demonstrate how to use Stata in class. Here are some resources for learning Stata:

- [Resources to help you learn and use Stata](#) by UCLA Institute for Digital Research and Education (IDRE): an extensive resource of Stata information, including FAQs, learning modules, a quick-reference guide, annotated output, textbook examples, and more. New users may want to visit the [Stata Class Notes](#) section of the UCLA site. Don't miss the [Stata Web Books](#).

- [Introduction to Stata](#) by Carolina Population Center, University of North Carolina at Chapel Hill: this tutorial is function-oriented, focusing on data-management tasks. It works up from basic tasks, such as how to drop variables, to the tasks needed for complex file organization, such as how to reshape and merge data files.
- [Stata Online Training Page](#) by Princeton Data and Statistical Services: a series of pages giving a step-by-step instruction in Stata. Topics start from basic Stata usage, and progress through common data management tasks through to using Stata for a wide variety of analysis topics.
- [Stata cheat sheets](#) by Dr. Tim Essam and Dr. Laura Hughes: these compact yet well-organized sheets cover everything you need, from syntax and data processing to plotting and programming, making them handy references to download for quick use.
- [Articles on Statistical Computing](#) by Social Science Computing Cooperative, University of Wisconsin: a large collection of well-written and informative pages about a broad set of topics, including an in-depth [Introduction to Stata for Researchers](#).
- [Stata Tutorial](#) by German Rodriguez, Princeton University: a brief and informative introduction to Stata.

RStudio is a *free and open-source* integrated development environment for R, a programming language for statistical computing and graphics. To install RStudio, first download and install R from <http://cran.r-project.org/>. Second, download and install RStudio by visiting <http://rstudio.org/download/desktop> and clicking the link listed under “Installers for Supported Platforms”. While R is not required, these resources may be useful if you need some extra help learning R:

- [Contributed Documentation by Comprehensive R Archive Network \(CRAN\)](#): comprehensive list of freely available reference material for R.
- [R Twotutorials](#) by Anthony Damico: ninety energetic, two-minute video tutorials on statistical programming with R.
- [Google Developers R Programming Video Lectures](#): R Programming video tutorials from beginning to advanced.
- [Econometrics in R](#) by Grant Farnsworth.
- [Resources to help you learn R](#) by UCLA Academic Technology Services: a wealth of information about R, conveniently arranged in one place. The R Starter Kit is particularly helpful.
- [R in a Nutshell](#) by Joseph Adler: it provides a comprehensive reference guide to R.
- [R-bloggers](#): a blog aggregator for R news and tutorials, with lots of applications.