

# Syllabus for **Econometrics**

Rutgers University  
Department of Economics

01:220:322  
Fall 2022

## **Contact Details**

Instructor: Xiye Yang  
Office: NJ Hall, Room 301B  
Telephone: (848) 932-8655  
Email: [xiyeyang@econ.rutgers.edu](mailto:xiyeyang@econ.rutgers.edu)  
Teaching Assistant: Ruei-Chi Lee  
Email: [rl824@economics.rutgers.edu](mailto:rl824@economics.rutgers.edu)

## **Course Details**

Lecture: Monday 2:00 PM - 3:20 PM, Academic Building 4400  
Wednesday 2:00 PM - 3:20 PM, Academic Building 4400  
Office hours: Monday 12:30 PM - 1:30 PM (Zoom)

## **Mask Policy**

In order to protect the health and well-being of all members of the University community, masks must be worn by all persons on campus when in the presence of others (within six feet) and in buildings in non-private enclosed settings (e.g., common workspaces, workstations, meeting rooms, classrooms, etc.). **Masks must be worn during class meetings; any student not wearing a mask will be asked to leave.**

Masks should conform to CDC guidelines and should completely cover the nose and mouth: <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/about-face-coverings.html>

Each day before you arrive on campus or leave your residence hall, you must complete the brief survey on the [My Campus Pass symptom checker](#) self-screening app.

## **Course Description**

Econometrics is a set of research tools used to estimate and test economic relationships. The methods taught in this introductory course can also be employed in the business disciplines of accounting, finance, marketing, management, and in many social science

disciplines. The aim of this course is to provide you with the skills helpful in filling the gap between being “a student of economics” and being “a practicing economist.” By taking this introduction to econometrics course you will gain an overview of what econometrics is about, and develop some “intuition” about how things work. The emphasis of this course will be on understanding the tools of econometrics and applying them in practice.

Students who successfully complete Econ 322 should be comfortable with basic statistics and probability. They should be able to use a statistical/econometric computer package to estimate an econometric model and be able to report the results of their work in a non-technical and literate manner. In particular, a student who successfully completes Econ 322 will be able to estimate and interpret linear regression models and be able to distinguish between economic and statistical importance. They should be able to critique reported regression results in applied academic papers and interpret the results for someone who is not trained as an economist.

## Prerequisites

It is expected that all students will have taken principles of economics courses covering both microeconomics and macroeconomics (e.g. 220:102 and 220:103 or 220:200), Calculus I (640:135 or 640:151), and an introductory statistics class (e.g. 960:211 or 960:285). It will be assumed that all students have a good command of the material taught in these courses. It is strongly suggested that you review this material at the beginning of this course.

## Required Materials

- Textbook: James H. Stock and Mark W. Watson, *Introduction to Econometrics 4th Edition*, Pearson. It is okay with me if you use a previous edition, but you will need to make sure you are reading the right chapters.
- This course will also be using *MyLab Economics*. The bundle of the text book and the access to *MyLab* can be purchased online or from the bookstore. You have a number of options:
  - MyLab Economics + eText Package (all digital)
  - MyLab Economics + Looseleaf Package
  - MyLab Economics + Hardcover Package
  - If you already have a copy of the text, you can purchase an access code to *MyLab* from the bookstore or from Pearson directly.

- The software that will be used in this course is **R**, which is free. No prior knowledge of this software package is assumed. This package will be introduced in lectures and problem sets as the course proceeds. It is highly recommended that you install **RStudio**, which is an Integrated Development Environment (IDE) for R.

## Course Assessments

There will be graded assignments (via *MyLab*) and exams. Final grades will be based on your performance in all forms of assessment, according to the following distribution. I will post grading scales after the midterm so that you know where you stand during the semester. Note that students majoring in Economics need to pass this course with a C or higher.

Assessment	Weight
Weekly <i>MyLab</i> assignments	25%
Midterm	35%
Final	40%

*MyLab* homework will be assigned on a weekly basis and **due next Wednesday 11:59pm**. Each homework question is allowed two attempts. Late assignments will receive a score of zero.

Exams are closed-book. To the midterm you may bring two sheets of notes on standard paper, with writing on both sides. A calculator is also permitted. The final exam will focus on the material after the midterm, but the nature of the material is that the final is cumulative. You may bring four sheets of notes and a calculator to the final exam.

If you do not attend an exam, you will receive a zero score for that exam. Make-up exams (for both midterm and final exams) will be given only in the event of legitimate excuses for missing an exam. "Legitimate excuses" here mean university recognized absences, and often only refer to medical emergencies and religious events. You should discuss your legitimate excuses with me (except for medical emergencies) at least one week ahead of time. Other excuses, such as "attending best friends' weddings," are not acceptable. If you need accommodations for exams, please let me know by **October 1**.

**I do not give extra-credit assignments.**

## Academic Integrity

I regard academic dishonesty as a very serious offense. By enrolling in this course, you assume responsibility for familiarizing yourself with the Academic Integrity Policy and the possible penalties (including suspension and expulsion) for violating the policy. As per the policy, all suspected violations will be reported to the Office of Student Conduct.

Please review the Academic Integrity Policy from <http://nbacademicintegrity.rutgers.edu/home/for-students/>

Any student caught cheating will receive an F for this course and will be reported to the appropriate university authority. There will be no warnings.

## Important Dates

Date	Event
Wednesday, September 15	Last day to DROP a course without receiving a W grade
Thursday, September 15	Last day to ADD a course
Monday, September 19	Last day to withdraw completely and receive a 100% refund
October	Midterm (regular class time and the same classroom, full class)
Monday, November 7	Last day to DROP a course with a W grade
Wednesday, November 23	Change of designation day, no class
Wednesday, December 21	Final

## Course Outline

The following is a list of lecture topics. I have indicated the relevant chapters for each topic. This should be used as a rough guide for your reading. The lecture material will be greatly enhanced for you if you are up to date with your readings.

1. Introduction (Chapter 1)
2. Review of Statistical Concepts (Chapters 2 and 3)
3. The Simple Linear Regression Model (Chapters 4 and 5 (optional: Chapter 18))
4. The Multiple Linear Regression Model (Chapters 6 and 7 (optional: Chapter 19))
5. Nonlinear Effects in Regression Models (Chapter 8)

### Midterm Exam

6. Assessing Regression Models (Chapter 9)
7. Regression with Panel Data (Chapter 10)
8. Regression with a Binary Dependent Variable (Chapter 11)
9. Instrumental Variables Estimation (Chapter 12)

10. Experiments and Quasi-experiments (Chapter 13)

11. Prediction with Many Regressors and Big Data (Chapter 14, if time permits)

**Final Exam**