East China Normal University
GEC International Summer School

ECO 33: Introduction to Econometrics

Term: June 16ᵗʰ to July 18ᵗʰ, 2025
Class Hours: Monday through Friday, 110 minutes each day (2,750 minutes in total)
Instructor: Xingzi Ren
Home Institution: TBD
Office hours: TBD
Email: TBD

Course Description

Economists develop economic models to explain consistently recurring relationships. Their models link one or more economic variables to other economic variables. Econometrics uses economic theory, mathematics, and statistical inference to quantify economic phenomena. In other words, it turns theoretical economic models into useful tools for economic policymaking.

This is the first course of the Econometrics series, which focuses on analyzing cross-sectional data. The objective of this course is to prepare students for basic empirical work in economics. Topics will include simple regression, multiple regression, We will also learn the fundamental regression assumptions (linearity, multicollinearity, heteroskedasticity, etc.). Students will be provided with the opportunity to use actual economic data to test economic theories.

This course also has a strong empirical emphasis with the statistical software package called "STATA". There will be 4 assessable labs in total.

Prerequisite: Economic Statistics 1&2 (ECO21 & ECO22) or equivalent.

Course Goals

A student who satisfactorily completes this course should be able to :

- gain an understanding of the statistical theory that underlies econometrics
- be able to learn to use data analytical tools that allow you to formulate and then estimate an econometric model
- gain the ability to interpret econometric results and draw statistical inference from these results
- generate multiple regression models in STATA and interpret the results

Required Text

Jeffrey M. Wooldridge, Introductory Econometrics, A Modern Approach, 7th Edition

Publisher: South-Western Cengage Learning, Mason.

ISBN: 978-1-337-55886-0

Digital access: **https://au.cengage.com/c/isbn/9781337558860/**

Required Software Package

STATA, available at www.stata.com

Course Hours

The course has 25 class sessions in total. Each class session is 110 minutes in length, for a total of 2750 minutes of in-class time. The course meets from Monday to Friday. ECNU awards 3 credits for this course. Different universities may count course credits differently. Consult officials at your own home institution.

Attendance

Summer school is very intense and to be successful, students need to attend *every class*. Occasionally, due to illness or other unavoidable circumstance, a student may need to miss a class. ECNU policy requires a medical certificate to be excused. Any absence may impact on the student's grade. Moreover,

ECNU policy is that a student who has more than 3 absences will fail the course. Arriving late or leaving early will count as a partial absence.

Grading Policy

ECNU awards grades of A, A-, B+, B, B-, C+, C, D, and F. Most colleges and universities do not award transfer credit for grades of D or F.

In this course, grading will be based on the following:

Attendance/participation	10%
Lab Assignments*4	10%*4=40%
Midterm Exam	20%
Final Exam	30%

Lab Assignments

This course contains 4 lab assignments, each worth 10%. The labs are hold every Friday in class in the first 4 weeks. For each lab assignment, students are required to submit a report with answers and the corresponding do-file. Each lab assignment is due Sunday 23:59 Beijing time the week the lab takes place. No late assignment will be accepted.
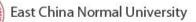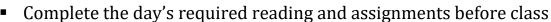
Exams

There will be two exams: 1 midterm in Week 3 and 1 final in Week 5 (last day of school). The midterm exam is expected to cover the materials from Chapters 1 to 7, and the final exam is cumulative, with higher emphasis on materials after midterm. Detailed information about the exams will be released at least 1 week before each exam. There is no make-up exam for this course.

General Expectations

Students are expected to:
- Attend all classes and be responsible for all material covered in class and otherwise assigned. Any unexcused absence may impact a student's grade.
- Arrive to class on-time: Late arrivals are disruptive to your fellow students and to the conduct of the class.

- Complete the day's required reading and assignments before class
- Review the previous day's notes before class; make notes about questions you have about the previous class or the day's reading
- Refrain from texting, phoning or engaging in computer activities unrelated to class during class (不要用手机) It is highly disrespectful to the professor and to the class.
- Participate in class discussions and complete required written work on time.

Course Schedule

The planned schedule sketched out below may be modified to suit the interests or abilities of the enrolled students or to take advantage of special opportunities or events that may arise during the term.

Week 1

- *Day 1*
  - *Course outline*
  - *Quick review of ECO21&ECO22 material*
- *Day 2*
  - *Quick review of ECO21&ECO22 material*
- *Day 3*
  - *The Nature of Econometrics and Economic Data (Chapter 1)*
- *Day 4*
  - *The Simple Regression Model (Chapter 2)*
- *Day 5*
  - *Hands-on: Lab 1 – Stata basics & Running simple regression model in Stata*

Week 2

- *Day 1*
  - *Multiple Regression Analysis: Estimation (Chapter 3 – 3.1~3.3)*

- *Day 2*
  - *Multiple Regression Analysis: Estimation (Chapter 3 – 3.4~3.7)*

- *Day 3*
  - *Multiple Regression Analysis: Inference (Chapter 4 – 4.1~4.4)*

- *Day 4*
  - o *Multiple Regression Analysis: Inference (Chapter 4 – 4.5~4.7)*
- *Day 5*
  - o *Hands-on : Lab 2 – Running and interpreting multiple regression in Stata*

Week 3

- *Day 1*
  - o *Multiple Regression Analysis: OLS Asymptotics (Chapter 5, limited coverage)*
  - o *Multiple Regression Analysis: Further Issues (Chapter 6)*
- *Day 2*
  - o *Multiple Regression Analysis: Qualitative Information (Chapter 7, 7.1~7.3)*
- *Day 3*
  - o *Midterm review session*
- *Day 4*
  - o *Midterm exam (covering Chapters 1-6, no Stata material)*
- *Day 5*
  - o *Hands-on: Lab 3 – Running and interpreting multiple regression in Stata*

Week 4

- *Day 1*
  - o *Multiple Regression Analysis: Qualitative Information (Chapter 7, 7.4~7.7)*
- *Day 2*
  - o *Heteroskedasticity (Chapter 8)*
- *Day 3*
  - o *More on Specification and Data Issues (Chapter 9)*
- *Day 4*
  - o *More on Specification and Data Issues (Chapter 9) - continued*
- *Day 5*
  - o *Hands-on: Lab 4 – Testing for misspecification issues*

Week 5

- *Day 1*

- o *Pooling Cross Sections across Time: Simple Panel Data Methods (Chapter 13)*
- *Day 2*
  - o *Advanced Panel Data Methods (Chapter 14)*

- *Day 3*
  - o *Final review session*
- *Day 4*
  - o *Final review session*
- *Day 5*
  - o *Final exam*

Academic Honesty

Students are expected to maintain high standards of academic honesty. Specifically, unless otherwise directed by the professor, students may not consult other students, books, notes, electronic devices or any other source, on examinations. Failure to abide by this may result in a zero on the examination, or even failure in the course.