

Econometrics

Instructor: Fang-Chang Kuo

Fall 2026

Email: fckuo@ccu.edu.tw

Office Hours: Wed. 12:00pm-1:00pm

Office: College of Management 331

TA: TBA

Web: <https://ecourse2.ccu.edu.tw/>

Class Hours: Wed. 1:10am-4:00pm

Classroom: College of Management 426

TA's E-mail: TBA

Course Description

This course is Master's level course in econometrics. Both the theoretical underpinnings of the econometric methods and the application of these methods to actual data will be covered. The goal is to provide students with the knowledge needed to conduct their own quantitative empirical research, evaluate industry policies, and conduct a critical reading of empirical research papers.

Course Materials

Textbook:

- S. Cunningham. *Causal Inference: The Remix*. Yale university press, 2026
- J. Angrist and J.-S. Pischke. *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton University Press, 2009
- J. M. Wooldridge. *Introductory Econometrics: A Modern Approach*. Cengage Learning, 7th edition, 2019

References:

- M. Verbeek. *A Guide to Modern Econometrics*. Wiley, 5th edition, 2017
- W. H. Greene. *Econometrics Analysis*. Pearson Education, 8th edition, 2020
- F. Hayashi. *Econometrics*. Princeton University Press, 2000
- J. M. Wooldridge. *Econometric analysis of cross section and panel data*. MIT press, 2nd edition, 2010
- M. H. DeGroot and M. J. Schervish. *Probability and statistics*. Pearson Education, 4th edition, 2012

Grading Policy

- Midterm 1: 25%; Midterm 2: 25%; Midterm 3: 25%; Final: 25%

Course Structure

Exams

There will be three midterms and one final. All exam are cumulative, but recent topics would have higher weights. Exams are closed book. Consulting books, notes, or electronic devices will not be allowed. There will be no make-up exams. If you miss one exam due to documented illness or emergency, your grade will be discounted and computed out of the other exams that you did completed.

Course Plan

1. Linear regression model:
 - specifications
 - interpretations
 - OLS estimation
 - inference
2. Asymptotic (large-sample) theory
 - consistency
 - asymptotic normality
 - standard errors
3. Instrumental variables (IV)
 - 2SLS
 - generalized method of moments (GMM)
4. Panel data
 - fixed effects model
 - within and first-difference estimation
 - Difference-in-Difference (DD)
5. Binary-choice models
 - linear probability model (LPM)
 - logit and probit
 - MLE
 - partial effects
6. Quantile regression
 - Least Absolute Deviation (LAD)
 - bootstrap sampling