Econometrics 2

Course # ECON 3003

Credits 6

Prerequisites and/or Corequisites: Calculus, Introductory Statistics, and Econometrics I.

Course Description

This course builds upon the foundation of Econometrics I, focusing on the practical challenges of conducting empirical research with cross-sectional and panel data. We will delve into violations of the Classical Linear Regression Model (CLRM) assumptions, with a special emphasis on the problem of endogeneity and its solution. The course will cover advanced techniques, including instrumental variables, models for limited dependent variables, and panel data methods. The goal is to equip you with the tools to critically evaluate empirical work and conduct your own credible, causal research projects.

Course Learning Outcomes

Upon the completion of the course, students will be able to:

- Diagnose and correct for heteroskedasticity in cross-sectional data.

- Describe the fundamental problem of endogeneity (omitted variable bias, simultaneity, measurement error) and explain why it violates CLRM assumptions.

- Implement and interpret Instrumental Variables (IV) / Two-Stage Least Squares (2SLS) regression and test for instrument validity.

- Specify, estimate, and interpret non-linear models for binary, multinomial, and count data (Logit, Probit, etc.).

- Utilize panel data methods (Fixed Effects, Random Effects) to control unobserved heterogeneity and argue for their use over pooled OLS.

- Design, execute, and present an empirical research project in economics and related fields.

Course Assessments and Grading

Item	Weight
Class attendance and participation	5 %
In-class quizzes	20 %
Homework assignment	10 %

Project	15 %
Midterm Exam	25 %
Final Exam	25 %