

Econ 4090

Econometrics

The course focuses on learning and implementing statistical tools to analyze economic relationships using economic data. It discusses how similar analyses can also be performed for many related business and social sciences data.

- The course begins with learning causal regression techniques that are essential for understanding the effects of economic policy variables on any targeted outcome variable. It discusses how to quantify such causal effects using various statistical estimation tools.
- The course extends the concept of statistical ‘hypothesis testing’ to test significance of such causal effects.
- The course discusses various prediction and forecasting methods that are essential for data analytics.
- The course emphasizes on ‘model selection’ using various statistical model performance criteria. This is important for achieving better accuracies in estimation, testing and prediction exercises.
- Several commonly found problems in data, and regression models adversely affect quantitative analyses. Students learn how to detect and fix such problems for obtaining more accurate results.
- Finally, the course illustrates and implements these techniques using real-world data, examples and freely available statistical software “R” packages.



Who should take this course?

- **Strongly recommended for students joining graduate programs in Economics and Finance.**
- **Highly beneficial for students planning to work as business or economic data analysts.**
- **Methods taught in this course will be immensely helpful for students using quantitative methods in Business disciplines (Accounting, Finance, Marketing, Management) as well as in various Social Science disciplines (Psychology, Sociology, Political Science, Health, Environment).**
- **The course will provide important background skills to take future courses on Machine Learning and AI.**

**Prerequisites:

Either ECON 2090 or STAT 2160 or CIS 2500 or PSCI 3950 or PSY 3000 or IEE 2610

