

ECONOMETRICS II, ECON 372
Department of Economics
St. Francis Xavier University
Winter 2022

Instructor: Teng Wah LEO

Time Blocks and Location: W7/W8 (Monday, 3:45 p.m.–5:00 p.m.; Wednesday, 2:15 p.m.–3:30 p.m.) at Mulroney Hall, MULH4022

Office Hours: Mondays from 12 p.m.–2 p.m. & Wednesdays from 10 a.m.–1 p.m at Mulroney Hall, Room 3073. All other times, by appointment only. During the first two weeks of class, office hours will be via moodle via appointment only.

Objective: The course is designed to introduce more Econometric Theory to the Introductory course in Econometrics to provide a basis for the student to utilize more advance econometric techniques. Emphasis will be placed on more in depth technical detail, such as solving for the Ordinary Least Squares solution using Matrix Algebra, which would allow the student to write dedicated computer programs in MATLAB. The rigour is also meant to provide a strong grounding to the student for analyzing problems in empirical work both regarding technical problems and that associated with inference. **Prerequisite:** ECON 371.

Evaluation: There will be 4 equally weighted **take-home** tests, each of which will include both theoretical, and applied elements. Each of the take-home tests is worth 15%, for a total of 60% of your final grade. It is recommended that assignments be typed using L^AT_EX. There will be one mid-term test on the 24th February 2021, and a final examination, each worth 20%.

Required Text:

- Jeffrey M Wooldridge. 2015, *Introductory Econometrics: A Modern Approach*, South-Western College, 6th edition.

Supplementary Reading:

- James G MacKinnon and Russell Davidson. 2003, *Econometric Theory and Methods*, Oxford University Press.
- (CB) Christopher F. Baum. 2006, *An Introduction to Modern Econometrics Using Stata*, Stata Press.
- (SB) Sean Beckett. 2013, *Introduction to Time Series Using Stata*, Stata Press.

Course Outline:

1. Matrix Representation of OLS and MATLAB
2. Programming in MATLAB
3. Method of Moments & Maximum Likelihood Estimation
4. Measurement Error Revisited
5. Instrumental Variable Estimation and Two Stage Least Squares
6. Simultaneous Equations Models
7. Limited Dependent Variable
8. Introduction to Time Series Analysis
9. More Time Series Analysis
10. Monte Carlo Experiments (Should time permit.)