

## **FRE 529 (1.5) Estimating Econometric Models**

### **Course Outline**

Class Time: tbc

Room: tbc

#### **Instructor**

*Michael Johnson, PhD*

Phone: 604-822-3841

Office: MacMillan 231

Office Hours: tba

#### **Prerequisite**

FRE528 Applied Econometrics

#### **Description**

In this course we study some econometric topics that are not covered in the Applied Econometrics course (FRE 528) that are useful for economists working in the food and resource sectors. Topics can include instrument variables (IV) estimation, panel data methods (basic models, dynamic panel model, difference-in-differences, panel model with limited dependent variable), and qualitative and limited dependent variable models. The focus of the course will be on the application of these methods in econometric modeling rather than on theoretical proofs.

#### **Learning Objectives**

- To learn various advanced econometric methods, estimation methods and related econometric theories
- To apply these methods to data or econometric modelling techniques to estimate models using real world data
- To be able to write a code in Stata and R to estimate econometric models and replicate results from published econometrics research
- To be capable of interpreting econometric estimates, analyzing the results and critically evaluating published econometric research that use advanced econometrics methods.

#### **Class Format**

14 lectures of 1.5 hours, twice a week for 7 weeks.

## Course Requirements (Subject to changes)

Your grade shall be determined as follows

Evaluation	Date	Percent of Grade
Midterm	To be announced.	30 percent
Assignments	Assigned approximately every two weeks.	30 percent
Final Paper and presentation	To be announced.	35 percent
Class Participation	Contributions to class discussions.	5 percent

### Assignments

The assignments will consist of problem sets that will allow the students to apply the various techniques and topics covered in class using real life data sets. In addition, they will get practice in the use of the statistical software R and Stata.

### Final Paper and Presentation

Student will be asked to critically review an applied research paper in the food and resource field that utilizes econometric estimation techniques discussed in this class. This is a form of mini-research project that is put together and presented to the class. The aim is to understand the integration of theory and the application of econometric models, by examining a research paper(s) that uses a particular econometric modeling technique and sharing it with the entire class. The presentation should summarize, critique and distill the essence of the research paper(s) and the econometric model(s) presented. Alternatively, students may choose to apply the presented estimation methods to a real world application if the data is readily available. This secondary option must be approved by the course instructor due to the time limitations of this course.

### Class Participation

The class participation grade depends on your contribution to class discussions. All contribution is appreciated, even questions asking the instructor to clarify previously taught material. The sole aim of assigning a participation grade is to encourage active learning for everyone. The instructor will ascertain and assign this part.

### **Academic Dishonesty**

Please review the UBC Calendar “Academic regulations” for the university policy on cheating, plagiarism, and other forms of academic dishonesty. **Academic dishonesty will be dealt with very seriously in this course.**

### **Online Course Material**

Available at Connect: <http://www.connect.ubc.ca>. You are required to regularly login to your course page for FRE529. Your syllabus, course-lecture slides, additional material, announcements, assignments, and grades are available.

### **Textbook and Resources**

Verbeek, M. (2012). A Modern Guide to Econometrics, Fourth Edition. John Wiley & Sons.

R. Carter Hill, William E. Griffiths and Guay C. Lim, Principles of Econometrics,

Fourth Edition, Wiley, 2011.

A Stata guide for the textbook is also on reserve at the same location:

Using Stata for Principles of Econometrics, 4th edition by Lee C. Adkins and R. Carter Hill. 2011.

Various journal articles (links provided later).

**Tentative Lecture Schedule (to be finalized).**

Week 1	Course Introduction; IV estimation	
Week 1	IV estimation: Corn acreage supply response	
Week 2	IV estimation: Agricultural productivity measurement	Assignment 1 given.
Week 2	Panel Data: Difference in difference estimation (carbon tax)	
Week 3	Panel Data: Propensity score matching (school lunch policy)	
Week 3	Panel Data: Farm level adaptation to climate change	
Week 4	Midterm	
Week 4	Panel Data: Stochastic frontier (efficiency of agricultural production)	Assignment 2 given.
Week 5	Panel Data: Gravity model (Trade policy impacts)	
Week 5	Panel Data: Hedonic price analysis (wine market)	
Week 6	Limited dependent variable models: Outdoor recreation demand	Assignment 3 given.
Week 6	Limited dependent variable models: Agricultural land use	
Week 7	Limited dependent variable models: WTP to avoid GMO	
Week 7	Presentations	