

CE 697M

Statistical and Econometric Methods II

The objective of this course is to solidify students' understanding of the material taught in CE697N (Statistical and Econometric Methods I) and to extend students' knowledge with the presentation of new model estimation techniques not covered in CE697N. Specifically, we will undertake detailed assessment of simultaneous equations models (seemingly unrelated regressions and three-stage least squares), generalized extreme value models (nested logit models estimated by full information maximum likelihood), mixed logit models (to account for variations in parameters across the sample population), models with fixed and random effects, zero-inflated count data models, and selectivity models (discrete/continuous frameworks).

Time and location:

Spring semester, Tuesdays 5:30-8:30, in room CIVL 2118

Website:

<http://bridge.ecn.purdue.edu/~flm/697M.htm>

Course requirements:

- Empirical assignments. All involve data analysis with existing databases. Students will present a short presentation of findings after each assignment.
- Research critique. During the semester, each student will be asked to critique two methodological papers in their field of interest and present this critique to the class.
- Students will complete a research paper using the methods covered in the course.

Grade distribution:

Empirical assignments (30%), Research paper (30%), Final Exam (40%)

Prerequisites:

CE697N (Statistical and Econometric Methods I).

Required materials:

Text: Washington, S., M. Karlaftis, and F. Mannering (2003) Statistical and econometric methods for transportation data analysis, Chapman & Hall/CRC, Boca Raton, FL, 425 pages.

Course contents

Lecture 1	Course introduction
Lecture 2	Seemingly unrelated regressions (Text chapter 5)
Lecture 3	Time Stability Three-stage least squares (Text chapter 5)
Lecture 4	Paper critiques I
Lecture 5	Paper critiques II
Lecture 6	Zero-inflated count models (Text chapter 10)
Lecture 7	Fixed and random effects models
Lecture 8	Nested logit models with full information maximum likelihood (Text chapter 11)
Lecture 9	Mixed logit models (Text chapter 11)
Lecture 10	Tobit models
Lecture 11	Paper critiques III
Lecture 12	Project discussions and issues
Lecture 13	Recent econometric applications I
Lecture 14	Recent econometric applications II
Lecture 15	Project presentations