TTE 6501

Statistical and Econometric Methods II

The objective of this course is to solidify students' understanding of the material taught in TTE 6307 (Statistical and Econometric Methods) and to extend students' knowledge with the presentation of new model estimation techniques not covered in TTE 6307. 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), latent-class models, models with fixed and random effects, zero-inflated count data models, and multivariate models, random parameter models with heterogeneity in the means and variances.

Time and location: Spring Semester, Wednesdays 2:00-4:45pm, in room ENC 2002

Office Hours: Wednesdays noon-1:30pm, in room ENC 3506

Website: http://cee.eng.usf.edu/faculty/flm/TTE6501(20).htm.

Course requirements:

- Empirical assignments. All involve data analysis with existing databases.
- Research critique. During the semester, each student will be asked to critique two methodological papers in any 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%)

Mandatory Prerequisite:

TTE 6307 - Statistical and Econometric Methods

Required materials:

Text: Washington, S., M. Karlaftis, and F. Mannering (2011) Statistical and econometric methods for transportation data analysis, Second Edition, CRC Press, Boca Raton, FL.

Course contents

Lecture 1	Course introduction, duration models (Text chapter 15)
Lecture 2	Random parameters ordered probit (Text chapter 14)
Lecture 3	Seemingly unrelated regressions/3SLS (Text chapter 5)
Lecture 4	Bivariate ordered probit, multivariate binary probit (Text chapter14)
Lecture 5	Zero-inflated count models (Text chapter 11)
Lecture 6	Paper critiques I
Lecture 7	Paper critiques II
Lecture 8	Research presentation – Automobile leasing/Home copying
Lecture 9	Latent Class and Mixed logit models (Text chapters 13, 16)
Lecture 10	Random parameter models with heterogeneity in the means and variances
Lecture 11	Tobit models (fixed and random parameters/bivariate) (Text chapter 3)
Lecture 12	Temporal instability and its effect on model estimates
Lecture 13	Research presentation – Future methods/unobserved heterogeneity
Lecture 14	Hierarchical ordered probit
Lecture 15	Project discussions and emerging issues