

## **Econometrics I (Econ 623)**

In the past this course was co-taught by Professors John Chao and John Rust. The course is offered in the fall semester. Topics typically covered by the course include:

- Classical Linear Regression Model (specification; algebra of OLS estimation; coefficient of determination; basic concepts of finite sample analysis; finite sample properties of OLS and hypothesis tests; basic concepts of large sample analysis; asymptotic properties of OLS and hypothesis tests; multicollinearity, partial and multiple correlation coefficients; scaling and units of measurement; functional form; some issues of misspecification)
- Instrumental Variable Estimation (inconsistency of OLS; asymptotic properties of IV; two stage least squares; Hausman specification test)
- Generalized Linear Regression Model (True GLS estimator; Aitken theorem; feasible GLS estimator; finite sample properties of GLS and hypothesis tests; asymptotic properties of GLS and hypothesis tests; autocorrelation; heteroskedasticity; seemingly unrelated regression).
- Quantile Regression Models (Median and quantile regression; least absolute deviation estimator; asymptotic properties)
- Econometric software planned to be used in this course is TSP, Stata, or another major econometric package.

Prerequisite: Knowledge of the material covered in the Introduction to Probability and Statistics summer course. For detail see the page on Prerequisites for the econometrics sequence.