

## Econometrics III (Econ 721)

This course is oriented towards macro-econometric methods. In the past this course was co-taught by Professors John Chao and Harry Kelejian. This course is offered in the fall semester. Topics typically covered by the course will include:

- More on GMM and ML
- More on Stationary Multivariate Time Series Models
- More on Nonlinear Time Series Models
- Exogeneity and Causality
- Non-stationary Time Series Models (Unit roots, co-integration, the error correction model, vector autoregressive (VAR) models)
- Econometric Models of Volatility (Autoregressive conditional heteroskedastic (ARCH) models, generalized ARCH (GARCH) models, and stochastic volatility model)
- Non-stationary Time Series Models (Unit roots, co-integration, the error correction model, vector autoregressive (VAR) models, autoregressive and conditional heteroskedastic (ARCH) models, and generalized ARCH (GARCH) models.)
- Rational Expectations Models
- Non-stationary Panel Data (unit root tests for panel data; residual based co-integration tests for panel data; co-integration panel estimation; spurious panel regression)
- Tests for Structural Change (tests for breaks in coefficients in time series regression; tests based on recursive coefficient estimates and recursive residuals; tests against time-varying parameter model; tests for trend breaks)
- Bayesian Econometrics and Methods for Bayesian Computation (Laplace approximation; importance sampling; Metropolis-Hasting algorithm; Gibbs sampling)

Prerequisite: Econ 624 or permission by the Department.