Aims
The course aims to deepen students' understanding of econometric theory and its applications, so they can appreciate and undertake applied economic work. The course will include theoretical core methods and a variety of models used to investigate economic phenomena and techniques to deal with different econometric problems.

Learning Outcomes
Successful students will

- Understand the theoretical properties of different econometric estimation and testing procedures under various modelling assumptions
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- Be able to demonstrate an ability to apply regression techniques
- Be able to demonstrate an ability to apply regression techniques
- Be able to apply relevant econometric and statistical techniques to students' own research agendas
- Understand how to evaluate the appropriateness of each econometric estimation method under different data limitations and modelling assumptions

Assessment:
Progress and learning outcomes will be evaluated by:

- One 3-hour unseen examination, taken in the Summer term, comprising 80% of the final mark.
- One assessed problem set each term, comprising 20% of the final mark (10% each problem set).
A Note on Stata

Stata IC is available in all the PC labs on campus. Students can purchase their own copy of Stata, at a reduced price under the GradPlan scheme, directly from Timberlake. Email info@timberlake.co.uk for information on how to order. See option 3 on this page for current pricing: http://www.timberlake.co.uk/Stata?id=372

Suggested textbooks:

Students can refer to:


Note that not all topics will be covered by all textbooks.

Syllabus:

Autumn Term

- Review of basic probabilistic and statistical concepts: Probability Theory, Common Families of Distributions, Properties of Random Samples
- Review of linear algebra
- Introduction to Statistical Inference: Point Estimation, Hypothesis Testing
- Linear Models: Finite-Sample Properties of Ordinary Least Squares
- Large-Sample Theory: Limit Theorems, Large Sample Distribution of OLS
- Extremum Estimators I: Maximum Likelihood Estimation and Computation, MLE Asymptotic Theory, MLE Statistical Inference
- Extremum Estimators II: Generalized Method of Moments, Specification Tests and Model Selection

Spring Term

- Assessing Studies Based on Multiple Regression
- Regression with Panel Data
- Regression with a Binary Dependent Variable
- Instrumental Variable Regression
- Experiments and Quasi-Experiments