

# ECON GP20: Econometrics for Policy

Term 1, 2012-2013

## Lecturer

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OHs: Fri 1 - 2:30pm @ Drayton 202

## Practical and Tutorial Session Tutor

Jan Stuhler, [j.stuhler@ucl.ac.uk](mailto:j.stuhler@ucl.ac.uk) ,

## Lecture

Week 7 -16: Fridays 9:30 - 11am, 3 - 4:30pm @ Drayton Jevons LT.

## Practical Session

Week 8 -16: Tuesdays 1 - 2pm @ Drayton Jevons LT.

## Tutorial Sessions

Week 8 -16. Wednesdays, 9-11am @ Drayton B05, 4-6pm @ Drayton B04.

## 1 Aims and Objectives

This course introduces the main techniques that are used for empirical analysis in fields ranging from microeconomics to macroeconomics. The main goal of the course is to teach the students how to become both producers and critical consumers of empirical research. For this purpose, the course will cover a broader range of econometrics tools that have wide applications to empirical economics.

After completing this course, students will NOT be able to progress to the Advanced Microeconomics and Economics and Econometrics of Programme Evaluation options, but they will have access to all other List B option courses.

Differences from the core Econometrics course for the MSc Economics (ECONG020) are:

- Puts a more weight on actual implementation than on pure econometric theory,
- Broader set of methods covered without being too technical,
- Greater focus on practical examples and implementation in STATA (Practical Session).

## 2 Teaching and Assessment

There will be two lectures (3 hours in total) held each week, for ten weeks. The lectures will be recorded by the Lecturecast system. There will also be ten one-hour practical sessions taught by Jan Stuhler. *The final mark is solely based on the final exam in the third term.* There will be homework assignments given every week. There will be 10 assignments in total and all except for the last one are to be handed in on Fridays at the end of the first lecture. For each problem set, only a selected set of questions will be graded. Marks of the homework assignments will not be counted for the final grade. The assignments will include both analytical and empirical problems, and empirical problems will require a use of statistical software such as Stata. Stata problems will be reviewed in the practical sessions, and analytical problems will be reviewed in the tutorial sessions.

Course materials (slides, problem sets, answer keys, etc.) will be uploaded onto the Moodle course page. In order to access to the Moodle page. 1) Go to <http://moodle.ucl.ac.uk/> 2) log in by your UCL Username and Password. 3) Search courses: ECONGP20. 4) Input enrollment key, ECONGP20\_12\_13

### 3 Course Outline

Week 1: Basic Concepts: Estimation, Inference, Hypothesis Test.

#### Part I: Methods for Cross-Sectional Data

Week 2: Basic Linear Algebra, Linear Regression,

Week 3: Robust Standard Errors, Clustered Data.

Week 4: Maximum Likelihood, Bayesian Inference.

Week 5: Binary Regression, Discrete Choice,

Week 6: Linear Instrumental Variable Regression, Binary Endogeneous Variable

Week 7: Generalized Method of Moments, Simulation Based Estimation, Bootstrap.

#### Part II: Methods for Panel Data, Quantile Regression

Week 8: Linear and Nonlinear Panel Data Model.

#### Part III: Methods for Time Series Data

Week 9: Basic Time Series Analysis: Stationary and Nonstationary Series.

Week 10: Vector Autoregressions, Structural VAR.

### 4 Textbooks and Supplementary Reading

There is no required text. There are, however, a number of textbooks that would be useful references for this course. Further references and related literatures will be introduced during the class.

1. Stock, James H. and Watson, Mark W. 2003. Introduction to Econometrics. London: Addison Wesley. (a good book to review the basics, some chapters will be uploaded onto Moodle)
2. Verbeek, Marno. 2008. A Guide to Modern Econometrics, John Wiley & Sons. (most relevant to the course)
3. Hayashi, Fumio. 2000. Econometrics, Princeton University Press. (rigorous proofs are there)
4. Enders, Walter. 2009. Applied Econometric Time Series, Wiley. (For the time series part. Relevant chapters will be uploaded onto Moodle)