

# Sharif University of Technology

## Econometrics

### Syllabus

**Summary:** Econometrics is a second-year graduate-level course in econometrics, with a primary focus on models and methods used in applied microeconomic research. Time-series topics will not be considered in this course. The topics covered assume a knowledge of the material taught in the econometrics (1) sequence of the master program.

**Reading:** The textbook for this course is *Econometric Analysis of Cross Section and Panel Data* by Jeffrey M. Wooldridge (MIT Press, 2002). There are parts of the course that cover topics not in the Wooldridge book, in which case additional readings will be provided.

**Grades:** Course grades will be determined by performance on problem sets (50%) and a final exam (50%).

**Problem Sets:** There will be computer programming work required on most of the problem sets. You may not use a canned package (e.g. Stata, R) for the computer exercises.

**Teaching Assistants:** The TA's will occasionally hold office hours which will be announced

#### Course Outline and Readings:

Extremum Estimators: NLS, GMM, MLE

Newey and McFadden, 1994, "Large sample estimation and hypothesis testing"  
Wooldridge (12.1-12.5, 13.1-13.5, 14.1, 14.6)

Hypothesis Testing and Specification Testing

Newey and McFadden, 1994, "Large sample estimation and hypothesis testing"  
Wooldridge (12.6, 13.6, 13.7)

Discrete-Response Models: Binary Choice, Multinomial Choice, etc.

Wooldridge (15.1-15.4, 15.6, 15.7.5, 15.9, 15.10)

Other Limited-Dependent Variable Models: Censored Model, Selection Model, etc.

Wooldridge (16.1-16.5, 16.6.4, 17.1, 17.3, 17.4)

Duration Models

Wooldridge (20)

Kiefer, 1988, "Economic duration data and hazard functions" (JEL)

Lancaster, 1990, *The Econometric Analysis of Transition Data*

## Panel-Data Models

Wooldridge (10, 14.6, 15.8)

Hsiao, 1990, *Analysis of Panel Data*

Baltagi, 2001, *Econometric Analysis of Panel Data*

Chamberlain, 1984, "Panel data" (HE2)

## Bootstrap Methods

Wooldridge (12.8.2)

Horowitz, 2001, "The bootstrap" (HE5)

Efron and Tibshirani, 1994, *An Introduction to the Bootstrap*

## Nonparametric Estimation

Hardle and Linton, 1994, "Applied nonparametric methods" (HE4)

Hardle, 1992, *Applied Nonparametric Regression*

Pagan and Ullah, 1999, *Nonparametric Econometrics*