

台大經濟系  
Dept. of Economics, NTU

Spring, 2024

計量經濟理論二 (A), Econometric Theory II (A) (ECON 8820)

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Lecture Time and Location: Wednesdays, 13:10 – 16:20 at 社科607

Discussion Section: Tuesday, 16:30 – 18:20 at 社科607

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Office Hour: Thursdays, 11:30 – 12:15

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## Course Description

The primary goal of this course is to familiarize students with econometric analysis of cross section and panel data. After briefly discussing non-parametric identification issues, we will introduce the general results of M-estimation. Then we will focus on two commonly used estimation approaches in general nonlinear models: Maximum Likelihood Estimation (MLE) and Generalized Method of Moments (GMM).

There is no formal prerequisite. However, you are expected to have known the basic asymptotic theories, such as the Law of Large Numbers and the Central Limit Theorem.

## Textbooks

The main textbook is *Econometric Analysis of Cross Section and Panel Data* by Jeffrey M. Wooldridge (MIT Press 2010). An electric version of the book is accessible from the NTU Library web page. This book and its *Student's Solutions Manual and Supplementary Materials* are both reserved in the Social Science Library (辜振甫先生紀念圖書館).

A good reference is *Econometrics* by Bruce E. Hansen, <https://www.ssc.wisc.edu/~bhansen/econometrics/>.

In addition, we will use *Identification Problems in the Social Sciences* by Charles F. Manski (Harvard University Press 1995) to briefly introduce the identification problem. You can find a scanned version on NTU COOL.

## Grades

Grades will be determined by problem sets (20%) and a final exam (80%). The scheduled date for the final exam is **April 10**. There will be NO make-up exam. Please make sure you can attend the exam before enrolling this course.

## Topics

- Introduction and Background (2/21)
- Non-Parametric Identification Problems (Manski, Ch1, 2) (2/21, 3/6)
- M-Estimation (Wooldridge, Ch12; Hansen, Ch22, 23) (3/6, 3/13, 3/20)
- Maximum Likelihood Methods (Wooldridge, Ch13) (3/20, 3/27)
- Generalized Method of Moments (Wooldridge, Ch14; Hansen, Ch13) (4/3)