

# Econ 3121A

## Introductory Econometrics

### Course Outline

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### Teaching Team

Instructor: Prof. Merrick Li

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### Course Overview

Econometrics uses statistical methods and economic theory to quantify economic phenomena, uncover relationships of economic variables, and predict future values of economic quantities. This course introduces you the basic econometric techniques and apply the techniques on real data. It focuses on linear regression with one and multiple regressors. It also introduces more advanced topics, such as instrumental variable estimation, to handle the endogenous problems.

### Prerequisite

Students should be familiar with linear algebra, basic probability and statistics, and (multi-variate) calculus.

### Course Assessment

1. Class Participation: 5% (bonus)
2. Six Assignments: 15%

3. Midterm Exam: 25%

4. Final Exam: 60%

## Software

The course will require use of the econometric package *Stata* to work on real data. We will also use Matlab to demonstrate the mechanics of various estimators. The students can also get access to Stata and Matlab via the computing cluster in the Department of Economics: <https://scrp.econ.cuhk.edu.hk/guide/stata>. The students do not need any prior knowledge on Stata or Matlab.

## Reference Books

Required textbook: [SW] Stock, James and Mark W. Watson, *Introduction to Econometrics*, 4th E.  
Supplementary textbook: [W] Wooldridge, Jeffrey. 2015. *Introductory Econometrics: A Modern Approach*.

## Tentative Schedule

Topics	Reading
Topic 1: Introduction to Econometrics	SW Chapter 1
Topic 2: Simple linear regression: Estimation	SW Chapter 4
Topic 3: Simple linear regression: Inference	SW Chapter 5
Topic 4: Multiple regression: Estimation	SW Chapter 6
Mid-term exam	
Topic 5: Multiple regression: Inference	SW Chapter 7
Topic 6: Nonlinear regression function	SW Chapter 8
Topic 7: Assessing studies based on multiple regressions	SW Chapter 9
Topic 8: Instrumental Variables	SW Chapter 12