# Chinese University of Hong Kong, Fall 2018

# ECON5121A: Econometric Theory and Applications

## Instructor:

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## Lecture Hours and Venue:

Starting from September 7, every Friday 8:30 - 11:15pm, ELB 205

**Topics (tentative):**

### This course is an entry-level graduate econometrics course. Knowledge of econometrics and statistics at the undergraduate level is prerequisite.

### Review of probability theory

### Conditional expectation and linear projection

### Least squares estimator

### Basic asymptotic theory

### Hypothesis testing

### Panel data model

### Endogeneity and instruments

### Generalized method of moments

### Nonparametric methods

### Numerical examples will be demonstrated in R.

### **Textbooks:**

### *Downloadable for free*

### Bruce Hansen (2018): Econometrics ([<http://www.ssc.wisc.edu/~bhansen/econometrics/>](http://www.ssc.wisc.edu/~bhansen/econometrics/)).

**References:**

### *For comprehensive coverage*

### Hayashi (2000): Econometrics

### *For undergraduate-level knowledge*

### Stock and Watson (2014): Introduction to Econometrics (3rd Ed.)

### *For mathematical statistics foundation*

### Casella and Berger (2002): Statistical Inference (2nd Ed.)

### *For machine learning*

### *Downloadable for free*

### [James](http://www-bcf.usc.edu/~gareth), [Witten](http://www.biostat.washington.edu/~dwitten/), [Hastie](http://www.stanford.edu/~hastie/) and [Tibshirani](http://www-stat.stanford.edu/~tibs/): An Introduction to Statistical Learning with Applications in R (<http://www-bcf.usc.edu/~gareth/ISL/>)

**Evaluations**

### midterm (50%): **Oct 19**

### final (50%): TBD