

Chinese University of Hong Kong, Spring 2024

ECON 5150: Applied Econometrics

Instructor:

Dr. Zhentao Shi, Associate Professor

Email: zhentao.shi@cuhk.edu.hk

Lecture Hours and venue:

- ELB 403
- Thursday 8:30 – 11:15 am
- Dates: 11/1, 18/1, 25/1, 1/2, 8/2, 22/2, 29/2, 7/3, 14/3, 21/3, 28/3, 11/4, 18/4

Prerequisites:

- ECON5120

Textbooks:

- Hansen (2021): Probability and Statistics for Economists [PS] (<https://www.ssc.wisc.edu/~bhansen/probability/>)
- Hansen (2021): Econometrics [E] (<http://www.ssc.wisc.edu/~bhansen/econometrics/>)

Assessment:

1. Midterm (50%)
2. Final (50%)

Both exams are closed book. One hand-written letter-size sheet is allowed.

Tentative coverage:

As a sequel to ECON5120, this course will cover advanced theoretical topics in econometric theory.

Part I: Extremum estimator

- Asymptotic theory I ([PS] ch.7, 8, 9; [E] ch.6)
- Asymptotic theory II ([PS] ch.9, 18)
- Extremum estimator ([E] ch.22)
- Maximum likelihood ([PS] ch.10)
- Quantile regressions ([E] ch.24)
- Numerical optimization ([PS] ch.12)

Part II: Time series

- Time dependence and asymptotics ([E] ch.14)
- ARMA models ([E] ch.14)
- Time series regressions ([E] ch.14)
- VAR models ([E] ch.15)
- Unit roots ([E] ch.16)

Academic Honesty:

Attention is drawn to University policy and regulations on honesty in academic work, and to the disciplinary guidelines and procedures applicable to breaches of such policy and regulations. Details may be found at <http://www.cuhk.edu.hk/policy/academichonesty/>.

Use of generative AI tools:

Approach 4 - Use of some AI tools is allowed with no acknowledgement. The instructor wishes that AI could be more powerful to help with mathematics.