

Mathematical Statistics

Department of Economics

Sogang University

Fall 2018

Instructor:

In Choi

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Time: M 16:30-17:45, W 16:30-17:45

Text:

- Cassella, G. and R.L. Berger (1990) *Statistical Inference*. Wadsworth.

References:

- Ash, R. (1972) *Real Analysis and Probability*. Academic Press.
- Bickel, P.J. and K. A. Doksum (2007) *Mathematical Statistics*. Second edition. Pearson Prentice Hall.
- Billingsley, P. (2008). *Probability and Measure*. John Wiley & Sons.
- Chung, K. L. (2001). *A Course in Probability Theory*. Academic press.
- Cox, D. R., & Hinkley, D. V. (1979). *Theoretical Statistics*. CRC Press.
- Hogg, R. V., & Craig, A. T. (1978). *Introduction to Mathematical Statistics*. Macmillan.
- Lehmann, E.L. (1999) *Elements of Large-Sample Theory*. Springer.
- Lehmann, E.L. and G. Casella (1998) *Theory of Point Estimation*. Springer.
- Lehmann, E.L. and J.P. Romano (2005) *Testing Statistical Hypothesis*. Springer.
- Pollard, D. (2002) *A User's Guide to Measure Theoretic Probability*. Cambridge University Press.

- Vaart, A.W. van der (1998) *Asymptotic Statistics*. Cambridge University Press.

Description of the Course:

The purpose of this course is to introduce probability and statistics at the graduate level. The course assumes that students took a basic course in statistics.

Evaluation:

The final grade will be decided by homework (50%) and a take-home final examination (50%).

Course Outline and Reading Guide:

1. Probability theory (CB Ch 1)
2. Transformations and expectations (CB Ch. 2)
3. Distributions (CB Ch. 3)
4. Multiple random variables (CB Ch 4)
5. Properties of a random sample (CB Ch 5)
6. Principles of data reduction (CB Ch 6)
7. Point estimation (CB Ch 7)
8. Hypothesis testing (CB. Ch 8)