

STA3000 - Advanced Theory of Statistics

University of Toronto Fall 2015

Lectures: Monday 6-9pm at SS2101
Instructor: Gun Ho Jang
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Office Hours: Monday 4:30-5:30pm or by appointments.

Course Description

This is the first half of the year long course. The covered topics in the first half include basic concepts of inference (statistical models, sufficiency, ancillarity, exponential models, group models), estimators and asymptotics (maximum likelihood estimators, Bayesian estimators).

Prerequisite

STA2112H and STA2212H or equivalent. (STA2111H and STA2211H may be co-requisites). Some familiarity with measure theory is very useful. The text includes some supplementary material on this.

Reference

No specific textbook will be used. Instead the following references are useful.

- J. Berger (1984). *Statistical Decision Theory*. Springer.
- G. Casella and R. Berger (2001). *Statistical Inference*. Duxbury, 2nd ed.
- M. Evans (2015). *Measuring Statistical Evidence Using Relative Belief*. CRC Press.
- J. Kadane (2011). *Principles of Uncertainty*. CRC Press.
- E. Lehmann and G. Casella (1998). *Theory of Point Estimation*. Springer, 2nd ed.
- E. Lehmann and J. Romano (2005). *Testing Statistical Hypotheses*. Springer, 3rd ed.
- C. Robert (2001). *The Bayesian Choice*. Springer, 2nd Edition.
- M. Schervish (1994). *Theory of Statistics*. Springer.

Evaluation

Three to five assignments (30%) and a sitdown exam (20%)