

Statistics 971

Syllabus, Spring 2019

Classes: Mon/Wed 1:30–2:50 p.m., in JMHH F94

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Office hours: Wed 3:00–4:00 p.m., or by appointment

Course Overview

This course is the second semester of the first year PhD level mathematical statistics sequence. The course focuses on large sample theory. Course prerequisite is STAT 970.

Textbook and References

There is no required textbook for the course. The following two books are recommended as references:

- *Asymptotic Statistics*, by A.W. van der Vaart. Cambridge University Press, 1998.
- *Testing Statistical Hypothesis, 3rd Ed.*, by E.L. Lehmann and J.P. Romano, Springer, 2005.

Either one makes an excellent reference for future work.

Course Requirements and Grading Policy

There will be four problem sets, one midterm and one final. Evaluation will be based on homework (30%), midterm (35%) and final (35%).

Tentative Content List

- Stochastic convergence
- Delta method
- M - and Z - estimators
- Contiguity and local asymptotic normality
- Efficiency of estimators
- U -statistics
- Efficiency of tests
- Stochastic convergence in metric spaces
- Empirical processes