

SYLLABUS

STA 7346

Inference

Fall, 2024

Instructor: Malay Ghosh
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Objective:

The objective of STA 7346 is to provide a solid foundation in the theory of statistical inference. The course will focus on decision theoretic and Bayesian point estimation, multiparameter estimation, maximum likelihood estimation and generalized likelihood ratio tests

Policy:

A student's grade for the Fall Semester is determined from scores on the quizzes (20%), two midterm exams (25% each), and a comprehensive final exam (30%).

Course Outline:

- A. Decision Theory, Bayesian Analysis
- B. Multiparameter Estimation
- C. Asymptotic Theory of Estimation
- D. Generalized Likelihood Ratio Tests

Textbook: Lecture Notes of the Instructor.

Primary References:

- 1. E.L. Lehmann & G. Casella: Theory of Point Estimation, 2nd Edition.
- 2. T.S. Ferguson: Mathematical Statistics: A Decision Theoretic Approach

Other References:

- 1. R.R. Bahadur: Lecture Notes on Estimation
- 2. J.O. Berger: Statistical Decision Theory and Bayesian Analysis, 2nd Edition.
- 3. P. Bickel & K. Doksum: Mathematical Statistics: Basic Ideas and Selected Topics. 2nd Edition.
- 4. G. Casella & R. Berger: Statistical Inference, 2nd Edition.
- 5. J. Kiefer: Introduction to Statistical Inference.
- 6. C.R. Rao: Linear Statistical Inference and its Applications.
- 7. C.P. Robert: The Bayesian Choice, 2nd Edition.
- 8. F. Samaniego: A Comparison of the Bayesian and Frequentist Approaches to Estimation.
- 9. M. J. Schervish: Theory of Statistics.
- 10. J. Shao: Mathematical Statistics.
- 11. S. Zacks: The Theory of Statistical Inference.