MAS713 Mathematical Statistics

Learning Objective

Provide some basic statistical tools, statistical decision theory and statistical inference, useful for the future research.

Syllabus

- Review of probability, random variables and their distributions, and inequalities
- Order statistics and convergence concepts
- Principles of data reduction, the sufficiency principle and the likelihood principle
- Point estimation in parametric setting
- Interval estimation
- Hypothesis testing
- Asymptotic evaluations and robustness

Academic Unit

4 AU

Pre-requisite

Approval by the division

Student Assessment

Examinations: 50%
Continuous Assessment: 50%

Textbooks/References
- George Casella and Roger L. Berger, Statistical Inference (2nd Edition), Duxbury Thomson Learning 2001

- Peter Bickel and Kjell A. Doksum, Mathematical Statistics (Vol 1, Updated printing 2nd Edition), Pretice-Hall, Inc 2006

- Krishna B. Athreya and Soumendra N. Lahiri, Measure Theory and Probability Theory, Springer

Additional Reference
• Shao Jun, Mathematical Statistics (2nd Edition), Springer 2003