Exponential families; sufficient statistics, convex loss functions, UMVA estimators, the information inequality, the multiparameter case and other extensions; Bayesian inference; asymptotic efficiency; efficient likelihood estimation; the Neyman-Pearson fundamental lemma; distributions with monotone likelihood ratio; a generalization of the fundamental lemma; two-sided hypotheses; least-favorable distributions; unbiasedness for hypothesis testing with one-parameter exponential families; similarity and completeness; UMP unbiased tests for multiparameter exponential families.

This material is covered in STAT 7031.

Texts:
Casella and Berger, Statistical Inference (2nd edition).
Lehmann and Casella, Theory of Point Estimation.
Lehmann, Testing Statistical Hypotheses.