

MAIN TOPICS FOR FINAL

All topics for Exams 1 and 2, plus:

- (1) The CLT for maximum likelihood estimators
 - (a) main ideas of proof (CLT on ℓ' + Taylor series techniques)
 - (b) regularity conditions, especially (R5)
 - (c) asymptotic efficiency
 - (d) asymptotic relative efficiency (ARE)
 - (e) CLT for medians
- (2) Hypothesis testing
 - (a) Likelihood ratio, Wald, score tests
 - (b) Asymptotic behavior
 - (c) Approach to small values of n for a given family of distributions
- (3) 2-parameter likelihood
 - (a) likelihood functions
 - (b) maximum likelihood estimators
 - (c) Fisher information, rough statement of 2-parameter CLT for mles
 - (d) example: normal distribution $N(\theta_1, \theta_2)$

The final will be cumulative, with heavy emphasis on the material covered since Exam 2.

Expect several True/False questions, followed by 2-3 other questions (possibly with multiple parts).

The use of books or calculators will not be permitted during the exam. You may bring in a single 8.5 x 11 sheet of notes. (Feel free to use both sides.)