

UH Statistics Prelim Exam in Statistics
Based on Math 6383 (14881) Mathematical Statistics

Recommended books:

Textbook:

John A. Rice : Mathematical Statistics and Data Analysis, 3rd edition
Brooks / Cole, 2007. ISBN-13: 978-0-534-39942-9.

P. McCullagh and J.A. Nelder: Generalized Linear Models, 2nd ed. 1999 Chapman
Hall/CRC

Contents: The Statistics Prelim Exam will cover the materials in the MATH 6383 Mathematical Statistics course. The contents include common probability distributions, the basic distribution of random variables, joint distributions, marginal and conditional distributions, expectations, variance, conditional expectation and variances. Laws of large numbers, central limit theorem, and three modes of convergence, methods of moment and maximum likelihood estimations, Fisher information, Cramere-Rao lower bound, sufficient and complete statistics, basic concepts in hypothesis testing, Neyman-Pearson lemma, most powerful test, duality of hypothesis testing and confidence interval, exponential family distributions, and parameter estimation. Interpretation of linear model and logistic regression model parameters, etc.