The Department of Mathematics

2018–19–A term

Course Name Mathematical Statistics 1

Course Number 201.1.8011

Course web page
 https://www.math.bgu.ac.il//en/teaching/fall2019/courses/mathematical-statistics

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Office Hours https://www.math.bgu.ac.il/en/teaching/hours

Abstract

Requirements and grading[1]

Course topics

(1) Parametric point estimation: sampling, statistics, estimators, sample mean, sample variance, method of moments, maximum likelihood.(2) Properties of point estimators: mean square error, loss and risk functions, unbiased estimators, lower bound for variance (Rao-Cramer inequality), efficient estimators.(3) Sufficient statistics: factorization criterion, sufficiency and completeness, exponential families of distributions, finding of minimal variance unbiased estimators.(4) Parametric interval estimation: confidence interval, sampling from normal distribution, confidence intervals for mean and variance, large sample confidence interval.(5) Test of hypotheses: simple hypothese versus simple alternative, most powerful test, composite hypotheses, unfiormly most powerful test, sampling from normal distribution, tests for mean and variance.(6) Comparison of two populations: confidence interval for dffierences of two means, test on two means, tests concerning variances, goodness of fit tests, tests on independence.

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[1]Information may change during the first two weeks of the term. Please consult the webpage for updates