אוניברסיטת
בן-גוריון בנגב

The Department of Mathematics

2019—20—A term

Course Name Probabilty Theory For EE

Course Number 212.1.9831

Course web page
`https://www.math.bgu.ac.il//en/fall2020/courses/probabilty-theory-for-ee`

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

Abstract

Requirements and grading[1]

Course topics

The aim of the course is to study main principles of probability theory. Such themes as probability spaces, random variables, probability distributions are given in details.Some applications are also considered.1. Probability space: sample space, probability function, finite symmetric probability space, combinatorial methods, and geometrical probabilities.2. Conditional probability, independent events, total probability formula, Bayes formula. .3 Discrete random variable, special distributions: unfiorm, binomial, geometric, negative binomial, hypergeometric and Poisson distribution. Poisson process.4. Continuous random variable, density function, cummulative distribution function. Special distributions: unfiorm, exponential, gamma and normal. Transformations of random variables. Distribution of maximum and minimum. Random variable of mixed type.5. Moments of random variable. Expectation and variance. Chebyshev inequality.6. Random vector, joint probability function, joint density function, marginal distributions. Conditional density, covariance and correlation coefficient.7. Central Limit Theorem. Normal approximation. Law of Large Numbers.

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