The Department of Mathematics  
2023–24–A term

Course Name  Probability 1 for statisticians

Course Number  201.1.9921

Course web page  
https://www.math.bgu.ac.il/en/teaching/fall2024/courses/prob1-statistics

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

Abstract

Requirements and grading

Course topics

Basic combinatorics

• Sample space and events. Probability mass function

• Conditional probability. Law of total probability. Bayes? formula

• Independence

• Useful discrete distributions: uniform, binomial, geometric, Poisson, hyper-
geometric, negative binomial.

• Expectation, variance, median, percentile

• Functions of a random variable

• Two dimensional distributions: joint distribution, marginal distribution, covariance, conditioning on marginals

• Markov, Chebychev and Jensen inequalities

• Normal distribution

1Information may change during the first two weeks of the term. Please consult the webpage for updates
• Sequences of random variables: law of large numbers and central limit theorem