

## The Department of Mathematics

2021–22–B term

**Course Name** Introduction to Statistics A

**Course Number** 201.1.9421

**Course web page**

<https://www.math.bgu.ac.il/en/teaching/spring2022/courses/introduction-to-statistics-a>

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

### Abstract

### Requirements and grading<sup>1</sup>

### Course topics

1. Descriptive statistics: organizing, processing and displaying data.
2. Sampling distributions: Normal distribution, the student t-distribution, Chi-Square distribution and Fisher's F-distribution
3. Estimation: A point estimate and Confidence Interval of population parameters: Mean variance and proportion. Tolerance interval.
4. Testing hypothesis about a population's parameters: Mean, variance and proportion.
5. Evaluating the properties of a statistical test: errors, significance level and power of a test.
6. Testing hypothesis about equality of variances, equality of means and equality of proportions of two populations.
7. Testing for independence of factors: Normal and Chi-Square methods.
8. Testing for goodness of fit of data to a probabilistic model: Chi-Square test.
9. Linear regression: Inference about the utility of a linear regression model. Covariance and correlation coefficient. Confidence and prediction intervals.
10. Weibull distribution: estimating the distribution's parameters

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<sup>1</sup>Information may change during the first two weeks of the term. Please consult the webpage for updates