The Department of Mathematics  
2023–24–A term

Course Name  Discrete Mathematics for Communication Engineering  
Course Number  201.1.6201  
Office Hours  [https://www.math.bgu.ac.il/en/teaching/hours](https://www.math.bgu.ac.il/en/teaching/hours)  

Abstract

Requirements and grading

Course topics

Prerequisites: 2019531 Linear Algebra

Brief syllabus

.1 Operations over sets, logical notation, relations.

.2 Enumeration of combinatorial objects: integer numbers, functions, main principles of combinatorics.

.3 Elementary combinatorics: ordered and unordered sets and multisets, binomial and multinomial coefficients.

.4 Principle of inclusion and exclusion, Euler function.

.5 Graphs: representation and isomorphism of graphs, valency, paths and cycles.

.6 Recursion and generating functions: recursive definitions, usual and exponential generating functions, linear recurrent relations with constant coefficients.

.7 (Optional) Modular arithmetics: congruences of integer numbers, $\mathbb{Z}_m$, invertible elements in $\mathbb{Z}_m$.

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