The Department of Mathematics
2019–20–A term

Course Name  Discrete Mathematics for Communication Engineering

Course Number  201.1.6201

Course web page  https://www.math.bgu.ac.il/en/teaching/fall2020/courses/discrete-mathematics-for-communication-engineering

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

Requirements and grading

Course topics

Prerequisites: 20119531 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.

Information may change during the first two weeks of the term. Please consult the webpage for updates.
7. (Optional) Modular arithmetics: congruences of integer numbers, \( \mathbb{Z}_m \), invertible elements in \( \mathbb{Z}_m \).