

## The Department of Mathematics

2017–18–B term

**Course Name** Introduction to logic and Discrete Mathematics For Computer Engineering

**Course Number** 201.1.9861

**Course web page**

<https://math.bgu.ac.il/en/teaching/spring2018/courses/introduction-to-logic-and>

**Lecturer** Prof. Shakhar Smorodinsky, <shakhar@bgu.ac.il>, Office 208

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

### Abstract

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

### Course topics

Logic and Set theory: propositional calculus, boolean operators and their truth tables, truth values of formulae, logical equivalence and logical inference, tautologies and contradictions, the important tautologies, e.g., the distributive laws and De Morgan formulae. Sets: inclusion, union, intersection, difference, cartesian product, relations, equivalence relations, partial orders, linear orders, and functions. Basic Combinatorics: induction, basic counting arguments, binomial coefficients, inclusion-exclusion, recursion and, generating functions. Graphs: general notions and examples, isomorphism, connectivity, Euler graphs, trees.

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