### Seminar in Sublinear Algorithms

**Lecturer:**

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**Course Requirements:**

Final Exam

**Group Code:** 231389400  
**Language:** Hebrew

### Prerequisites

**Prerequisite:**

52 - Calculus I  
53 - Calculus II  
54 - Linear Algebra I  
55 - Linear Algebra II  
56 - Discrete Mathematics  
59 - Data Structures  
69 - Logic And Set Theory  
77 - Algorithms  
417 - Introduction To Computer Science

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**Course Description**

In the world of big data, massive datasets are being analyzed and processed constantly. As a result, classical models of computation, in which polynomial-time algorithms are
considered efficient, may become inadequate.

In the field of sublinear-time algorithms, the goal is to design extremely fast algorithms that probe only a minuscule portion of the input, and analyze their behavior rigorously.

In this seminar each student will pick a paper in the field and present it.

The list of optional topics will include classical results in sublinear algorithms as well as new, state-of-the-art techniques from recent papers.

Specific relevant topics:
- Sublinear algorithms for approximating graph parameters
- Property Testing
- The local computation model (LCA)
- Distributed algorithms related to sublinear algorithms

Course Goals

The goals of this seminar is to introduce both basic techniques in sublinear algorithms as well as more advanced and recent concepts.

Moreover, the students will practice reading academic papers and preparing a presentation.

Grading

The grade will be given based on the presentation of selected paper.

Lecturer Office Hours

TBA

Reading List

TBA