



Course program and reading list

Semester 2 Year 2024

School: Efi Arazi School of Computer Science M.Sc.

Advanced Algorithms

Lecturer:

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Course No.:	Course Type :	Weekly Hours :	Credit:
3501	Lecture	3	4

Course Requirements :	Group Code :	Language:
Final Exam	241350101	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

Students who took one of the courses listed below will not be allowed to register to the course Advanced Algorithms (3501):


3595 – Resource Allocation Algorithms

 Course Description

An advanced course intended mainly for M.Sc. students. The course will cover a wide range of topics relating to algorithm design and analysis. We will cover many subjects that will give the students a taste of advanced algorithmic techniques and approaches to solving problems algorithmically. Subjects covered include randomized algorithms, algebraic algorithms, approximation algorithms for NP-hard problems, linear programming, and more.

 Course Goals

The goal of this course is to introduce the students to various algorithmic techniques for solving problems, and to strengthen the students' ability to design, analyze and argue formally about algorithms and computation.

 Grading

The grade is composed of 30% homework assignments (5-6 problem sets) and 70% final written exam.

The HW average will be computed as an average of the best $n-1$ grades out of the n problem sets.

To pass the course, a student must receive passing grade (60 and above) in the exam.

 Reading List

All of the course material will be available in the Moodle page.

There is no single book that covers the whole material. Recommended textbooks for each chapter will be given in the lecture notes.