Algorithms 1 (234247)  
Spring 2017 (אביו תשע”ז) Syllabus

1 Staff

Lecturers

• Prof. Roy Schwartz

Teaching Assistants

• Itay Evron (TA in Charge)
• Yaron Fairstein
• Michal Friedman
• Elad Kravi
• Maya Levy

2 Course Material

<table>
<thead>
<tr>
<th>Topic</th>
<th>Approx. Time</th>
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<tbody>
<tr>
<td>Breadth First Search (BFS)</td>
<td>2 hours</td>
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<tr>
<td>Depth First Search (DFS)</td>
<td>2 hours</td>
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<tr>
<td>Inseparable Components / Strongly Connected Components</td>
<td>2 hours</td>
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<tr>
<td>Minimum Spanning Trees (MST)</td>
<td>3 hours</td>
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<tr>
<td>Shortest Path Problem</td>
<td>3 hours</td>
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<tr>
<td>Greedy Algorithms</td>
<td>3 hours</td>
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<tr>
<td>Dynamic Programming</td>
<td>5 hours</td>
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• Including All-Pairs Shortest Path (APSP) Problem.

Maximum Flow Problem                            6 hours
3 Grading

The final exam will constitute 90%-100% of the grade, depending on the homework grades (see the details below). Only students who miss an exam due to reserve duty will be entitled for “Moed Gimel”. A student who wishes to attend Moed Gimmel must provide the necessary documentation to the TA in charge.

4 Exam Dates

- Moed A will take place on Friday, July 7th, 2017.
- Moed B will take place on Monday, September 25th, 2017.

5 Homework Policy

- 5 problem sets will be given throughout the semester, each is 2% “magen” for computing the final grade (independently).
- In order to get a grade in the course, you have to submit and pass at least 4 assignments.
- Both tests (Moed A and B) will include a question or a sub-question from the homework.
- Submission will be in pairs. No other submissions will be graded, unless authorized by the TA in charge.
- In each home assignment, we will thoroughly examine only one or two questions (50 points), and the rest of them will only be briefly examined (50 points).
- Postponements will only be given for active reserve duty. No extensions will be granted due to illness or other issues.
- Every student registered to the course is expected to submit the home assignments, including students repeating the course (even those who already have a passing grade).

6 Workshops

In order to assist you with the home assignments, we will hold workshops in which you can consult the TAs before the assignment is due. We highly recommend that you take advantage of this opportunity to make the most out of the course!

7 Course Website

The course has an online website at http://webcourse.cs.technion.ac.il/234247. You are expected to visit the website and read updates frequently. The course also has a mailing list; make sure you are registered for receiving updates (Auto Update on the GR website).
8 Literature

The course textbooks are:


Notes regarding the books:

1. There is a third edition of the Introduction to Algorithms book. The course follows the second edition.

2. There is a Hebrew translation of Chapters 1-7 of the Algorithm Design book; it is called “פיתוח אלגוריתמי.”

3. On the course website you can find a lecture notes booklet. The booklet contains most of the studied material, although there may be some differences. In any case, the exam is based on the material taught during the lectures and tutorials.