Automata And Formal Languages

Lecturer:

Prof. Yacov Hel-Or  toky@runi.ac.il

Teaching Assistant:

Mr. Ohad Goudsmid  ohad.goudsmid@post.runi.ac.il

Mr. Segev Tsur  segev.tsur@post.runi.ac.il

Ms. Iris Kalka  iris.kalka@post.runi.ac.il

Mr. Sharon Peled  sharon.peled01@post.runi.ac.il

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Course No.: 643  
Course Type: Lecture  
Weekly Hours: 3  
Credit: 4

Course Requirements: Final Exam  
Group Code: 222064301  
Language: Hebrew

Prerequisites

Prerequisite:

56 - Discrete Mathematics  
69 - Logic And Set Theory

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Course Description
Automata and Formal Languages: Syllabus

- **Unit 1**: Math background, set theory, words and their operations, languages and their operations
- **Unit 2**: Finite Automaton (FA), regular languages
- **Unit 3**: Regular Operations and their closure, DFA and NFA, regular operations
- **Unit 4**: Regular expressions
- **Unit 5**: Equivalent DFA, minimization of DFA
- **Unit 6**: Non-regular languages, the pumping lemma
- **Unit 7**: Context-free languages (CF), CF grammar, regular grammar, closure of CFL, Chomsky Normal form, Chomsky hierarchy.
- **Unit 8**: Pushdown Automaton (PDA).
- **Unit 9**: PDA=CFG, conversion PDA to and from CFG, the pumping lemma
- **Unit 10**: The Turing Machine, decidability, wrap up

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Course Goals

Understanding models of computations.

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Grading

Exam 70%, HW 30%

One must pass the exam (60) in order to have the HW component.

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Teaching Assistant

Iris Kalka

Gilad Ben-Uziyahu

Shlomit Harush

Ohad Goudsmid

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Additional Notes

Homework: Will be given every week.
Submission: Through Moddle
Appeals: No later than two weeks after return.
Reading List

Theory of Computation / M. Sipser
Optional: Open University.