Syllabus

INTRODUCTION TO COMPUTER SCIENCE FOR TALPIOT
STU - 67108

Last update 20-05-2015

**HU Credits:** 6

**Degree/Cycle:** 1st degree (Bachelor)

**Responsible Department:** computer sciences

**Academic year:** 1

**Semester:** 1st Semester

**Teaching Languages:** Hebrew

**Campus:** E. Safra

**Course/Module Coordinator:** Nadav Rappoport

**Coordinator Email:** nadavrap@cs.huji.ac.il

**Coordinator Office Hours:** Coordinate in advance

**Teaching Staff:**
- Ms. Shelly Mahlab
Course/Module description:  
Familiarity with Computer Science Programming Python language and recognition of selected topics in computer science.

Course/Module aims:  
Design and realization of selected algorithms from computer science in the Python language.

Learning outcomes - On successful completion of this module, students should be able to:  
Plan and implement selected algorithms from computer science in the Python language.

Attendance requirements(%):  
0

Teaching arrangement and method of instruction: Frontal lecture and exercise.

Course/Module Content:  
1. expressions, vars, if, input, converters  
2. iteration, while, problems, primes, sequences. Guest appearances: iterability, range specifics,  
3. for, problems: roots, binary search, files  
4. functions, search, functional programming, numerics: deriv, integrals  
5. recursion, sort  
6. set, dict, comprehensions, iterators-generators  
7. Object Oriented Programming (OOP)  
8. Dictionary problem, scrambling functions, String search  
9. Data Structures — Linked list, Queue, Stack, search tree  
10. Recursion, functional programming, Computability  
11. Compression - Huffman coding, Ziv — Lempel  
12. Representation and image processing, iterative processes  
13. Codes for error detection and correction, communication

Required Reading:  
NA
**Additional Reading Material:**
NA

**Course/Module evaluation:**
End of year written/oral examination 60 %
Presentation 0 %
Participation in Tutorials 0 %
Project work 0 %
Assignments 40 %
Reports 0 %
Research project 0 %
Quizzes 0 %
Other 0 %

**Additional information:**
NA