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