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