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