Syllabus

INTRODUCTION TO COMPUTER SCIENCE - 67101

Last update 29-09-2015

**HU Credits:** 7

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

**Responsible Department:** computer sciences

**Academic year:** 0

**Semester:** 1st Semester

**Teaching Languages:** Hebrew

**Campus:** E. Safra

**Course/Module Coordinator:** Dr Aviv Zohar and Prof Noam Nisan

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

**Coordinator Office Hours:** Noam Nisan: Thursdays 10:30-11:30

**Teaching Staff:**
 Dr. Aviv Zohar
 Prof Noam Nisan
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:
Design and realization of 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
14. Multiple processes
Required Reading:
NA

Additional Reading Material:
NA

Course/Module evaluation:
End of year written/oral examination 50 %
Presentation 0 %
Participation in Tutorials 0 %
Project work 0 %
Assignments 50 %
Reports 0 %
Research project 0 %
Quizzes 0 %
Other 0 %

Additional information:
NA