האוניברסיטה העברית בירושלים
THE HEBREW UNIVERSITY OF JERUSALEM

The Hebrew University of Jerusalem

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
Mr. Green Ayal
Mr. Guy Eyal
Mr. Zarchy Doron
Mr. Asaf Valadarsky
Mr. Ohad Dan

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