



Engineering studies in IT - międzynarodowy program studiów
prowadzonych przez Wydział Matematyki i Informatyki UAM w Poznaniu
Nr projektu POWR.03.03.00-IP.08-00-MPK/16

ALGORITHMS AND DATA STRUCTURES

Learning module description

GENERAL INFORMATION

1. Module title: Algorithms and data structures
2. Module code: DASD LI0-E
3. Term: winter
4. Duration: 30h lectures + 15h exercises + 15h laboratories
5. ECTS: 6
6. Module lecturer: Zbigniew Palka
7. E-mail: palka@amu.edu.pl
8. Language: English

DETAILED INFORMATION

1. Module aim: is to familiarize students with basic methods of the construction of algorithms and the use of simple and complex types of data structures.
2. Pre-requisites in terms of knowledge, skills and social competences (where relevant):
No requirements.

SYLLABUS:

- Week 1: Pseudocode
- Week 2: Static data structure (arrays)
- Week 3: Recurrence procedures
- Week 4: Recurrence procedures (cont.)
- Week 5: Efficiency of algorithms
- Week 6: Sorting algorithms
- Week 7: Sorting algorithms (cont.). Stacks, queues and lists
- Week 8: Stacks, queues and lists (cont.)
- Week 9: Graphs. Breadth-first search and depth-first search algorithms
- Week 10: Heaps, priority queues
- Week 11: Binary search trees
- Week 12: Red-black trees
- Week 13: Hashing
- Week 14: Greedy method
- Week 15: Back-tracking method