



## Data Structures

Lecturer: dr hab. inż. Krzysztof Goczyła, prof. PG

### Course description:

- Basic concepts: data, data type, data structure, algorithm.
- Complexity of algorithms: Computational complexity and space complexity. Rules of estimating complexity. Symbols:  $O$  and  $\Theta$ . Classes of complexity for popular algorithms.
- Pseudoprograms – notational conventions.
- Tables: Sequential search. Binary search. Interpolation search.
- Hash tables – basic definitions. Methods of collision resolution in hash tables: chaining and open addressing. Methods of building key-to-address transformations.
- Sorting tables: Insertion Sort, Selection Sort, Exchange Sort. Simple and advanced methods. Complexity of sorting
- Recursive data types – basic definitions.
- Lists and queues: FIFO, LIFO.
- Trees – basic definitions.
- Perfectly balanced trees. Basic formulae.
- Binary Search Trees: Searching, inserting and deleting in Binary Search Trees. Random trees. Tables vs trees.
- Digital Search Trees.

TERMINY WYKŁADÓW			
Data	Dzień tygodnia	Godzina	Sala
10.05.2012	Czwartek	14-17	06 Stary gmach ETI
11.05.2012	Piątek	8-11	06 Stary gmach ETI
17.05.2012	Czwartek	14-17	06 Stary gmach ETI
18.05.2012	Piątek	8-11	06 Stary gmach ETI
24.05.2012	Czwartek	14-17	06 Stary gmach ETI