



MODULE DESCRIPTION

Module code	
Module name	Algorytmy i struktury danych
Module name in English	Algorithms and Data Structures
Valid from academic year	2012/2013

MODULE PLACEMENT IN THE SYLLABUS

Subject	Computer Science
Level of education	1st degree <i>(1st degree / 2nd degree)</i>
Studies profile	General <i>(general / practical)</i>
Form and method of conducting classes	Full-time <i>(full-time / part-time)</i>
Specialisation	
Unit conducting the module	The Department of Computer Science
Module co-ordinator	Barbara Łukawska, PhD, Eng.
Approved by:	

MODULE OVERVIEW

Type of subject/group of subjects	Basic <i>(basic / major / specialist subject / conjoint / other HES)</i>
Module status	Compulsory <i>(compulsory / non-compulsory)</i>
Language of conducting classes	Polish
Module placement in the syllabus - semester	2nd semester
Subject realisation in the academic year	Summer semester <i>(winter / summer)</i>
Initial requirements	The Fundamentals of Programming <i>(module codes / module names)</i>
Examination	Yes <i>(yes / no)</i>
Number of ECTS credit points	6

Method of conducting classes	Lecture	Classes	Laboratory	Project	Other
Per semester	30	30		15	



TEACHING RESULTS AND THE METHODS OF ASSESSING TEACHING RESULTS

Module target	The aim of the module is to acquaint students with: basic algorithm types; the rudiments of algorithm analysis and their correctness; dynamic data structures, their implementations and basic algorithms associated with them.
----------------------	---

Effect symbol	Teaching results	Teaching methods (l/c/l/p/other)	Reference to subject effects	Reference to effects of a field of study
W_01	A student can list and describe classical algorithms applied in computer science.	l	K_W07	T1A_W03
W_02	A student is able to suggest a verification and assessment method of a particular algorithm.	l	K_W07	T1A_W03, T1A_W07
W_03	A student can list basic data types and structures. In addition, a student can indicate the advantages and disadvantages of applying dynamic data structures.	l	K_W07	T1A_W03
U_01	A student can build an algorithm with various algorithmic techniques.	c	K_U01, K_U13, K_U19	T1A_U01, T1A_U07, T1A_U09
U_02	A student is capable of analysing diverse algorithms as regards solving a particular problem.	c	K_U01, K_U13, K_U19	T1A_U01, T1A_U07, T1A_U09
U_03	A student can solve classical problems concerning computer science using appropriate algorithms.	c	K_U01, K_U13	T1A_U01, T1A_U13
U_04	A student can apply dynamic data structures.	c	K_U13	T1A_U13, T1A_U14
K_01	A student can divide a programming problem into elements and co-operate in a team while implementing it.	p	K_K03	T1P_K03

Teaching contents:

Teaching contents as regards lectures

Lecture number	Teaching contents	Reference to teaching results for a module
1	Basic data structures. Simple data structures.	W_03
2-4	Dynamic structures.	W_03
5-6	The fundamentals of the algorithm theory.	W_01, W_02, W_03
7-9	Algorithm classes.	W_01, W_02
10-15	Algorithm families.	W_02

Teaching contents as regards classes

Class number	Teaching contents	Reference to teaching results for a module
1	Basic data structures. Simple data structures.	U_04
2-4	Dynamic structures.	U_03, U_04
5-6	The fundamentals of the algorithm theory.	U_01, U_02, U_03
7-9	Algorithm classes.	U_01, U_02, U_03
10-15	Algorithm families.	U_01, U_02,



		U_03
--	--	------

The characteristics of project assignments

A project assignment consists in preparing an application realising an algorithm selected to solve a presented problem (U_01, U_02, and K_01).

The methods of assessing teaching results

Effect symbol	Methods of assessing teaching results <i>(assessment method, including skills – reference to a particular project, laboratory assignments, etc.)</i>
W_01	A written examination, a test during the classes
W_02	A written examination, a test during the classes
W_03	A written examination, a test during the classes
U_01	Class assignments, a project assignment, and a test during the classes
U_02	Class assignments, a project assignment, and a test during the classes
U_03	Class assignments, a test during the classes
U_04	Class assignments, a project assignment, and a test during the classes
K_01	A project assignment

STUDENT'S INPUT

ECTS credit points		
	Type of student's activity	Student's workload
1	Participation in lectures	30
2	Participation in classes	30
3	Participation in laboratories	-
4	Participation in tutorials (2-3 times per semester)	-
5	Participation in project classes	15
6	Project tutorials	-
7	Participation in an examination	2
8		
9	Number of hours requiring a lecturer's assistance	77 <i>(sum)</i>
10	Number of ECTS credit points which are allocated for assisted work <i>(1 ECTS credit point=25-30 hours)</i>	3
11	Unassisted study of lecture subjects	
12	Unassisted preparation for classes	30
13	Unassisted preparation for tests	10
14	Unassisted preparation for laboratories	
15	Preparing reports	
16	Preparing for a final laboratory test	
17	Preparing a project or documentation	20
18	Preparing for an examination	10
19	Preparing questionnaires	
20	Number of hours of a student's unassisted work	70 <i>(sum)</i>



Projekt współfinansowany ze środków Unii Europejskiej w ramach Europejskiego Funduszu Społecznego

21	Number of ECTS credit points which a student receives for unassisted work <i>(1 ECTS credit point=25-30 hours)</i>	3
22	Total number of hours of a student's work	147
23	ECTS credit points per module <i>1 ECTS credit point=25-30 hours</i>	6
24	Work input connected with practical classes <i>Total number of hours connected with practical classes</i>	115
25	Number of ECTS credit points which a student receives for practical classes <i>(1 ECTS credit point=25-30 hours)</i>	4