



### MODULE DESCRIPTION

Module code	
Module name	<b>Systemy operacyjne 1</b>
Module name in English	<b>Operating Systems 1</b>
Valid from academic year	<b>2012/2013</b>

### MODULE PLACEMENT IN THE SYLLABUS

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

### MODULE OVERVIEW

Type of subject/group of subjects	<b>Major</b> <i>(basic / major / specialist subject / conjoint / other HES)</i>
Module status	<b>Compulsory</b> <i>(compulsory / non-compulsory)</i>
Language of conducting classes	<b>Polish</b>
Module placement in the syllabus - semester	<b>3<sup>rd</sup> semester</b>
Subject realisation in the academic year	<b>Winter semester</b> <i>(winter / summer)</i>
Initial requirements	<b>The Fundamentals of Programming 2, Computer Architecture 1</b> <i>(module codes / module names)</i>
Examination	<b>No</b> <i>(yes / no)</i>
Number of ECTS credit points	<b>5</b>

Method of conducting classes	Lecture	Classes	Laboratory	Project	Other
Per semester	<b>30</b>		<b>30</b>		

### TEACHING RESULTS AND THE METHODS OF ASSESSING TEACHING RESULTS



Projekt współfinansowany ze środków Unii Europejskiej w ramach Europejskiego Funduszu Społecznego

<b>Module target</b>	The aim of the module is to familiarise students with the structure and the principles of operation concerning an operating system. During the classes, a student acquires knowledge concerning process and threads management, internal memory, and support memory.
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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 is familiar with the general structure of an operating system.	l/l	KW_09	T1A_W03, T1A_W07
W_02	A student knows the notion of a process and thread as well as the issues concerning sequencing, synchronization, and communication of processes and threads.	l	KW_09	T1A_W03, T1A_W07
W_03	A student is familiar with the issues connected with managing diverse types of memories.	l/l	KW_09	T1A_W03, T1A_W07
U_01	A student can use an operating system function.	l	KU_12, KU_15	T1A_U08, T1A_U09, T1A_U16
U_02	A student can analyse the operation of subsystems of an operating system.	l	KU_12, KU_15	T1A_U08, T1A_U09

### Teaching contents:

#### Teaching contents as regards lectures

Lecture number	Teaching contents	Reference to teaching results for a module
1.	Introduction – the characteristics of operating systems.	W_01
2.	Hardware issues connected with operating systems.	W_01
3.	A general structure of an operating system.	W_01
4-5.	Processes and threads management.	W_02
6-7.	Processes and threads synchronisation, communication.	W_02
8.	Deadlocks.	W_02
9.	Internal memory management.	W_03
10. 11.	Virtual memory.	W_03
12.	Support memory.	W_03
13-14.	File system.	W_03
15.	Protection.	W_01

#### Teaching contents as regards laboratory classes

Laboratory class number	Teaching contents	Reference to teaching results for a module
1 – 4.	System calls (program interrupts).	U_01
5 - 6.	Input-output device handling.	U_02
7 - 8.	Memory management.	U_02
9 - 11.	File and catalogue management.	U_01
12 -15.	FAT file system.	U_02

### 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 test, laboratory class assignments
W_02	A written test, laboratory class assignments
W_03	A written test, laboratory class assignments
U_01	Laboratory class assignments, short written tests
U_02	Laboratory class assignments, short written test

### STUDENT'S INPUT

ECTS credit points		
	Type of student's activity	Student's workload
1	Participation in lectures	30
2	Participation in classes	
3	Participation in laboratories	30
4	Participation in tutorials (2-3 times per semester)	3
5	Participation in project classes	
6	Project tutorials	
7	Participation in an examination	
8		
9	<b>Number of hours requiring a lecturer's assistance</b>	<b>63</b> <i>(sum)</i>
10	<b>Number of ECTS credit points which are allocated for assisted work</b> <i>(1 ECTS credit point=25-30 hours)</i>	<b>3</b>
11	Unassisted study of lecture subjects	20
12	Unassisted preparation for classes	
13	Unassisted preparation for tests	10
14	Unassisted preparation for laboratories	20
15	Preparing reports	
16	Preparing for a final laboratory test	
17	Preparing a project or documentation	
18	Preparing for an examination	
19	Preparing questionnaires	
20	<b>Number of hours of a student's unassisted work</b>	<b>50</b> <i>(sum)</i>
21	<b>Number of ECTS credit points which a student receives for unassisted work</b> <i>(1 ECTS credit point=25-30 hours)</i>	<b>2</b>
22	<b>Total number of hours of a student's work</b>	<b>113</b>
23	<b>ECTS credit points per module</b> <i>1 ECTS credit point=25-30 hours</i>	<b>5</b>
24	<b>Work input connected with practical classes</b> <i>Total number of hours connected with practical classes</i>	<b>50</b>
25	<b>Number of ECTS credit points which a student receives for practical classes</b> <i>(1 ECTS credit point=25-30 hours)</i>	<b>2</b>