



## MODULE DESCRIPTION

Module code	
Module name	<b>Systemy operacyjne 2</b>
Module name in English	<b>Operating Systems 2</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>Arkadiusz Chrobot, 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>4<sup>th</sup> semester</b>
Subject realisation in the academic year	<b>Summer semester</b> <i>(winter / summer)</i>
Initial requirements	<b>Operating Systems 1, Programming in the C Language 1</b> <i>(module codes / module names)</i>
Examination	<b>Yes</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 functioning of the Linux operating system as well as creating utility software using API of this system.
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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 knows the operation of the Linux kernel.	l	K_W09	T1A_W03
W_02	A student knows the implementations of event, process, and memory handling mechanisms in the Linux system.	l	K_W09	T1A_W07
W_03	A student knows the issues concerning creating device drivers for the Linux system.	l	K_W09	T1A_W07
U_01	A student can create utility applications for the Linux/Unix environment.	l	K_U15, K_U12	T1A_U09, T1A_U16
U_02	A student can create concurrent programs in the Linux/Unix environment.	l	K_U15, K_U12	T1A_U09, T1A_U16

**Teaching contents:**

**Teaching contents as regards lectures**

Lecture number	Teaching contents	Reference to teaching results for a module
1.	Introduction – general characteristics of the Linux system.	W_01
2.	Process management in Linux.	W_02
3.	The mechanism of process sequencing in Linux.	W_02
4-5	The implementation of system calls in Linux.	W_02
6.	Interrupts handling in Linux.	W_02
7.	The mechanisms of bottom halves in Linux.	W_02
8-9.	Synchronisation mechanisms in Linux.	W_02
10.	Time measurement and time-related event handling in Linux.	W_02
11.	Memory management in Linux.	W_02
12.	Block and character devices handling in Linux.	W_03
13.	The layer of block operations in Linux.	W_03
14.	Managing address space of processes in Linux.	W_02
15.	Network handling in Linux.	W_03

**Teaching contents as regards laboratory classes**

Laboratory class number	Teaching contents	Reference to teaching results for a module
1.	Processes and signals.	U_01
2.	Pipes and named pipes.	U_02, U_01
3-4	Communicator queues.	U_02, U_01
5-6.	Semaphores.	U_02, U_01
7-8.	Shared memory.	U_02, U_01
9-10.	Threads.	U_02



11.	Terminals.	U_01
12.	Concurrent file access.	U_02, U_01
13-15.	BSD sockets	U_02, U_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	An examination
W_02	An examination
W_03	An examination
U_01	Laboratory class assignments, short written tests
U_02	Laboratory class assignments, short written tests

### 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	2
8		
9	<b>Number of hours requiring a lecturer's assistance</b>	<b>65</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	
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	10
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>115</b>



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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>