

COURSE DESCRIPTION

HIGHER VOCATIONAL STATE SCHOOL IN WLOCLAWEK

Course: OPERATING SYSTEMS

Field of study:	Computer science						Course code:
Unit supervising the course:	Instytut Nauk Społecznych i Technicznych, Zakład Informatyki						
Course orientation:	Practical						
Language of instruction:	English						
Course type:	General						
Course status:	Mandatory						
Level: I	Year: I			Semester: I			
The number of teaching hours on the full-time programme:							
Total	lecture	classes	laboratory	projects	tutorials	seminars	practicum
30	15	-	15	-	-	-	-
The number of teaching hours on the part-time programme:							
Total	lecture	classes	laboratory	projects	tutorials	seminars	practicum
-	-	-	-	-	-	-	-
Learning outcomes:	Knowledge: <ul style="list-style-type: none">has a general or specific knowledge in terms of operating systems						
	Skills: <ul style="list-style-type: none">can plan and carry out experiments, including computer simulations, interpret the results and draw conclusions						
	Social competence: <ul style="list-style-type: none">has a sense of responsibility for own work and the willingness to submit to the rules work in a team and to take responsibility for collaborative tasks						
Full description of the course:	Lecture: <ul style="list-style-type: none">definition of operating systemcomponents modules of the operating system (ring model),the services and features of the operating system,VMsevolution of computer systems: serial processing, simple batch systems, multi-purpose batch systems, time-sharing systems,modern operating systems: microkernel architecture, multi-threading, multi-tasking, symmetrical multi-tasking,construction of operating systems such as Windows and Linux,process managementscheduling algorithms: FCFS, SJB, MSJF, Rotary algorithms, algorithms with multilevel queues,						

	<ul style="list-style-type: none"> • issues of concurrent programming. Problems: producer-consumer, readers and writers, five philosophers, • management of memory. Virtual memory management, • file systems with single and two-levels structure, tree-based acyclic graphs for examples of systems C/PM, FAT and UNIX • management of input-output devices. Device types – character-based, block-based. Access to input-output devices, • basic safety issues of operating systems. <p>Laboratory: Installation and using of a virtual machine with VM Virtual Box, 2 Installing Linux: Debian distribution, 3 Elements of the system configuration, 4 Adding a new user, 5 Setting up and configuring the password, 6 The command line and shell, 7 The most important commands of the system, 8 Programming in the shell, 9 Installing the selected packages 10 Installation and configuration of the ftp server, 11 Installation and configuration of the mail server 12 Installation and configuration of the web server.</p>				
Methods:	<p>Lecture: The lecture and multimedia presentation.</p> <p>Laboratory: Laboratory exercises.</p>				
The student's workload/ ECTS credits:	Forms of activities	Average number of hours to complete activities			
		Full-time		Part-time	
		Lecture	Classes	Lecture	Classes
	Contact hours with academic instructor	25	25	-	-
	Hours without academic instructor	50	50	-	-
	1. Preparation for the classes, including reading assignments	30	20	-	-
	2. Processing the quantitative data /preparation for the exam, evaluation tests, etc.	20	15	-	-
	3. Preparation of a report, presentation, discussion	0	15	-	-
	Total	75	75	-	-
	Total number of ECTS for the conducted form of classes	3	3	-	-

	Total number of ECTS points for the entire course	6	-
The type and mode of obtaining the credit and marking criteria or requirements:	The type:	<ul style="list-style-type: none"> • Lecture – exam • Laboratory - credit rating. 	
	The mode:	<ul style="list-style-type: none"> • Lecture - written exam with open questions, • Laboratory – realization of lab exercises and presentation. 	
	Basic assessment criteria:	<ul style="list-style-type: none"> • Lecture - written exam with open questions included in the assessment of positive • Laboratory – realization of scheduled laboratory exercises for at least a satisfactory grade. 	
Literature:	Prescribed reading:	Robbins Kay A., Robbins S., “Unix Systems Programming”, Prentice Hall, 2003, Colin R., Cengage Learning, Cengage Learning, 2002, Tanenbaum A. S., Modern Operating Systems, Prentice Hall, 2008. Recommended reading: Jarczyk A., Linux Cookbook, O,Reilly, 2004, Love R., Linux System Programming: Talking Directly to the Kernel and C Library, O,Reilly, 2004.	
Course instructor: mgr inż. Bartosz Popławski			