



## Subject card

Subject name and code	Operation Systems (Unix, Linux), PG_00048122						
Field of study	Electronics and Telecommunications						
Date of commencement of studies	October 2021		Academic year of realisation of subject		2023/2024		
Education level	first-cycle studies		Subject group		Optional subject group Subject group related to scientific research in the field of study		
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	3		Language of instruction		Polish		
Semester of study	5		ECTS credits		2.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Computer Communications -> Faculty of Electronics, Telecommunications and Informatics						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Wojciech Gumiński				
	Teachers		dr inż. Krzysztof Cwalina				
			dr inż. Wojciech Gumiński				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	0.0	0.0	30
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	30		2.0		18.0	50
Subject objectives	The main objective of the course is to provide students with the operation, construction and configuration of Unix and Linux operating systems.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_U04] can apply knowledge of programming methods and techniques as well as select and apply appropriate programming methods and tools in computer software development or programming devices or controllers using microprocessors or programmable elements or systems specific to the field of study		Student uses the operating system commands. Student uses the pipeline processing. Student creates the shell scripts.		[SU1] Assessment of task fulfilment		
	[K6_W04] Knows and understands, to an advanced extent, the principles, methods and techniques of programming and the principles of computer software development or programming devices or controllers using microprocessors or programmable elements or systems specific to the field of study, and organisation of systems using computers or such devices		Student lists the tasks of the operating system. Student describes the construction of the file system. Student manages privileges in the system.		[SW1] Assessment of factual knowledge		

Subject contents	1. Operating system goals and definition. 2. Linux features. 3. File and file attributes. 4. File system. Directory tree structure. 5. Ext File system. I-node structure and its elements. 6. Hard and symbolic links. Creating, mounting and dynamic file system modification. 7. Standard input/output. Redirections. Pipeline processing. 8. Shell taska and properties. 9. Basic shell commands. 10. Text manipulating programs. 11. Process model. Process management. 12. Resources and system security. 13. Shell script writing guidelines. 14. Operating system installation, configuration and administration. 15. Final test.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Practical exercise	50.0%	60.0%
	Midterm colloquium	50.0%	40.0%
Recommended reading	Basic literature	Silberschatz A., Podstawy systemów operacyjnych, WNT 1999  Tanenbaum A. S., Modern Operating Systems, Prentice Hall 2008	
	Supplementary literature	Lecture notes	
	eResources addresses	Adresy na platformie eNauczanie: Systemy operacyjne Unix, Linux 2023 - Moodle ID: 28738 <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=28738">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=28738</a>	
	Example issues/ example questions/ tasks being completed		
Work placement	Not applicable		