



## Subject card

Subject name and code	Operation Systems (Unix, Linux), PG_00048122						
Field of study	Electronics and Telecommunications						
Date of commencement of studies	October 2024	Academic year of realisation of subject			2026/2027		
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. 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_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		
	[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		

Subject contents	<ol style="list-style-type: none"> <li>1. Operating system goals and definition.</li> <li>2. Linux features.</li> <li>3. File and file attributes.</li> <li>4. File system. Directory tree structure.</li> <li>5. Ext File system. I-node structure and its elements.</li> <li>6. Hard and symbolic links. Creating, mounting and dynamic file system modification.</li> <li>7. Standard input/output. Redirections. Pipeline processing.</li> <li>8. Shell tasks and properties.</li> <li>9. Basic shell commands.</li> <li>10. Text manipulating programs.</li> <li>11. Process model. Process management.</li> <li>12. Resources and system security.</li> <li>13. Shell script writing guidelines.</li> <li>14. Operating system installation, configuration and administration.</li> <li>15. Final test.</li> </ol>											
Prerequisites and co-requisites												
Assessment methods and criteria	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Subject passing criteria</th> <th style="width: 30%;">Passing threshold</th> <th style="width: 30%;">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td>Midterm colloquium</td> <td>50.0%</td> <td>40.0%</td> </tr> <tr> <td>Practical exercise</td> <td>50.0%</td> <td>60.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	Midterm colloquium	50.0%	40.0%	Practical exercise	50.0%	60.0%
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Recommended reading	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%;">Basic literature</td> <td colspan="2" data-bbox="802 618 1477 775">           Silberschatz A., Podstawy systemów operacyjnych, WNT 1999             Tanenbaum A. S., Modern Operating Systems, Prentice Hall 2008         </td> </tr> <tr> <td>Supplementary literature</td> <td colspan="2">Lecture notes</td> </tr> <tr> <td>eResources addresses</td> <td colspan="2">Adresy na platformie eNauczanie:</td> </tr> </table>			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:	
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Example issues/ example questions/ tasks being completed												
Work placement	Not applicable											