GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Concurrent programming in Linux - II, PG_00048388		
Field of study	Electronics and Telecommunications		
Date of commencement of studies	February 2025	Academic year of realisation of subject	2025/2026
Education level	second-cycle studies	Subject group	Optional subject group Specialty 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	2	Language of instruction	Polish
Semester of study	3	ECTS credits	2.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Marine Electronic Systems -> Faculty of Electronics, Telecommunications and Informatics		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Iwona Kochańska	
	Teachers	dr hab. inż. Iwona Kochańska	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	0.0	15.0	15.0	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 aim of the course is to provide knowledge and skills with concurrent programming methods and techniques in linux operating system.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_U03] can design, according to required specifications, and make a complex device, facility, system or carry out a process, specific to the field of study, using suitable methods, techniques, tools and materials, following engineering standards and norms, applying technologies specific to the field of study and experience gained in the professional engineering environment	The student knows and understands in advanced rule programming methods and techniques concurrent in the system Linux operating system	[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools
[K7_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, making assessment and critical analysis of the prepared software as well as a synthesis and creative interpretation of information presented with it	The student knows and understands in advanced method synchronization and scheduling processes and threads in concurrent programs working in systems built into the system Linux operating system.	[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools

<table>
<tr><td>Subject contents</td><td>Organizational matters: credit rules, consultations, literature
Basic concepts of concurrent programming
Classic problems of concurrent programming
Processes on the system on Linux
Signals and links
Programs in the kernel space
Time management - system clocks and counters
Parallel work mechanisms
semaphores
mutexes
Conditional variables
Monitors
Message queues
algorithms
Correctness of concurrent programs and its verification</td></tr>
<tr><td>Prerequisites and co-requisites</td><td></td></tr>
<tr><td>Assessment methods and criteria</td><td><table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>laboratory excercises</td><td>50.0%</td><td>50.0%</td></tr>
<tr><td>project</td><td>50.0%</td><td>50.0%</td></tr>
</table></td></tr>
<tr><td>Recommended reading</td><td><table>
<tr><td>Basic literature</td><td>R. Love, Linux System Programming: Talking Directly to the Kernel and C Library 2nd Edition, O'Reilly</td></tr>
<tr><td>Supplementary literature</td><td>J. Corbet, A. Rubini, G. Kroah-Hartman, „Linux Device Drivers, Third Edition”, O’Reilly</td></tr>
<tr><td>eResources addresses</td><td>Adresy na platformie eNauczanie:</td></tr>
</table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td></td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
</table>

Document generated electronically. Does not require a seal or signature.