

§ GDAŃSK UNIVERSITY § OF TECHNOLOGY

Subject card

Subject name and code	Real-time Operating Systems - seminar, PG_00048431								
Field of study	Automatic Control, Cybernetics and Robotics								
Date of commencement of studies	February 2023		Academic year of realisation of subject			2022/2023			
Education level	second-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	1		Language of instruction			Polish			
Semester of study	1		ECTS credits			1.0			
Learning profile	general academic profile		Assessment form			assessment			
Conducting unit	Department of Automatic Control ->		Faculty of Electronics, Telecommunicat				ations and Informatics		
Name and surname	Subject supervisor		dr inż. Marcin Pazio						
of lecturer (lecturers)	Teachers		dr inż. Marcin Pazio						
Lesson types and methods	Lesson type	Lecture	Tutorial	Laboratory	Projec	t	Seminar	SUM	
of instruction	Number of study hours	0.0	0.0	0.0	0.0	0 15.0		15	
	E-learning hours included: 0.0								
Learning activity and number of study hours	Learning activity	Participation in classes includ plan	didactic Participation in ed in study consultation hours		Self-st	udy	SUM		
	Number of study hours	mber of study 15 urs		2.0		8.0		25	
Subject objectives	The aim of the course is to acquaint students with architecture of a real-time operating systems and mechanisms available to users/programmers in a RTOS environment.								
Learning outcomes	Course out	Subject outcome			Method of verification				
	[K7_U08] while identifying and formulating engineering tasks specifications and solving these tasks, can:n- apply analytical, simulation and experimental methods,n- notice their systemic and non-technical aspects,n- make a preliminary economic assessment of suggested solutions and engineering workn		Student describes and knows how to apply in practice the techniques of management of the computer system resources.			[SK1] Assessment of group work skills [SU5] Assessment of ability to present the results of task [SU2] Assessment of ability to analyse information			
	[K7_U05] can plan and conduct experiments related to the field of study, including computer simulations and measurements; interpret obtained results and draw conclusions		The student describes the multithreaded programming techniques and know how to use them in practice. Student describes and knows how to put into practice the techniques of synchronization and task interaction.			[SU5] Assessment of ability to present the results of task [SU2] Assessment of ability to analyse information [SK4] Assessment of communication skills, including language correctness			
	K7_K02		Student describes and knows how to assess the suitability of various mechanisms offered by operating systems to solve practical problems.			[SK5] Assessment of ability to solve problems that arise in practice [SK4] Assessment of communication skills, including language correctness			
	[K7_U07] can apply advanced methods of process and function support, specific to the field of study		Student describes and knows how to put into practice the basic distributed computing technologies. Student describes and knows how to put into practice the basic techniques used in computer networks.			[SK1] Assessment of group work skills [SU5] Assessment of ability to present the results of task [SU2] Assessment of ability to analyse information			

Subject contents	1. Licenesing models of the RTOS software. Legal issues with examples.						
	 Threats araising from the system/software errors. Case studies. RT versions of Linux. The QNX System. Structure and applications. RT systems for microcontrollers. The ECOS System. Structure and applications. The RTEMS System. Structure and applications. The RTEMS System. Structure and applications. Android, IOS and Windows Phone. Technical aspects comparison. 						
Prerequisites and co-requisites	No requirements						
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade				
	Presentation at the seminar	50.0%	70.0%				
	Midterm colloquium	50.0%	30.0%				
Recommended reading	Basic literature	Jędrzej Ułasiewicz "Systemy czasu rzeczywistego QNX6 NEUTRINO", Wydawnictwo btc, 2007 William Stallings "Systemy operacyjne, struktura i zasady budowy", Wydawnictwo Naukowe PWN, 2006 Krzysztof Stencel "Systemy operacyjne", Wydawnictwo PJWSTK, 2004 Internet resources of a system vendors.					
	Supplementary literature	J. W. S. Liu, "Real – time systems.", Prentice Hall, 2000. R. Williams, "Real – time systems development.", BH/Elsevier 2006.					
	esources addresses Adresy na platformie eNauczanie:						
Example issues/ example questions/ tasks being completed	Presentations discussing subject-related issues.						
Work placement	Not applicable						