GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Dedicated Systems Development, PG_00047753		
Field of study	Informatics		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2027/2028
Education level	second-cycle studies	Subject group	Optional subject group Subject group related to scientific research in the field of study
Mode of study	Part-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	Polish
Semester of study	4	ECTS credits	4.0
Learning profile	general academic profile	Assessment form	exam
Conducting unit	Department of Computer Architecture -> Faculty of Electronics Telecommunications and Informatics -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Tomasz Dziubich	
	Teachers	dr inż. Tomasz Dziubich	

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	12.0	0.0	0.0	15.0	0.0	27

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	27	10.0	63.0	100

Subject objectives

Presentation of development methods for embedded and dedicatated systems

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	Student uses the patterns in appropriate stages of system design.	[SU1] Assessment of task fulfilment

Subject contents

Course content – lecture
Mobile and context-aware systems. Mobile devices. Characteristics of comunnication infastructure: Bluetooth, IrDA, GPRS, UMTS, 802.11, ZigBee. Sensors and actuators. Wireless smart sensor networks. Systems using RFID technology. Mobile and context-aware application development using .NET technology - Windows Mobile platform. Smart clients Communication and data sychronization (connection and connectionless modes) Cooperation wtih WebServices. Security, management and configuration problems Integration and service discovering. KVM virtual machine. HTTP connection and database access Global Positioning System (GPS). NMEA stadnard. GPS service integration within mobile applications Smart cards. Structure, classification and applications. Smart Card operating systems Cardlet and JavaCard OCF framework. Internet of Things, Intel Galileo as IoT platform

Prerequisites and co-requisites

No requirements

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Project	30.0%	50.0%
Oral exam	30.0%	50.0%

Recommended reading	Basic literature	M. Barr, A. Massa, Programming Embedded Systems: With C and GNU Development Tools, 2nd Edition, O"Reilly, 2008 T. Noergaard, Embedded Systems Architecture: A Comprehensive Guide for Engineers and Programmers (Embedded Technology), Elsevier, 2005 P. Nazimek, Inżynieria programowania kart inteligentnych, Politechnika Warszawska, Wydział Elektroniki i Technik Informacyjnych, wersja on-line
	Supplementary literature	No requirements
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Practical activites within the subject	Not applicable	

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