GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	GNSS Applications Programming, PG_00050032		
Field of study	Space and Satellite Technologies, Space and Satellite Technologies		
Date of commencement of studies	February 2023	Academic year of realisation of subject	2023/2024
Education level	second-cycle studies	Subject group	Obligatory subject group 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	2	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Geoinformatics -> Faculty of Electronics, Telecommunications and Informatics		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Przemysław Falkowski-Gilski	
	Teachers	dr inż. Przemysław Falkowski-Gilski	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	15.0	15.0	0.0	45

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	45	8.0	22.0	75

Subject objectives

The aim of the course is to acquaint students with GNSS satellite systems, as well as designing, implementing and testing related mobile applications.

Learning outcomes

Course outcome	Subject outcome	Method of verification
K7_U08	Student gains skills of using selected programming tools	[SU4] Assessment of ability to use methods and tools
K7_W06	Student is able to identify the potential of satellite systems, including currently available and future applications, with particular emphasis on mobile devices	[SW3] Assessment of knowledge contained in written work and projects
[K7_K03] Can analyse and implement assigned tasks while maintaining high technical standards. Is able to work and interact in a group, taking on different roles. Adheres to the principles of professional ethics and respects the diversity of views and cultures.	Student is able to design a mobile application, utilizing various data access techniques, depending on the test scenario	[SK5] Assessment of ability to solve problems that arise in practice
K7_W13	Student learns the building segments of satellite systems, their structure and principles of operation	[SW2] Assessment of knowledge contained in presentation
K7_U09	Student is able to properly collect, process and export data for further analysis purposes using external tools and computer programs	[SU2] Assessment of ability to analyse information
K7_W07	Student learns selected satellite systems and tools for processing data derived from them	[SW1] Assessment of factual knowledge

Subject contents	1. Development trends in GNSS satellite systems. 2. Overview of popular programming tools and mobile applications. 3. Implementation and testing of mobile applications.
Prerequisites and co-requisites	1. Principle knowledge of GNSS satellite systems. 2. Basic programming skills.
Assessment methods and criteria	

Subject passing criteria	Passing threshold	Percentage of the final grade
Lecture	50.0%	34.0%
Project	50.0%	33.0%
Laboratory	50.0%	33.0%

Recommended reading	Basic literature	Grewal M. S., Andrews A. P., Bartone C. G., Global Navigation Satellite Systems, Inertial Navigation, and Integration, Wiley, 2013. Murphy M., The Busy Coder's Guide to Advanced Android Development, CommonsWare, 2011.
	Supplementary literature	Darwin I. F., Android Cookbook: Problems and Solutions for Android Development, O'Riley Media, Inc, 2012.
	eResources addresses	Adresy na platformie eNauczanie: Programowanie aplikacji GNSS 2023/24 - Moodle ID: 32462 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=32462
Example issues/ example questions/ tasks being completed	Implementation and testing of a mobile application, utilizing GNSS satellite signals.	
Work placement	Not applicable	