



## Subject card

Subject name and code	GNSS Applications Programming, PG_00050032						
Field of study	Space and Satellite Technologies						
Date of commencement of studies	February 2024		Academic year of realisation of subject		2024/2025		
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_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_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_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_U08		Student gains skills of using selected programming tools		[SU4] Assessment of ability to use methods and tools		
	K7_W13		Student learns the building segments of satellite systems, their structure and principles of operation		[SW2] Assessment of knowledge contained in presentation		
	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
	Laboratory	50.0%	33.0%
	Project	50.0%	33.0%
	Lecture	50.0%	34.0%
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 2024/25 - Moodle ID: 40435 <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=40435">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=40435</a>	
Example issues/ example questions/ tasks being completed	Implementation and testing of a mobile application, utilizing GNSS satellite signals.		
Work placement	Not applicable		

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