



Subject card

Subject name and code	, PG_00069055						
Field of study	Pomiary satelitarne w geofizyce						
Date of commencement of studies	February 2025		Academic year of realisation of subject		2025/2026		
Education level	second-cycle studies		Subject group				
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 Geodesy -> Faculty of Civil and Environmental Engineering -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Jerzy Pyrchla				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	30.0	0.0	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		0.0		0.0	45
Subject objectives	To familiarize students with the comprehensive technology for precise static and kinematic satellite measurements. To provide knowledge in the design, implementation, and analysis of satellite measurements.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_W05] has a well-established knowledge of analytical methods and surveying techniques necessary for creating and solving a variety of problems in geodesy and cartography		Has knowledge of determining satellite positions from static and kinematic observations		[SW3] Ocena wiedzy zawartej w opracowaniu tekstowym i projektowym		
	[K7_U06] creates solutions to complex and unstructured problems taking into account the variability of the environment by synthesising information from different sources, using analytical and simulation methods		Knows the principles of carrying out satellite measurements and processing their results		[SU3] Ocena umiejętności wykorzystania wiedzy uzyskanej w ramach przedmiotu		
Subject contents	Course content – lecture Types and construction of satellite navigation systems and postprocessing data services. Designing satellite-based static measurements of geodetic networks. Software for planning satellite measurements. Data and data services for postprocessing. Postprocessing and alignment of satellite observations. Real-time kinematic measurements.						
	Course content – laboratory Configuration of the measurement set. Design of the satellite measurement. Execution of the satellite measurement according to the design. Postprocessing of satellite observations. Alignment of satellite observations and calculation of aligned coordinates.						
Prerequisites and co-requisites							
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	Project execution		40.0%		50.0%		
	Test		40.0%		50.0%		

Recommended reading	Basic literature	Kaplan E., Hegarty C.: Understanding GPS - Principles and Applications, 2nd Ed., Artech House, London 2006. Narkiewicz J.: GPS i inne satelitarne systemy nawigacyjne, WKŁ, Sulejówek 2007. Osada E., Geodezja rozdz. 6.3, Politechnika Wrocławska, Wrocław 2001. Seeber Günter, Satellite Geodesy, 2nd Ed., Walter de Gruyter-Berlin-New York 2003. Januszewski J.: Systemy satelitarne GPS, Galileo i inne. Wydawnictwo Naukowe PWN S.A., Warszawa 2006 Rozporządzenie Ministra Rozwoju z dnia 18 sierpnia 2020 r. w sprawie standardów technicznych wykonywania geodezyjnych pomiarów sytuacyjnych i wysokościowych oraz opracowywania i przekazywania wyników tych pomiarów do państwowego zasobu geodezyjnego i kartograficznego. Dz.U. 2020 poz. 1429 Rozporządzenie Rady Ministrów z dnia 15 października 2012 r. w sprawie państwowego systemu odniesień przestrzennych. (Dz. U. 2012 poz. 1247) Kleusberg A., Teunissen P.J.G: GPS for Geodesy. 2nd edition. Springer-Verlag, Berlin Heidelberg NewYork. 1998 Hofmann-Wallenhof B., Lichtenegger H., Collins J.: GPS Theory and Practice Fifth revised edition. Springer-Verlag Wien New York 2001 Seeber, Gunter. Satellite Geodesy, Berlin, New York: De Gruyter, 2003
	Supplementary literature	Scientific journals: Geodesy and Cartography; Marine Geodesy; Infinity. User manual. Leica Geosystems AG, Heerbrugg, Switzerland. 2024 Trimble Business Center - Processing and Adjusting GNSS Survey Control Networks. Trimble Inc., 2020
	eResources addresses	
Example issues/ example questions/ tasks being completed	How to configure a satellite measurement setup. Design and execute a satellite measurement. How to utilize data services necessary or useful for post-processing satellite observations.	
Practical activities within the subject	Not applicable	

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