



Subject card

Subject name and code	Geodesy I, PG_00044795						
Field of study	Geodesy and Cartography						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2025/2026		
Education level	first-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	1		ECTS credits		7.0		
Learning profile	general academic profile		Assessment form		exam		
Conducting unit	Department Of Geodesy -> Faculty Of Civil And Environmental Engineering -> Wydziały Politechniki Gdańskiej						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Daria Filipiak-Kowszyk				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	45.0	15.0	30.0	0.0	0.0	90
	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	90		12.0		73.0	175
Subject objectives	The purpose of the subject is to convey student the knowledge in the field of basic geodetic measurements and calculations.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_U11] is able to develop geodetic documentation and perform individually as well as in a group, field and field surveying surveys		Student performs geodetic measurements Student prepares basic geodetic documentation regarding levelling traverse, polygon traverse and survey of details.		[SU2] Assessment of ability to analyse information [SU4] Assessment of ability to use methods and tools [SU1] Assessment of task fulfilment		
	[K6_U13] is able to apply the principles of health and safety at work during the execution of geodetic works		The student is able to apply the principles of safe surveying and usage, transfer and storage of surveying instruments.		[SU1] Assessment of task fulfilment		
	[K6_W06] has a well-grounded knowledge and understands geodesy concepts including the main methods of obtaining data about space together with the surveying and computational methods, which from the one hand are compatible with the current legal status and from the other hand refer to measurements on the plane and cover the use of modern geodetic instruments, with taking into account the curvature of the Earth and the impact of gravity on the maner of measurements and results		The student possess the knowledge and uses the information concerning the performance of basic geodetic measurements and calculations.		[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects		

Subject contents	Lecture: 1. Direct levelling and trigonometric levelling 2. Angle and distance measurements 3. Topographic survey 4. Principles of coordinate calculus 5. Law of propagation of mean errors Classes: 1. Measurement units conversion 2. Levelling traverse calculus 3. Horizontal angle calculus 4. Principles of coordinate calculus 5. Law of propagation of mean errors Laboratories: 1. Levelling traverse measurements 2. Horizontal angle measurements 3. Polygon traverse measurements 4. Survey of details		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Test	60.0%	40.0%
	Laboratory report	100.0%	10.0%
	Exam	60.0%	50.0%
Recommended reading	Basic literature	1. The act of law: 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. (In Polish) 2. The act of law: Rozporządzenie Ministra Administracji i Cyfryzacji z dnia 14 lutego 2012r. w sprawie osnów geodezyjnych, grawimetrycznych i magnetycznych. (In Polish) 3. A. Jagielski, Geodesy I - theory and practice , Wyd. GEODPIS, Kraków, 2019 (In Polish) 4. A. Jagielski, Geodesy II , Wyd. GEODPIS, Kraków, 2020 (In Polish)	
	Supplementary literature	1. J. Ząbek, Geodesy I , Wyd. Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa, 2012 (In Polish) 2. W. Kosiński, Geodesy , Wyd. Naukowe PWN, Warszawa, 2021 (In Polish)	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	1. List the surfaces of reference used in surveying 2. Explain "control network" concept. 3. Explain "survey of details" concept. 4. Explain "direct levelling" concept.		
Work placement	Not applicable		

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