



## Subject card

Subject name and code	Geodesy and cartography, PG_00049234						
Field of study	Spatial Development						
Date of commencement of studies	October 2020		Academic year of realisation of subject		2021/2022		
Education level	first-cycle studies		Subject group		Obligatory subject group in the field of study Subject group related to scientific research in the field of study		
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	2		Language of instruction		Polish		
Semester of study	4		ECTS credits		2.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Geodesy -> Faculty of Civil and Environmental Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Anna Sobieraj-Żłobińska				
	Teachers		dr inż. Anna Sobieraj-Żłobińska				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	15.0	0.0	0.0	0.0	30
	E-learning hours included: 0.0						
	Adresy na platformie eNauczanie:						
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	30		3.0		17.0	50
Subject objectives	Familiarizing students with:- modern techniques and technologies in the field of acquiring, processing, collecting and sharing geodetic data for the design, implementation and operation of devices and structures- basic geodetic calculations.- basic measurement methods, geodetic instruments, cartographic systems, maps,- geodetic investment management- information related to the real estate cadastre.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_W03] has elementary knowledge in the field of mathematics and physics relating to issues related to space management, including the basic mathematical methods used in urban design, as well as analytical and design methods using information technology used in planning processes of settlement structures		The student knows the basic technologies and measurement methods used in geodesy, knows and understands the basic tasks and SI measures used in geodesy. The student has knowledge of geodetic and cartographic law with accompanying regulations.		[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects		
	[K6_U03] acquires, collects and classifies information in the field of spatial management from a variety of sources, including literature, databases, electronic sources, field observations, surveys and interviews; can perform urban and ruralistic inventory		The student is able to obtain information from various databases and cartographic materials appropriate for the implementation of the selected task. He can read the necessary information from maps and other geodetic documents. The student is able to perform basic geodetic calculations. The student is able to prepare an engineering project in the field of geodesy.		[SU2] Assessment of ability to analyse information [SU5] Assessment of ability to present the results of task		

Subject contents	Definition of geodesy and its scope; division and tasks. Measurements in the SI system used in geodesy and their conversion. Types of reference surfaces and their definitions. The importance of the reference surface in the reduction of geodetic measurements and calculations. Geodetic control and its classification. Height and situational measurements. basic geodetic calculus, methods of calculating the area of land and the volume of earth masses based on geodetic measures Types of errors and their sources. Contemporary geodetic technologies (GNSS, scanning, remote sensing). State system of spatial references. Geodetic coordinate systems. Cartographic projections. Development of thematic maps. Real estate cadastre. Surveying in the investment process.		
Prerequisites and co-requisites	Basic knowledge of mathematics and physics		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	project	60.0%	35.0%
	test	60.0%	45.0%
	report	60.0%	20.0%
Recommended reading	Basic literature	1. Kosiński Wiesław Geodezja Wydawnictwo Naukowe PWN Warszawa 2010  2. Jagielski Andrzej Przewodnik do ćwiczeń z Geodezji I Wydawnictwo P.W. Stabil Kraków 2004  3. Łyszkowicz Sabina Podstawy geodezji Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 2011  4. Przewłocki Stefan Geodezja dla kierunków niegeodezyjnych Wydawnictwo Naukowe PWN, Warszawa 2002	
	Supplementary literature	Wysocki Jerzy Geodezja z fotogrametrią i geomatyką dla inżynierii i ochrony środowiska oraz budownictwa Wydawnictwo SGGW Warszawa 2008  Januszewski Jacek Systemy satelitarne GPS Galileo i inne Wydawnictwo Naukowe PWN Warszawa 2010	
	eResources addresses	Podstawowe <a href="https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20200001429">https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20200001429</a> - Regulation of the Minister of Development of 18 August 2020 on technical standards for the performance of geodetic situational and height measurements as well as the development and transfer of the results of these measurements to the state geodetic and cartographic resource <a href="https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20210001385">https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20210001385</a> - Regulation of the Minister of Administration and Digitization of 23 July 2021 on the database of topographic objects and the basic map <a href="http://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20120001247">http://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20120001247</a> - Regulation of the Council of Ministers of October 15, 2012 on the state system of spatial references <a href="https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20200001429">https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20200001429</a> - legal act Geodetic and cartographic law <a href="http://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20120000352">http://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20120000352</a> - Regulation of the Minister of Administration and Digitization of February 14, 2012 on geodetic, gravimetric and magnetic networks Uzupełniające	
Example issues/ example questions/ tasks being completed	Basic geodetic calculations. Converting measures.		
	Map content interpretation		
Work placement	Not applicable		