GDAŃSK UNIVERSITY OF TECHNOLOGY

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 https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20200001429 - 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 https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20210001385 - Regulation of the Minister of Administration and Digitization of 23 July 2021 on the database of topographic objects and the basic map http://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20120001247 - Regulation of the Council of Ministers of October 15, 2012 on the state system of spatial references https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20200001429 - legal act Geodetic and cartographic law http://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20120000352 - 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