



## Subject card

Subject name and code	Geodesy II, PG_00044799						
Field of study	Geodesy and Cartography						
Date of commencement of studies	October 2021		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	1		Language of instruction		Polish		
Semester of study	2		ECTS credits		7.0		
Learning profile	general academic profile		Assessment form		exam		
Conducting unit	Department of Geodesy -> Faculty of Civil and Environmental Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. inż. Waldemar Kamiński				
	Teachers		prof. dr hab. inż. Waldemar Kamiński dr inż. Daria Filipiak-Kowszyk				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	30.0	15.0	0.0	0.0	75
	E-learning hours included: 0.0						
	Adresy na platformie eNauczanie: Geodezja II - Moodle ID: 19752 <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=19752">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=19752</a>						
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	75		10.0		90.0	175
Subject objectives	Teaching the students how to make geodetic measurements using the polar method and calculations of observation results.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_U06] can solve geodetic tasks and select measurement methods for typical engineering tasks including the curvature of the Earth and the impact of gravity	The student can perform a Helmert transformation as well as a transformation with two adjustment points. The student can calculate the mean error of the situational detail using the instruments with different of accuracy measurement.	[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 manner of measurements and results	The student knows the rules of elaborating the results of geodetic observations on various reference surfaces (ellipsoid, sphere, plane).	[SW1] Assessment of factual knowledge
	[K6_U14] can apply the necessary skills to conduct independent work in the field of topographic surveys along with the elaborating of results, geodetic investment service, surveying and inventory measurement, photogrammetry and remote sensing, and making the maps and elaborations for legal purposes including delimitation and subdivision of real estate	The student can perform a map using the C-Geo program.	[SU1] Assessment of task fulfilment
	[K6_U11] is able to develop geodetic documentation and perform individually as well as in a group, field and field surveying surveys	The student can perform measurements and calculations as well as prepare a technical report from obtained measurements using the polar method.	[SU1] Assessment of task fulfilment
Subject contents	Coordinates' transformation. Trigonometric leveling. The national (Polish) system of spatial references. Conducting the measurements using the polar method and electronic tachymeters. Digital map creation.		
Prerequisites and co-requisites	The knowledge obtained from the Geodesy I subject		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	exam	50.0%	60.0%
	exercises – performance of 5 tasks	100.0%	20.0%
	laboratories - creation of map using the polar method	100.0%	20.0%
Recommended reading	Basic literature	1. Beluch J. 2008, Praca zbiorowa pod redakcją Józefa Belucha. <b>Ćwiczenia z geodezji II</b> . Uczelniane Wydawnictwa Naukowo Dydaktyczne, Kraków.  2. A. Jagielski, <b>GEODEZJA II</b> . Kraków 2003.  3.E.Osada. <b>Geodezja</b> . Oficyna Wydawnicza Politechniki Wrocławskiej. Wrocław 2002.  4. E. Osada. <b>Geodezyjne pomiary szczegółowe</b> . UxLAN. Wrocław 2014	

	Supplementary literature	<p>1.A.Skórczyński. <b>Niwelacja trygonometryczna w pomiarach szczegółowych</b>. Wydawnictwa Politechniki Warszawskiej. Warszawa 1993.</p> <p>2.A.Skórczyński. <b>Lokalna triangulacja i trilateracja</b>. Wydawnictwa Politechniki Warszawskiej. Warszawa 1992.</p> <p>3.A.Piatek. <b>Geodezyjne dalmierze elektromagnetyczne i tachymetry elektroniczne. Cz. I i II</b>. PPWK Warszawa Wrocław 1992</p>
	eResources addresses	<p>Geodezja II - Moodle ID: 19752  <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=19752">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=19752</a></p>
Example issues/ example questions/ tasks being completed	<p>Present the coordinate transformation algorithm using the Helmert method.</p> <p>Describe the technology of setting up a detailed horizontal geodetic network.</p> <p>Present a system of spatial references in Poland.</p> <p>Describe the technology of map making using the polar method.</p> <p>Calculate the coordinates of the transfer point.</p>	
Work placement	Not applicable	