



Subject card

Subject name and code	SPECIALIZATION PRACTICE, PG_00044844						
Field of study	Geodesy and Cartography						
Date of commencement of studies	October 2022		Academic year of realisation of subject		2024/2025		
Education level	first-cycle studies		Subject group		Optional subject group		
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	3		Language of instruction		Polish		
Semester of study	6		ECTS credits		6.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department Of Geodesy -> Faculty Of Civil And Environmental Engineering -> Wydziały Politechniki GdańskieJ						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Jakub Szulwic				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	0.0	0.0	0.0	0
	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	0		5.0		160.0	165
Subject objectives	The objective of the specialised internship is to enable students to apply theoretical knowledge in professional settings by participating in geodetic surveys, cartographic data processing, and geoinformatics projects. Students may also be involved in the preparation, verification, and management of technical documentation within both private sector enterprises and public administration units, gaining practical experience in teamwork, client interaction, and regulatory procedures.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_K02] is ready to solve problems related to the profession of geodesy and cartography engineer and to assess risks and effects of the performed activity		Student gains insight into the operational specifics of a geodetic enterprise or a geodetic department within a public institution, actively participating in the execution of current surveying tasks. Through direct involvement in practical activities, the student develops the ability to identify and address engineering challenges, assess potential risks, and evaluate the professional and societal impact of geodetic and cartographic work.		[SK5] Assessment of ability to solve problems that arise in practice		
	[K6_U13] is able to apply the principles of health and safety at work during the execution of geodetic works		The student becomes familiar with occupational health and safety regulations applicable in geodetic enterprises, public administration units, and related institutions, with particular emphasis on the specific risks associated with geodetic work both in the field and in the office. The student develops the ability to apply health and safety principles in practice, including working near roads, on construction sites, and with specialised surveying equipment.		[SU1] Assessment of task fulfilment		

Subject contents	<p>As part of the specialised internship, students become acquainted with the professional realities of geodetic and cartographic work within enterprises, public authorities, or institutional settings. The aim is to apply academic knowledge in practice by completing a minimum of four thematic areas from the following:</p> <ol style="list-style-type: none"> 1. Geodetic surveying tasks, including topographic and elevation measurements, engineering structure surveys, establishment of control networks, and setting out in the field; 2. Legal and cadastral procedures, such as preparing land subdivision documentation, maintaining land and building registers, and verifying legal status of properties; 3. Engineering support and monitoring, involving construction site measurements, deformation monitoring, laser scanning, and photogrammetric processing; 4. Geospatial data processing, including GIS modelling, preparation of spatial data for public and proprietary systems, and development of geodetic or geoinformatics algorithms and applications; 5. Documentation and analysis, such as compiling technical reports, analysing source materials, and preparing tender documentation for geodetic or cartographic services. <p>In addition to technical activities, students develop key professional and social competences, including teamwork, communication, professional ethics, responsibility in decision-making, and the ability to assess the impact of their work critically and constructively.</p>		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	conversation	60.0%	70.0%
	report	60.0%	30.0%
Recommended reading	Basic literature		Current legislation from the website of the Central Office of Geodesy and Cartography: http://www.gugik.gov.pl
	Supplementary literature		no requirements
	eResources addresses		Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	<ul style="list-style-type: none"> • Planning and execution of topographic surveys for design or as-built purposes (urban areas, linear infrastructure, agricultural zones). • Setting out buildings or other construction elements in the field, in compliance with technical accuracy standards and legal regulations. • Establishment and measurement of control networks (horizontal and vertical) for construction or surveying purposes. • As-built surveys of completed infrastructure and preparation of corresponding technical reports. • Analysis of source materials and cadastral documentation in the process of land subdivision or consolidation. • Preparation of technical documentation for land and building cadastre (EGiB) in accordance with current legal requirements. • Development of cartographic outputs based on spatial datasets, including data harmonisation and transformation into GML formats. • Implementation of a project within the field of Geographic Information Systems (GIS), e.g. geocoding, thematic data modelling, or creation of interactive map applications. • Processing of photogrammetric data including orthorectification, aerotriangulation, vectorisation of features, also from non-metric imagery (e.g. UAV/drone-based). • Utilisation of LiDAR data to generate a Digital Terrain Model (DTM), Digital Surface Model (DSM), and their visualisation and analysis. • Monitoring of displacements and deformations of engineering structures using precision surveying techniques (total stations, GNSS, laser scanning). • Geodetic support of investment projects from documentation preparation to control measurements and final reports. • Development of algorithms for processing geodetic data (e.g. network adjustment, surface interpolation). • Involvement in the preparation and assessment of tender documentation for geodetic and cartographic services. • Application of health and safety regulations during fieldwork under diverse environmental and working conditions. 		
Work placement	Field exercises		