GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	SPECIAL GEODETIC MEASUREMENTS B, PG_00044857		
Field of study	Geodesy and Cartography		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2026/2027
Education level	first-cycle studies	Subject group	Optional subject group 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	3	Language of instruction	Polish
Semester of study	5	ECTS credits	6.0
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		
	Teachers		

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	15.0	15.0	0.0	0.0	60

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	60	8.0	82.0	150

Subject objectives

Teaching students about standard geodetic work, including road and rail objects.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W07] has a well-established knowledge and understands concepts in the field of engineering geodesy including the use of calculations and measurements methods carried out with the use of geodetic instruments and photogrammetric and remote sensing technologies related to geodetic support for investment, surveying and inventory measurements and photogrammetry with remote sensing	get the ability to use the statistical analysis in the geodetic works of engineering measurements	
[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	get the ability to plan and conduct geodetic engineering tasks	
[K6_W11] understands the concepts and has in-depth knowledge in the field of geodetic building monitoring, extended with basic knowledge in the field of statics and dynamics of engineering structures	get the ability to use the geometric levelling in the vertical displacements determination	

Subject contents	Accuracy analysis using local estimators of variance coefficients. Free adjustment of vertical and horizontal networks. Technologies for determining the vertical displacements taking into account rail and road structures. Standards for taking measurements in railway geodesy. Trigonometric leveling in determining the height of the measurement's network points.
Prerequisites and co-requisites	

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
practical classes – practical classes – getting the credit of obligatory tasks	100.0%	0.0%
end-term test - subjects presented during the lectures, practical and lab classes (60 minutes)	50.0%	100.0%
lab classes – practical classes – getting the credit of obligatory tasks	100.0%	0.0%

Recommended reading

Basic literature	Gocał J. Geodezja inżynieryjno – przemysłowa. Część II. Uczelniane Wydawnictwa Naukowo – Dydaktyczne AGH Kraków 2009. Gocał J. Geodezja inżynieryjno – przemysłowa. Część III. Uczelniane Wydawnictwa Naukowo – Dydaktyczne AGH Kraków 2010. Osada E. Geodezja. Oficyna Wydawnicza Politechniki Wrocławskiej. Wrocław 2001. Wiśniewski Z. Rachunek wyrównawczy w geodezji (z przykładami). Wydawnictwo Uniwersytetu Warmińsko - Mazurskiego w Olsztynie. Olsztyn 2005.
Supplementary literature	Gocał J. Geodezja inżynieryjno – przemysłowa. Część II. Uczelniane Wydawnictwa Naukowo – Dydaktyczne AGH Kraków 2009.
eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed	Present the principles of free adjustment of realisation networks. Present the rules for determining the local coefficients of variance. Describe the division of the railway geodetic network. Describe the methods of determining vertical displacements of road and rail structures. Present the technology of establishing a basic horizontal railway network.
Work placement	Not applicable

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