



Subject card

Subject name and code	SPECIAL GEODETIC MEASUREMENTS B, PG_00044857						
Field of study	Geodesy and Cartography						
Date of commencement of studies	October 2021	Academic year of realisation of subject			2023/2024		
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	prof. dr hab. inż. Waldemar Kamiński					
	Teachers	prof. dr hab. inż. Waldemar Kamiński mgr inż. Kamil Łapiński					
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_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					
	[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_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					

Subject contents	<p>Accuracy analysis using local estimators of variance coefficients.</p> <p>Free adjustment of vertical and horizontal networks.</p> <p>Technologies for determining the vertical displacements taking into account rail and road structures.</p> <p>Standards for taking measurements in railway geodesy.</p> <p>Trigonometric leveling in determining the height of the measurement's network points.</p>														
Prerequisites and co-requisites															
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="456 622 794 651">Subject passing criteria</th> <th data-bbox="799 622 1137 651">Passing threshold</th> <th data-bbox="1142 622 1481 651">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="456 658 794 734">lab classes – practical classes – getting the credit of obligatory tasks</td> <td data-bbox="799 658 1137 734">100.0%</td> <td data-bbox="1142 658 1481 734">0.0%</td> </tr> <tr> <td data-bbox="456 741 794 817">end-term test - subjects presented during the lectures, practical and lab classes (60 minutes)</td> <td data-bbox="799 741 1137 817">50.0%</td> <td data-bbox="1142 741 1481 817">100.0%</td> </tr> <tr> <td data-bbox="456 824 794 900">practical classes – practical classes – getting the credit of obligatory tasks</td> <td data-bbox="799 824 1137 900">100.0%</td> <td data-bbox="1142 824 1481 900">0.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	lab 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%	practical classes – practical classes – getting the credit of obligatory tasks	100.0%	0.0%
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Example issues/ example questions/ tasks being completed	<p>Present the principles of free adjustment of realisation networks.</p> <p>Present the rules for determining the local coefficients of variance.</p> <p>Describe the division of the railway geodetic network.</p> <p>Describe the methods of determining vertical displacements of road and rail structures.</p> <p>Present the technology of establishing a basic horizontal railway network.</p>														
Work placement	Not applicable														