



## Subject card

Subject name and code	Practical aspects of scientific research, PG_00045753						
Field of study	Geodesy and Cartography						
Date of commencement of studies	February 2024		Academic year of realisation of subject		2024/2025		
Education level	second-cycle studies		Subject group				
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		3.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Katedra Wytrzymałości Materiałów -> Faculty of Civil and Environmental Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Łukasz Pyrzowski				
	Teachers		dr inż. Łukasz Pyrzowski				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	15.0	0.0	0.0	0.0	45
	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	45		8.0		22.0	75
Subject objectives	<p>Gaining knowledge about research methods used in technical sciences and in an educational practice of the Faculty.</p> <p>Acquisition of skills in conducting scientific discussion.</p> <p>Acquisition of ability to search and combine information from various studies available in Polish and global resources.</p> <p>Acquisition of skills to conduct quantitative and qualitative research in the field of geodesy and cartography as well as civil engineering.</p>						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K7_U12] can use numerical methods to solve complex engineering tasks, performs numerical calculations, using MES or Matlab; use the selected software for programming the artificial neural networks	A student has skills to analyze results of numerical analysis: he develops and transforms quantitative and qualitative data using specialized software, interprets results of analysis in accordance with the principles of statistical inference, draws conclusions in a substantive legitimate manner.	[SU1] Assessment of task fulfilment
	[K7_W15] has the knowledge in soil testing and geotechnical monitoring with particular emphasis on measurement methods	A student has knowledge about methods of soil testing and geotechnical monitoring.	[SW1] Assessment of factual knowledge
	[K7_U14] can plan and interpret the results of geotechnical studies, including research capacity, settlement and displacement of foundations, the ground and resistance structural framework	A student has skills to plan and interpret geotechnical research.	[SU2] Assessment of ability to analyse information
	[K7_U13] knows how to correctly define basic calculation models used in the computer calculation	A student has ability to cooperate, communicate and conduct scientific discourse in the formulation of research problems, choosing the correct calculation model, discussing obtained results and formulating conclusions.	[SU1] Assessment of task fulfilment
Subject contents	Research methods and methodologies.  Use of data resource.  Data archives in Poland and in the world. Data Access Policy.  Consultation on the methodology of writing a scientific article.  Research diagrams.  Consultations regarding the use of data.  Consultations for performing numerical analysis.  Interpretation of analysis results.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
		60.0%	10.0%
		60.0%	50.0%
		80.0%	40.0%
Recommended reading	Basic literature	Creswell J.: Qualitative, Quantitative, and Mixed Methods Approaches, SAGE Publications, Inc; Fifth edition, 2018	
	Supplementary literature	Węglińska M.: Jak pisać pracę magisterską. Poradnik dla studentów., Wyd. Impuls Kraków 2016.	
	eResources addresses	Adresy na platformie eNauczanie: Praktyczne aspekty badań naukowych - ra 2024/2025 - Moodle ID: 41074 <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=41074">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=41074</a>	
Example issues/ example questions/ tasks being completed	Development of a design/research issue using numerical modeling techniques.		
Work placement	Not applicable		

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