

Subject card

Subject name and code	Methods in spatial analysis I B, PG_00150387						
Field of study	Land Management						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2025/2026		
Education level	Bachelor's 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		5.0		
Learning profile	academic		Assessment form				
Conducting unit	Faculty of Social Sciences -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Tomasz Michalski				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	40.0	0.0	0.0	70
	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	70		30.0		50.0	150
Subject objectives	To acquire knowledge of cartography and graphical presentation of phenomena in space with the use of specialized GIS software for analysis necessary for planning and spatial development; to acquire basic skills in operating GIS software and application to solving specific tasks in spatial management; to prepare to identify and solve cognitive problems related to the profession in accordance with the latest knowledge in spatial management.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[GPL3_U06] use specialist language in a debate with specialists in the field of spatial planning and management	K_U04 , K_U06 create different types of cartodiagrams and cartograms and apply other quantitative methods in the analysis of spatial phenomena using specialized software and equipment	[SU3] text preparation/written work
	[GPL3_U03] select appropriate sources of information and on this basis give opinions on the development of space for a specific area with particular regard to the principles of sustainable development and spatial order	K_U03 selects area-appropriate sources of spatial information	[SU3] text preparation/written work
	[GPL3_U04] make the correct selection of basic quantitative methods (including field research), use them in the analysis of spatial diversity of natural, social or economic phenomena and also make a correct interpretation of the results on the basis of the specificity of selected methods	K_U04 , K_U06 create different types of cartodiagrams and cartograms and apply other quantitative methods in the analysis of spatial phenomena using specialized software and equipment	[SU3] text preparation/written work
	[GPL3_W07] forms, methods and tools for shaping spatial development	K_W07 lists and characterizes the tools of planning and development spatial	[SW4] test/exam - oral or written [SW3] text preparation/written work
	[GPL3_W04] at an advanced level, the aims and conditions of using basic methods of quantitative analysis and interpretation of spatial processes and phenomena	K_W04 lists the basic quantitative methods and the determinants of their application in analyzing and interpreting spatial processes and phenomena	[SW4] test/exam - oral or written [SW3] text preparation/written work
	[GPL3_W08] principles of operating basic equipment, devices and software used to obtain and process geographical information and spatial planning	K_W08 lists and explains the principles of operating basic software office software and software for processing spatial information (GIS)	[SW4] test/exam - oral or written [SW3] text preparation/written work
Subject contents	A. Problems of the lecture: Definitions, tasks and divisions; The essence of cartographic communication; Modern understanding of the terms "map", "cartography", "topography" Elements of a map Types of maps Selection of the method of presentation. Qualitative methods of cartographic presentation of data Quantitative methods B. Problems of exercises: Introduction to the principles of IT usage - network security, data archiving, Tools to support teamwork - resource sharing, use of cloud services, Google Drive. Dropbox, Onedrive Basic office software (MS Office) Basics of using GIS programs. Basic operations on maps		
Prerequisites and co-requisites	knowledge, skills and competencies at the general high school level		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	exercises (tasks)	51.0%	60.0%
	lecture (test, essay)	51.0%	40.0%
Recommended reading	Basic literature Czarnecki K.: Geodezja Współczesna W Zarysie. Wydawnictwo Gall, Katowice 2010. Jagielski A.: Geodezja I. Wydawnictwo Geodpis, Kraków 2005. Jagielski A.: Geodezja II. Wydawnictwo Geodpis, Kraków 2005. Iwaniak A., Olszewski R., Gotlib D., 2008. GIS. Obszary zastosowań. Wydawnictwo Naukowe PWN, Warszawa. Kidner D., Higgs G., White S. (red.), 2003. Socio-Economic Applications of Geographic Information Science. Tay-lor&Francis Group, London-New York. Craig W.J., Harris T.M., Weiner D. (red.), 2002. Community Participation and Geographic Information Systems. Tay-lor&Francis Group, London-New York. Kunz M. (red.), 2007. Systemy Informacji Geograficznej w praktyce. Studium zastosowań. Wydawnictwo Uniwersytetu Mikołaja Kopernika, Toruń. Wang F., 2006. Quantitative Methods and Applications in GIS, Taylor&Francis Group, London-New York. Longley P., Clarke G. (red.), 1995. GIS for business and service planning. John Wiley&Sons, New-York.		

	Supplementary literature	Longley P. A. et al., Gis. Teoria I Praktyka. Wydawnictwo Naukowe PWN, 2008. Przewsłocki S.: Geomatyka. Wydawnictwo Naukowe PWN, 2008. Birkin M., Clarke G., Clarke M., Wilson A., 1996. Intelligent GIS. Location decisions and strategic planning. John Wiley&Sons, New-York.
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	What is a cartogram What LiDAR is all about	
Work placement	Not applicable	

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