



Subject card

Subject name and code	Cartography, PG_00044812						
Field of study	Geodesy and Cartography						
Date of commencement of studies	October 2020		Academic year of realisation of subject		2021/2022		
Education level	first-cycle studies		Subject group		Obligatory subject group in the field of study		
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	2		Language of instruction		Polish		
Semester of study	4		ECTS credits		8.0		
Learning profile	general academic profile		Assessment form		exam		
Conducting unit	Department of Geodesy -> Faculty of Civil and Environmental Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Paweł Wysocki				
	Teachers		dr inż. Paweł Wysocki				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	15.0	15.0	30.0	0.0	90
	E-learning hours included: 0.0						
	Adresy na platformie eNauczanie:						
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	90		12.0		98.0	200
Subject objectives	To familiarize students with the mathematical structure of the Earth's surface mappings used in the state coordinate systems, principles of the maps edition, cartographic generalization, qualitative and quantitative methods of cartographic representations on the example of the socio-economic issues.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_U07] can use reference systems and coordinate frames according to the character of cartographic studies, create a thematic map and apply in practice cartographic generalization		The student knows the principles of cartographic generalization, among others edits a map in the scale of 1: 25,000 on the basis of the source material prepared in the scale of 1: 10,000. The student is able to prepare a thematic map concerning a specific issue. Can calculate the emblem of a map based on the coordinates of a point on a given sheet.		[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools		
	[K6_W05] knows and understands the basic principles in the field of geomatics, mathematical and thematic cartography, including reference systems and coordinate frames associated with cartographic elaborations, and has knowledge about establishing and modernizing geodetic networks, taking into account the current legal status		The student knows the mathematical construction of state coordinate systems, division into sheets depending on the scale.		[SW1] Assessment of factual knowledge		

Subject contents	Spherical trigonometry. Rotational ellipsoid and sphere as reference surfaces. Ellipsoids: Krasowski, GRS-80, WGS-84. Radii of curvature Map definition. Concepts, functions and forms of the map. Map scale. Cartographic coordinate systems. Geographic grid. The concept of cartographic projection. Types and division of cartographic projections. Projection distortions. Gauss-Kruger projection. Azimuthal, conical and cylindrical projections. State spatial reference systems. Systems "1942", "1965", "GUGiK-80", "2000", "1992". UTM system. Topographic maps. Map editing rules. Cartographic signs system. Cartographic generalization. Cartographic methods of presentation: cartograms, cartodiagrams, range method, signature, isolines. Thematic cartography.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Tests	50.0%	100.0%
Recommended reading	Basic literature	<div>1. Saliszczew K., General cartography, PWN Scientific Publishing House, Warsaw 2003.</div> <div>2. Ratajski Lech, Methodology of socio-economic cartography, Warsaw 1989.</div> <div>3. Gajderowicz I., Cartographic Projections. The essentials , UWM Publishing House, Olsztyn, 2009.</div> <div>4. Różycki J., Mathematical cartography. State Publishing House, Warsaw 1978</div> <div>5. Paślawski J., (ed.) Introduction to cartography and topography, Publisher: NOWA ERA 2006.</div>	
	Supplementary literature	<div>1. REGULATION OF THE COUNCIL OF MINISTERS of October 15, 2012 on the state spatial reference system.</div> <div>2. Regulation of the Minister of Development, Labor and Technology of 27 July 2021 on the database of topographic objects and the database of general geographic objects, as well as standard cartographic coverage.</div>	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Division and classification of cartographic projections Cartographic projections used in Poland Calculation of the meridian arc length. Projections distortions. State spatial references system Coordinate systems 2000 and 1992 Topographic map symbol. Editing of the map on a scale of 1: 25,000 based on source material prepared on a scale of 1: 10,000. Thematic maps		
Work placement	Not applicable		