University of Gdańsk

Subject card

Subject name and code	Cartography and Topography - lecture, PG_00194266		
Field of study	Geography		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
Education level	Bachelor's 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	1	Language of instruction	Polish
Semester of study	1	ECTS credits	2.0
Learning profile	academic	Assessment form	exam
Conducting unit	Centrum Monitoringu i Ochrony Wód -> Faculty of Oceanography and Geography -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Włodzimierz Golus	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	0.0	0.0	0.0	0.0	30

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	30	1.0	19.0	50

Subject objectives

Mastering the program content in the field of cartography and topography with the aim of: (1) acquiring the skills to use appropriate cartographic methods to present elements of the geographical environment and socio-economic phenomena, (2) achieving comprehensive skills in reading maps and selecting and utilizing available geographical information sources, including electronic sources, necessary to compile a specified map, (3) acquiring the ability to select appropriate and accurate methods for presenting numerical and statistical data on maps.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[GEOGRL3-U06] can develop a selected geographical issue in the form of a scientific text in Polish, following a specific methodological convention and with correct documentation	Student has the ability to select research methods and tools used in the process of map creation, including creating a map based on field measurements.	[SU4] test/exam - oral or written
[GEOGRL3-U05] can use scientific language and express opinions and discuss topics related to geography in Polish and a foreign language	Student is able to search for and evaluate information in professional literature and online resources, particularly those concerning topography and cartography with elements of geodesy.	[SU4] test/exam - oral or written
[GEOGRL3-W08] principles of planning and developing individual entrepreneurship, using knowledge of geography	Student recognizes methods of data processing and understands principles of working with cartographic and topographic data on natural and anthropogenic environments, and is able to interpret and analyze the results obtained.	[SW4] test/exam - oral or written

Subject contents	Lecture Topics 1. Introductory Information: Cartography and its tasks. The essence of cartographic communication. Communication through maps in a historical context. Modern understanding of the concept of a map. Modern understanding of topography 2.Shape and Dimensions of the Earth: Reference surfaces and coordinate systems. Information from the theory of cartographic projections. Great circle (orthodrome) and rhumb line (loxodrome). Theory of distortions 3. National Systems and Spatial Reference Frameworks Used in Poland: ITRS, ETRS89, ETRF89, PL-ETRF89, PL-ETRF2000. PL-LAEA, PL-LCC, PL-UTM, PL-2000, PL-1992. PL-KRON86-NH, PL-EVRF2007-NH. Division into map sheets and assigning sheet codes in coordinate systems PL-UTM, PL-1992, PL-2000. Geodetic control networks. Classification of geographic maps 4. Topography and Its Tasks: Field surveys: measurements of distances, horizontal and vertical angles. Topographic instruments. Direction orientation, azimuths: geographic, magnetic, and topographic, and their interrelations. Topographic azimuth and quadrant selected topographic tasks involving coordinate calculations. Planimetric and altimetric measurements. Map content, classification of maps, analog maps, digital maps 5. Elements of a Geographic Map: Mathematical framework (scales and divisions, projection, geodetic control).Cartographic representation (cartographic means of expression, methods of depicting relief, point, linear, and area objects, cartographic methods of presenting qualitative and quantitative phenomena, cartographic generalization). Auxiliary symbols (map legend, measurement charts, information data). Supplementary data (cross-sections, diagrams, block diagrams, tables, and textual data on the map margins supplementing the main cartographic representation) 6. Topographic Maps: Cartographic projections of topographic maps. Elements of a topographic map. Use of topographic maps. 7. Thematic Maps: Classification and overview of thematic maps. Basic national map. Nautical Maps. 8. Cartographic Method of Research. 9. Map Editing and Reproduction: Geographic atlases 10. Cartography and GIS 11. Electronic Maps and Atlases
Prerequisites and co-requisites	

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Exam	51.0%	100.0%

Recommended reading	Basic literature
	- Pasławski J. (red.), 2010, Wprowadzenie do kartografii i topografii, Wydawnictwo Nowa Era Redakcja Kartograficzna, Wrocław; - Pelczar M., Szeliga J., Ziółkowski J.,1991, Zarys kartografii i topografii, Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk. - Ratajski L., 1989, Metodyka kartografii społeczno-gospodarczej, PPWK, Warszawa-Wrocław; - Saliszczew K.,1998, Kartografia ogólna, PWN, Warszawa.
	Supplementary literature
	- Churski Z., Galon R.,1996, Siatki Kartograficzne, Wydawnictwo UMK, Toruń. - Dzikiewicz B., 1971, Topografia, Wyd. Ministerstwa Obrony Narodowej. - Berlant A., Pasławski J. (red.), 2001, Metody kartograficzne a możliwości systemów komputerowych, Uniwersytet Warszawski, Warszawa

	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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