University of Gdańsk

Subject card

Subject name and code	Geodesy and Cartography - field exercises, PG_00201413						
Field of study	Water Management and Protection of Water Resources						
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	2		ECTS credits	1.0			
Learning profile	practical		Assessment form	credit			
Conducting unit	Geographic Information System (GIS) Laboratory -> 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	0.0	15.0	0.0	0.0	0.0	15
	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	15		1.0		9.0	25
Subject objectives	Acquiring theoretical and practical knowledge in the field of geodesy and cartography. During the classes, students learn the principles of conducting measurements necessary for creating site plans, topographic maps, and terrain profiles.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[GWOZWL3-W04] The student is familiar with advanced research techniques, methods and tools currently used in water management and the protection of water resources, in both the natural and social sciences, including advanced statistical and IT tools enabling the description, modelling and interpretation of data concerning phenomena and processes occurring in the aquatic environment, as well as tools for describing relationships within socio-ecological systems.	Student knows and understands the theories, methods, and techniques of data acquisition used in geodesy and cartography, which allow for describing and studying complex relationships in water management and water resource protection in both natural and social sciences. This knowledge enables the use of basic statistical and IT tools for processing and interpreting data related to phenomena and processes occurring in the aquatic environment, explaining the relationships within socio-ecological systems. Contents: C1-C3.	[SW4] test/exam - oral or written [SW5] implementation of a problem task
[GWOZWL3-U07] The student can use literature and other available sources of information, including information technology, multimedia, Internet, databases, and select and critically evaluate information.	Student is able to use literature and other available information sources, including information technology, multimedia, internet resources, and databases in the field of geodesy and cartography, and to select and critically evaluate information related to basic natural science issues concerning water management and water resource protection. Contents: C1-C3.	[SU2] presentation/project/paper/ report [SU4] test/exam - oral or written [SU6] demonstration of practical skills
[GWOZWL3-K05] The student has the ability take responsibility for the safety of their own work and that of others, dealing with emergencies, exercising caution in the laboratory and in the field, responsibility for entrusted equipment and apparatus.	Student is ready to fulfill social obligations and co-organize activities for the benefit of the community. Is responsible for entrusted equipment and teaching materials, as well as for the safety of own work and that of others. Contents: C1-C3.	[SK6] demonstration of practical skills [SK8] observation of student's independent or team work
[GWOZWL3-U02] The student can select and independently apply basic research techniques and tools, with adhering to established analytical procedures in the field of environmental research in water management, adequately to the considered research problem.	Student using basic measurement techniques and tools, is able to perform fundamental tasks in geodesy and cartometry to utilize their results in the analysis of the spatial differentiation of natural processes and phenomena related to water management and water resource protection. Contents: C1-C3.	[SU2] presentation/project/paper/ report [SU4] test/exam - oral or written [SU6] demonstration of practical skills
[GWOZWL3-U16] The student is able to demonstrate creativity in working independently and in team, taking on a variety of roles, including a leadership role.	Student is able to cooperate and work in a group, assuming various roles. Contents: C1-C3.	[SU2] presentation/project/paper/ report [SU4] test/exam - oral or written [SU6] demonstration of practical skills

Subject contents

1. Construction and use of geodetic instruments: theodolite (total station) and levelling.
2. Execution of a closed leveling loop, longitudinal profile.
3. Execution of a closed traverse using trigonometric leveling, hypsometric sketch, and/or execution of angular forward intersection to determine the coordinates of an inaccessible point.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
oral answer	51.0%	33.34%
credit work in groups	51.0%	66.66%

Recommended reading	Basic literature	Jagielski A., 2019/2014, Geodezja cz. I, Wyd. Geodpis, Kraków. Jagielski A., 2014, Geodezja cz. II, Wyd. Geodpis, Kraków. Pasławski J. (red.), 2010, Wprowadzenie do kartografii i topografii, Wydawnictwo Nowa Era Redakcja Kartograficzna, Wrocław.
	Supplementary literature	Rozporządzenie Rady Ministrów z dnia 15 października 2012 r. w sprawie Państwowego systemu odniesień przestrzennych (Dz. U. z 14.11.2012 r., Nr 0, poz. 1247). Ratajski L., 1989, Metodyka kartografii społeczno-gospodarczej, PPWK, Warszawa-Wrocław. Jagielski A., 2017, Rysunki geodezyjne z elementami topografii i kartografii, Wyd. Geodpis, Kraków. Bajkiewicz-Grabowska E., Markowski M., Lemańczyk K., 2016, Application of geoinformation techniques to determine zones of sediment resuspension induced by wind waves in lakes (using two lakes from Northern Poland as examples) , Limnological Review 1/2016.
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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