University of Gdańsk

Subject card

Subject name and code	Geodesy and Cartography - laboratory classes, PG_00201412						
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	0.0	15.0	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 geodesy and cartography involves students learning the principles of conducting measurements necessary for creating site plans, topographic maps, and terrain profiles. They gain skills in using various cartographic grids, reading maps, and depicting land use on maps of different scales using appropriate cartographic techniques and methods.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[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.	The student is prepared to fulfill social responsibilities and co-organize activities for the benefit of the community. Takes responsibility for entrusted equipment and teaching materials, as well as for the safety of their own work and that of others. Contents: B.1-B.5	[SK2] presentation/project/paper/ report [SK4] test/exam - oral or written [SK8] observation of student's independent or team work
	[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.	The student understands the theories, methods, and techniques of data acquisition used in geodesy and cartography, enabling the description and investigation of complex relationships in water management and water resource protection within both natural and social sciences. This knowledge allows for the utilization of basic statistical and computational tools in processing and interpreting data related to phenomena and processes in the aquatic environment, explaining relationships within socio-ecological systems. Contents: B.1-B.5	[SW4] test/exam - oral or written
	[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.	The student is able to utilize literature and other available sources of information, including information technology, multimedia, internet resources, and databases, in the field of geodesy and cartography. Can selectively and critically evaluate information related to basic natural science issues concerning water management and water resource protection. Contents: B.1-B.5	[SU2] presentation/project/paper/ report [SU4] test/exam - oral or written
	[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.	The student by applying basic measurement techniques and tools, is capable of performing fundamental tasks in geodesy and cartometry. This allows for the utilization of their results in analyzing the spatial differentiation of natural processes and phenomena related to water management and water resource protection. Contents: B.1-B.5	[SU2] presentation/project/paper/ report [SU4] test/exam - oral or written
	[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.	The student is able to cooperate and work effectively in a group, assuming various roles. Contents: B.1-B.5	[SU2] presentation/project/paper/ report [SU4] test/exam - oral or written

<table>
<tr><td>Subject contents</td><td>B.1. Basic tasks involving coordinate calculation: rectangular flat coordinate systems, polar flat coordinate systems, and relationships between them; calculating coordinates of points in closed traverse surveys; calculating coordinates of points using angular forward intersection.

B.2. Calculation of area using analytical and graphical methods.

B.3. Sectional division of maps:

a) Topographic maps (in PL-UTM and PL-1992 coordinate systems).

b) Land use maps (in PL-2000 coordinate system).

B.4. Measurements on topographic maps.

B.5. Cartographic presentation methods: cartogram and cartodiagram.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td></td></tr>
<tr><td>Assessment methods and criteria</td><td><table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>term papers</td><td>51.0%</td><td>66.66%</td></tr>
<tr><td>Test</td><td>51.0%</td><td>33.34%</td></tr>
</table></td></tr>
<tr><td>Recommended reading</td><td><table>
<tr><td>Basic literature</td><td>- 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.</td></tr>
<tr><td>Supplementary literature</td><td>- 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.</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
</table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td></td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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