GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	GEOINFORMATICS OF URBANISED AREAS, PG_00044856		
Field of study	Geodesy and Cartography		
Date of commencement of studies	October 2021	Academic year of realisation of subject	2023/2024
Education level	first-cycle studies	Subject group	Optional subject group
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	3	Language of instruction	Polish
Semester of study	5	ECTS credits	6.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Geodesy -> Faculty of Civil and Environmental Engineering		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Paweł Dąbrowski	
	Teachers	dr inż. Paweł Dąbrowski dr inż. Anna Sobieraj-Żłobińska	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	15.0	15.0	0.0	0.0	60

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	60	8.0	82.0	150

Subject objectives

The student learns the structure, functioning, and features of GiS systems and learns how to process GiS vector and raster data. The subject presents and uses geodetic data from the national geoportal. During the course, the student learns to create and use automated algorithms in the ArcGIS environment. The student learns methods of processing data from terrestrial and airborne laser scanning and performs geometric analyses of selected transport infrastructure objects.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U05] is able to develop a simple algorithm and prepare a simple program in object-oriented language taking into account the geodetic specifics and the specificity of spatial information systems	Can perform spatial data analysis on vector and raster data.	[SU5] Assessment of ability to present the results of task
[K6_W10] has elementary knowledge and understands the concepts of architecture and urban planning, construction, environmental engineering and transport necessary to carry out studies related to planning and investment service	The student knows the methods uses of measurement geodetic in communication.	[SW3] Assessment of knowledge contained in written work and projects

Subject contents

Geoinformatics and spatial data models. Spatial databases. Designing GIS systems. GIS spatial analyses. Reference systems used in maintaining national GIS databases. Harmonization of spatial data in the light of European legislation. Sources and use of open GIS data.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Colloquium	60.0%	40.0%
Report	60.0%	60.0%

Recommended reading	Basic literature	• Kraak, M. J., & Ormeling, F. (2020). Cartography: visualization of geospatial data. CRC Press. • Peterson, G. N. (2020). GIS cartography: a guide to effective map design. CRC Press. • Gotlib, D., Iwaniak, A., & Olszewski, R. (2007). GIS: obszary zastosowań. Wydawnictwo Naukowe PWN. • Magnuszewski, A. R., & Longley, P. A. (2008). GIS: teoria i praktyka. Wydawnictwo Naukowe PWN. • Medyńska-Gulij, B. (2011). Kartografia i geowizualizacja, Wydawnictwo Naukowe PWN. • Przewłocki, S. (2013). Geomatyka, Wydawnictwo Naukowe PWN. • Gaździcki, J. (2003). Internetowy leksykon geomatyczny, Polskie Towarzystwo Informacji Przestrzennej. • Bielecka, E. (2006). Systemy informacji geograficznej: teoria i zastosowania. Wydawnictwo Polsko-Japońskiej Wyższej Szkoły Technik Komputerowych.
	Supplementary literature	• ArcGIS helpdesk
	eResources addresses	Adresy na platformie eNauczanie: Geoinformatyka w komunikacji (GwK) 2023/2024 - Moodle ID: 33707 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=33707
Example issues/ example questions/ tasks being completed	• Polish and European legislation regarding spatial reference systems • Harmonization of spatial data • Registration and georeferencing of TLS and ALS point clouds	
Work placement	Not applicable	