



Subject card

Subject name and code	GEOINFORMATICS OF URBANISED AREAS, PG_00044849						
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. Anna Sobieraj-Żłobińska					
	Teachers	dr inż. Anna Sobieraj-Żłobińska dr inż. Paweł Dąbrowski					
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	9.0		81.0		150
Subject objectives	The student learns the basics of Spatial Information Systems - GIS. Then he or she broadens the knowledge about data acquisition, collection, processing and modelling. He or she gets acquainted with 3D visualization in GIS, analysis and processing of ALS data. In the final stage of the course the student performs the analysis of visibility and shading in geoinformatics software.						
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 data analysis spatial data vector and raster			[SU4] Assessment of ability to use methods and tools [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 urbanized areas.			[SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation [SW3] Assessment of knowledge contained in written work and projects		
Subject contents	Geoinformatics - introduction, concepts, tasks. Aquisition of spatial data. DTM - definition, tasks, applications. 3D GIS. Surface analyses. Visibility analyses. Analysis of surface changes.						
Prerequisites and co-requisites							
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	Test		60.0%		40.0%		
	Raport/project		60.0%		60.0%		

Recommended reading	Basic literature	<ul style="list-style-type: none"> - Stateczny A. (ed.), Comparative navigation methods. Gdańsk Scientific Society, Gdańsk, 2004. - Bielecka E., Geographic information systems. Theory and applications. PJWSTK Publishing House, Warsaw 2006. - Burrough P., McDonnell A., Principles of Geographical Information Systems. Oxford University Press, New York 2004. - Davis D., GIS for everyone. MICON Publishing House, Warsaw 2004. - Eckes K., Models and analyses in spatial information systems. Wydawnictwa AGH, Cracow 2006. - El-Sheimy N., Valeo C., Habib A., Digital Terrain Modelling. Acquisition, manipulation, and application. Artech House, Boston 2005. - Gaździcki J., Geomatical Lexicon. Polish Society of Spatial Information, Warsaw 2003. - Kraak M., Ormeling F., Cartography, spatial data visualisation, PWN, 1998. - Kwiecień J., Geographic Information Systems. Podstawy. Wydawnictwo ATR in Bydgoszcz, Bydgoszcz 2004. - Li Z., Zhu Q., Gold Ch., Digital Terrain Modeling. Principles and methodology. CRC PRESS, Boca Raton 2005. - Litwin L., Myrda G., Geographic Information Systems. Management of spatial data in GIS, SIP, SIT, LIS. HELION Publishing House, 2005. - Longley P., Goodchild M., Maguire D., Hind. D., GIS theory and practice. PWN Warsaw 2006. - Magnuszewski A., GIS in physical geography. PWN, 1999.
	Supplementary literature	<ul style="list-style-type: none"> - Geoinformation software manuals - Articles in scientific journals such as Remote Sensing, Sensors, Journal of Geo-Information, Journal of Geodesy, Geoinformatics, IEEE Transactions on Geoscience and Remote Sensing,
	eResources addresses	Adresy na platformie eNauczenie:
Example issues/ example questions/ tasks being completed	<ul style="list-style-type: none"> • DTM - definition, tasks, applications • Visibility and shading analysis 	
Work placement	Not applicable	