GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Geographic Information Systems, PG_00042394		
Field of study	Green Technologies		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2024/2025
Education level	second-cycle 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	3.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Geoinformatics -> Faculty of Electronics, Telecommunications and Informatics		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Marcin Kulawiak	
	Teachers		

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	15.0	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	5.0	40.0	75

Subject objectives

Teaching students the basic knowledge and practical skills in the field of Geographic Information Systems (GIS), which includes both the use of GIS software as well as acquisition and processing of geographic data.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_W05] has an broader knowledge of the advanced concepts and problems of quality management, application of the principles of work organization and integrated management and the knowledge necessary to understand the social, economic, legal and other non-technical considerations engineering activities, knows the basic principles of health and safety in force in environmental	The student knows and can use spatial data models.	[SW1] Assessment of factual knowledge
[K7_K02] is ready to work together as a team, taking in the different roles, can properly identify priorities for implementation specified by you or other tasks, is able to think and act in a creative and enterprising, has the ability to negotiate, is aware of its own limitations and know when to ask the experts	The student knows the possibilities of GIS in the field of visualization of spatial data. Student also knows the basics of image processing and visualization in the form of raster layers in GIS.	[SK2] Assessment of progress of work
[K7_U01] able to obtain information from literature, databases and other sources, can integrate the information obtained, to make their interpretation and critical evaluation, as well as draw conclusions and formulate and fully justify opinions, able to prepare a study in Polish and short scientific report in a foreign language on the results of their own research	The student can use available tools and methods to realize the given task.	[SU1] Assessment of task fulfilment

<table>
<tr><td>Subject contents</td><td>1. Definition, structure and basic concepts related to GIS.
2. Examples of GIS applications.
3. Data models in GIS.
4. Vector geographic data model.
5. Raster data model in GIS.
6. Acquiring and storing three-dimensional information in GIS.
7. Basic algorithms of vector data processing.
8. Basic algorithms for processing raster data.
9. Open standards for geographic data transfer.</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>Laboratory</td><td>60.0%</td><td>50.0%</td></tr>
<tr><td>Lecture exam</td><td>60.0%</td><td>50.0%</td></tr>
</table></td></tr>
<tr><td>Recommended reading</td><td><table>
<tr><td>Basic literature</td><td>1. Longley P., Goodchild M., Maguire D., Rhind D. "Geographic Information Systems and Science", John Wiley & Sons Ltd., West Sussex 2005</td></tr>
<tr><td>Supplementary literature</td><td>1. Enhancing a City via GIS: Issues and Challenges, Kulawiak M. (Ed). 2015. Croatian Information Technology Society, GIS Forum ISBN 978-953-6129-53-9</td></tr>
<tr><td>eResources addresses</td><td>Adresy na platformie eNauczanie:</td></tr>
</table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>Creation of vector data in GIS.

Processing of vector data in GIS.

Processing of raster data in GIS.</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
</table>