GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Computational Techniques in Space Systems, PG_00053596		
Field of study	Techniki obliczeniowe w systemach kosmicznych		
Date of commencement of studies	February 2025	Academic year of realisation of subject	2025/2026
Education level	second-cycle studies	Subject group	
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 -> Wydziały Politechniki Gdańskiej		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Przemysław Falkowski-Gilski	
	Teachers	dr inż. Przemysław Falkowski-Gilski	

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	15.0	15.0	0.0	45

E-learning hours included: 0.0

eNauczanie source addresses:

Moodle ID: 45882 Techniki obliczeniowe w systemach kosmicznych 2025/26
https://enauczanie.pg.edu.pl/moodle/course/view.php?id=45882

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	45	0.0	0.0	45

Subject objectives

The aim of this course is to acquaint students with geoinformatic calculations in space systems and their solving using specialized programs.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_U04] can apply knowledge of programming methods and techniques as well as select and apply appropriate programming methods and tools in computer software development or programming devices or controllers using microprocessors or programmable elements or systems specific to the field of study, making assessment and critical analysis of the prepared software as well as a synthesis and creative interpretation of information presented with it	Student is able to develop an interactive digital model of an object using various data access techniques.	[SU3] Ocena umiejętności wykorzystania wiedzy uzyskanej w ramach przedmiotu
[K7_W04] knows and understands, to an increased extent, the principles, methods and techniques of programming and the principles of computer software development or programming devices or controllers using microprocessors or other elements or programmable devices specific to the field of study, and organization of work of systems using computers or such devices	Student is able to correctly select tools and methods for solving tasks.	[SW1] Ocena wiedzy faktograficznej

<table>
<tr><td>Subject contents</td><td>Course content – lecture
1. Development trends in information technology and telecommunications.

2. Review of popular geoinformatics tools.

3. Operation of Google SketchUp.

4. Exporting and importing files.

5. Creating animations.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>There are no requirements.</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>Project</td><td>50.0%</td><td>33.0%</td></tr>
<tr><td>Laboratory</td><td>50.0%</td><td>33.0%</td></tr>
<tr><td>Lecture</td><td>50.0%</td><td>34.0%</td></tr>
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<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>1. SketchUp Manual (Online)

2. Google, Geo Education and Geo Tools (Online)

3. Haining R., Spatial Data Analysis: Theory and Practice, Cambridge University Press, 2003.</td></tr>
<tr><td>Supplementary literature</td><td>1. Fischer M. M., Wang J., Spatial Data Analysis: Models, Methods and Techniques, Springer, 2011.

2. Sellers G., Wright R. S., Haemel N., OpenGL Superbible: Comprehensive Tutorial and Reference, Addison-Wesley Professional, 2015.

3. Akenine-Moller T., Haines E., Hoffman N., Pesce A., Iwanicki M., Hillaire S., Real-Time Rendering, CRC Press, 2018.</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
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<tr><td>Example issues/ example questions/ tasks being completed</td><td>Design and development of a three-dimensional model of a space station. Exporting, processing and interaction with the model in an external application.</td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
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