GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Computational Techniques in Space Systems, PG_00053596
Field of study	Space and Satellite Technologies

Date of commencement of studies	February 2024	Academic year of realisation of subject	2024/2025
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

Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Przemysław Falkowski-Gilski
	Teachers	dr inż. Przemysław Falkowski-Gilski

Lesson types and methods of instruction	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						

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_U08	Student gains the ability of using selected programming tools.	[SU4] Assessment of ability to use methods and tools
	[K7_K03] Can analyse and implement assigned tasks while maintaining high technical standards. Is able to work and interact in a group, taking on different roles. Adheres to the principles of professional ethics and respects the diversity of views and cultures.	Student is able to design an application that uses various techniques of data access, depending on the selected scenario.	[SK5] Assessment of ability to solve problems that arise in practice
	K7_W07	Student acquaints with selected systems and tools for processing data from them.	[SW1] Assessment of factual knowledge
	K7_W12	Student learns the segments of space systems, their construction and principles of operation.	[SW2] Assessment of knowledge contained in presentation

Subject contents	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.
Prerequisites and co-requisites	There are no requirements.

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Lecture	50.0%	34.0%
	Laboratory	50.0%	33.0%
	Project	50.0%	33.0%

Recommended reading	Basic literature	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.
	Supplementary literature	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.
	eResources addresses	Adresy na platformie eNauczanie: Techniki obliczeniowe w systemach kosmicznych 2024/25 - Moodle ID: 40431 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=40431

Example issues/ example questions/ tasks being completed	Design and development of a three-dimensional model of a space station. Exporting, processing and interaction with the model in an external application.
Work placement	Not applicable