University of Silesia in Katowice

1.	Field of study	**Geography**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2022/2023 (winter term), 2023/2024 (winter term), 2024/2025 (winter term)
4.	Level of qualifications/degree	second-cycle studies
5.	Degree profile	general academic
6.	Mode of study	full-time

Module: DEM and geomorphometry application in environmental analysis and spatial planning

Module code: W2-GF-S2-238

1. Number of the ECTS credits: 3

2. Learning outcomes of the module

code	description	learning outcomes of the programme	level of competence (scale 1-5)
W2-GF-S2-238_1	The student has extended knowledge in the field of earth sciences, basic terminology relating to geomorphometry and digital elevation models; knows the current literature of the subject. The student has knowledge of the applied empirical data in earth sciences and related sciences, including in the field of statistics and GIS; knows the principles of data acquisition and tools for their description.	KGG2_W01 KGG2_W02	4 4
W2-GF-S2-238_2	Student uses advanced statistical techniques and GIS software to model, predict and solve specific problems in the field of earth sciences. Student is able to obtain and interpret spatial data and formulate appropriate conclusions based on them. Student can describe, analyze and interpret the causes and course of the natural processes and phenomena based on data from various sources and theoretical knowledge.	KGG2_U01 KGG2_U02	4 3

3. Module description

Description	The course is to enable students to acquire basic knowledge about digital elevation models (creation, analysis and visualization) and geomorphometry as a field of knowledge dealing with the quantification of phenomena and objects in the earth's environment. The course provides information on the applicability of quantitative spatial data in Geographical Information Systems, earth sciences and spatial planning. It gives the ability to use various computer applications used in working with digital elevation models (DEMs).
Prerequisites	Basic skills of the GIS software (i.e. ArcGIS, QGIS)

4. Assessment of the learning outcomes of the module

code	type	description	learning outcomes of the module
W2-GF-S2-238_w_1	Written test	Written test (different kind of questions: multiple-choice, completion, written answers). Verification of knowledge acquired by the student during lectures and individual reading of the recommended literature.	W2-GF-S2-238_1, W2-GF-S2-238_2
W2-GF-S2-238_w_2	Continuous evaluation of the student's work	Verification of knowledge and skills on the base student's exercises	W2-GF-S2-238_1, W2-GF-S2-238_2

5. Forms of teaching

code	form of teaching			required hours of student's own work		assessment of the learning outcomes of the module
	type	description (including teaching methods)	number of hours	description	number of hours	
W2-GF-S2-238_fs_1	lecture	Introductory lectures on geomorphometry and digital elevation models, their types, methods of creation, verification methods, accuracy and applications to environmental analyzes and the creation of three-dimensional images based on them. Use of audiovisual aids	10	Work with the recommended literature of the subject, including independent acquisition of knowledge about the indicated issues.	20	W2-GF-S2-238_w_1
W2-GF-S2-238_fs_2	laboratory classes	Project implementation - searching, acquiring and processing of relevant data sources (including electronic ones), preparation of presentations.	30	Preparation of the data, preparation for the laboratory by familiarizing with the indicated issues, working out results from the laboratory	20	W2-GF-S2-238_w_2