1.	Field of study	Applied Geology
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	General information about the module
Module name	**Applied petrology 1**
Module code	W2-GS-S1-041
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	Moduł Petrologia stosowana 1 ma umożliwić studentowi poznanie podstawowych typów skał wraz z podstawowymi metodami badawczymi oraz zrozumienia zależności procesów petrologicznych od procesów tektonicznych w skali globalnej, regionalnej i lokalnej. Omówione zostaną minerały główne i ich rola w poszczególnych typach skał, procesy prowadzące do powstania 3 podstawowych typów skał, budujących skorupę ziemską oraz płaszcz nadastenosferowy. Zostanie położony nacisk na umiejętności aplikacyjne oznaczania i klasyfikacji skał, co w dalszej konsekwencji pozwoli studentowi na praktyczne rozwiązywanie problemów geologicznych, w tym diagnozowania procesów geologicznych, krytyczną ocenę możliwości zastosowania zaawansowanych metod badawczych, w zależności od podstawowych charakterystyk badanego materiału skalnego.
List of modules that must be completed before starting this module (if necessary)	[W2-GS-S1-408] Chemistry in Earth sciences [W2-GS-S1-405] Dynamic Earth 1 [W2-GS-S1-406] Dynamic Earth 2 [W2-GS-S1-024] Mineralogy with the basics of crystallography [W2-GS-S1-410] Tectonics and Structural Geology

8. Learning outcomes of the module

Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
W2-GS-S1-041_1	zna i rozumie w zaawansowanym stopniu teorie, fakty, obiekty zjawiska oraz dotyczące ich metody ze wszystkich działów geologii wyjaśniające złożone zależności pomiędzy nimi.	1GS_K2 1GS_W1 1GS_W2 1GS_W6	2 2 2 1
W2-GS-S1-041_2	potrafi wykorzystywać posiadaną wiedzę do formułowania i rozwiązywania, prostych i typowych, problemów geologicznych oraz wykonywać zadania inżyniera geologa w warunkach nie w pełni przewidywalnych przez: - właściwy dobór źródeł i informacji z nich pochodzących, także z zastosowaniem dostępnych baz danych, dokonywanie oceny, krytycznej analizy i syntezy tych informacji; - dobór oraz stosowanie właściwych metod i narzędzi stosowanych w naukach o Ziemi i środowisku, w tym zaawansowanych technik informacyjno-komunikacyjnych.	1GS_K2 1GS_U1 1GS_U3 1GS_U5 1GS_W1 1GS_W2	2 2 1 1 2 2

		1GS_W3 1GS_W4	1 1
W2-GS-S1-041_3	potrafi wypowiedzieć się w sposób komunikatywny i zrozumiały, w mowie i na piśmie na temat poznanych zagadnień geologicznych, również w wymaganych prawem formach: notatnika terenowego, raportu, projektu, dokumentacji i innych	1GS_K2 1GS_U3 1GS_W1 1GS_W2	2 2 1 2
W2-GS-S1-041_4	potrafi śledzić osiągnięcia nauk o Ziemi i środowisku, w tym najnowsze postępy technologiczne oraz konfrontować je z innymi dziedzinami nauki. Zdaje sobie sprawę z konieczności ciągłego pogłębiania wiedzy.	1GS_K2 1GS_U11 1GS_U6 1GS_W1 1GS_W2 1GS_W6	2 2 3 2 2 2
W2-GS-S1-041_5	jest gotów do odpowiedzialnego pełnienia ról zawodowych, w tym: - przestrzegania zasad etyki zawodowej i wymagania tego od innych; - dbałości o dorobek i tradycje zawodu inżyniera geologa.	1GS_U2 1GS_W2	2 2
W2-GS-S1-041_6	potrafi wykonać eksperymenty geologiczne oraz prace projektowe typowe dla inżyniera geologa, także z zastosowaniem techniki informatycznej, zinterpretować wyniki i poprawnie wnioskować.	1GS_K1 1GS_U11 1GS_U2 1GS_U5	2 1 1 1

9. Methods of conducting classes

Code	Category	Name (description)
a03	Lecture methods / expository methods	Description *a description of objects, phenomena, processes or people; it involves specifying the structure and characteristic features of the object, phenomenon, or process being described; it is usually accompanied by a demonstration of the described object or by its models, drawings, tables, charts, etc.; a description may take the form of an explanation, classification, justification or comparison*
a05	Lecture methods / expository methods	Explanation/clarification *explication involving the derivation of a predetermined theorem from other, already known ones, in the number of steps specified by the person teaching the course*
b01	Problem-solving methods	Problem-based lecture *an analysis of a selected scientific or practical problem accompanied by its assessment and an attempt to provide a solution to the issues presented in the lecture as well as the indication of the consequences of the proposed solution*
c06	Demonstration methods	Demonstration-imitation *a presentation of a model way of performing specific activities accompanied by a commentary; it aims at triggering imitation activities in an individual or in a group of participants observing the activities of the person teaching the course until the right habit is formed through regular exercise; the demonstration-imitation method is combined with a physical practice of activities/behaviours*
c07	Demonstration methods	Screen presentation

		a presentation of synthetic image content using computer graphics, e.g., a series of slides or other multimedia forms, usually accompanied by a commentary; typical components of a screen presentation include text organized into bulleted points, charts, images and animations, sometimes sound effects or music; a multimedia illustration of course content presented in the form of a projected image
d03	Programmed learning methods	Working with another teaching tool *e.g. using websites in any way or according to the rules set by the teacher; or making use of other subject-specific tools*
e01	Practical methods	Laboratory exercise / experiment *[also conducted as fieldwork] a method of practical application of knowledge; implemented in three stages: the recognition of a problem induced by the task content, the formulation of the problem and the attempt to solve it accompanied by the assessment of the effects; the goal is to acquire skills, abilities and habits, and to consolidate the acquired knowledge so that it becomes operational; the laboratory method assumes greater independence of learners than carrying out an experiment*

10. Forms of teaching

Code	Name	Number of hours	Assessment of the learning outcomes of the module	Learning outcomes of the module	Methods of conducting classes
W2-GS-S1-041_l_1	laboratory classes	24	course work	W2-GS-S1-041_2, W2-GS-S1-041_3, W2-GS-S1-041_4, W2-GS-S1-041_5, W2-GS-S1-041_6	c06, d03, e01
W2-GS-S1-041_w_1	lecture	12	exam	W2-GS-S1-041_1, W2-GS-S1-041_2, W2-GS-S1-041_4, W2-GS-S1-041_5, W2-GS-S1-041_6	a03, a05, b01, c07

11. The student's work, apart from participation in classes, includes in particular:

Code	Category	Name (description)	Is it part of the BUNA?
a02	Preparation for classes	Literature reading / analysis of source materials *reading the literature indicated in the syllabus; reviewing, organizing, analyzing and selecting source materials to be used in class*	No
a03	Preparation for classes	Developing practical skills *activities involving the repetition, refinement and consolidation of practical skills, including those developed during previous classes or new skills necessary for the implementation of subsequent elements of the curriculum (as preparation for class participation)*	No
a04	Preparation for classes	Consulting materials complementary to those indicated in the syllabus *agreeing on materials complementary to those indicated in the syllabus, supporting the implementation of tasks resulting from or necessary for class participation*	No
b01	Consulting the curriculum and the organization of classes	Getting acquainted with the syllabus content *reading through the syllabus and getting acquainted with its content*	No
c02	Preparation for verification of learning outcomes	Studying the literature used in and the materials produced in class *exploring the studied content, inquiring, considering, assimilating, interpreting it, or organizing knowledge obtained from the literature, documentation, instructions, scenarios, etc., used in class as well as from the notes or other materials/artifacts made in class*	No
e01	Activities complementary to the classes	Undertaking, on one’s own initiative and individually, activities aimed at expanding the scope	No

		or depth of the teaching content, also beyond the walls of the University *a set of activities undertaken independently and on the student's own initiative, aimed at expanding the depth and scope of knowledge and skills, their revision and repetition, retention or verification, also activities carried outside the university, e.g., in a culture promoting or educational institution, a laboratory, in the open air, etc.; also self-education*	

Information on the details of the module implementation in a given academic year can be found in the syllabus available in the USOS system: https://usosweb.us.edu.pl.