1.	**Field of study**	**Applied Geology**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2024/2025 (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	**Mineralogy with the basics of crystallography**
Module code	W2-GS-S1-024
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	Celem modułu Mineralogia z podstawami krystalografii jest krótkie wprowadzenie podstaw krystalografii – nauki o kryształach będącej bazą dla studiowania mineralogii, petrografii, geochemii, nauki o złożach. Studenci poznają uniwersalne pojęcia substancji krystalicznej i symetrii oraz rozpoznają symetrię kryształów zarówno zewnętrzną, jak i wewnętrzną. Ponadto poznają prawa krystalografii geometrycznej i znajdą dla nich zastosowanie w mineralogii. Celem kursu jest nauczenie studentów praktycznych nawyków pracy z kryształami, opanowanie techniki prawidłowego opisania ich formy zewnętrznej oraz budowy wewnętrznej niezbędnej dla prawidłowej interpretacji wyników samodzielnej pracy naukowej i rozumienia literatury specjalistycznej.
List of modules that must be completed before starting this module (if necessary)	not applicable

8. Learning outcomes of the module

Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
W2-GS-S1-024_1	zna podstawowe pojęcia i prawa krystalografii geometrycznej, umie rozpoznawać operacje symetrii w kryształach	1GS_U10 1GS_U6 1GS_W6	1 1 1
W2-GS-S1-024_2	potrafi rozpoznać 32 klasy symetrii, wie jak przekształcić symbole symetrii Grotha w symbole międzynarodowe	1GS_U10 1GS_U6 1GS_W6	1 2 1
W2-GS-S1-024_3	rozpoznaje postaci proste w układach krystalograficznych oraz potrafi ustalić symbole ścian postaci prostych	1GS_U10 1GS_U6 1GS_W6	1 2 1
W2-GS-S1-024_4	opanował rysowanie projekcji cyklograficznych i stereograficznych	1GS_U10 1GS_U6 1GS_W6	2 2 1

W2-GS-S1-024_5	posługuje się programami komputerowymi CrystalShaper, Vesta	1GS_U1 1GS_U10 1GS_U6	1 1 1

9. Methods of conducting classes

Code	Category	Name (description)
a01	Lecture methods / expository methods	Formal lecture/ course-related lecture *a systematic course of study involving a synthetic presentation of an academic discipline; its implementation assumes a passive reception of the information provided*
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*
b02	Problem-solving methods	Lecture-discussion *transmission of content involving interaction with the lecture audience; discussion of lecture-related issues is one of its elements or constitutes its follow-up*
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*
d01	Programmed learning methods	Working with a computer *e.g., Webquest; implementation of educational tasks using electronic and digital devices, computer programs and Internet applications; the academic teacher acts as a consultant; students' work is carried out step by step according to the plan laid own by the person teaching the course and following his instructions, and proceeds towards producing the indicated results within the set deadline*
d02	Programmed learning methods	Working with a programmed textbook *working with a textbook containing instructional material covering part of or the entire curriculum of the module as well as a formula for studying the content; includes working with a subject textbook, an atlas, a catalogue, a problem book, etc.*
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*
f01	Methods of self-learning	Self-education *a method which involves independent acquisition of knowledge, skills and social competences, extending their scope and quality; complementary to the learning process taking place in class; taking on the task of developing and adjusting qualifications on one's own; self-study*

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-S1-024_l_1	laboratory classes	18	course work	W2-GS-S1-024_1, W2-GS-S1-024_2, W2-GS-S1-024_3, W2-GS-S1-024_4, W2-GS-S1-024_5	d01, d02, d03, f01
W2-GS-S1-024_w_1	lecture	18	course work	W2-GS-S1-024_1, W2-GS-S1-024_2, W2-GS-S1-024_3	a01, a03, b02, c07

11.	The student's work, apart from participation in classes, includes in particular:		
Code	**Category**	**Name (description)**	**Is it part of the BUNA?**
a01	Preparation for classes	Search for materials and review activities necessary for class participation *reviewing literature, documentation, tools and materials as well as the specifics of the syllabus and the range of activities indicated in it as required for full participation in classes*	No
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
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
c03	Preparation for verification of learning outcomes	Implementation of an individual or group assignment necessary for course/phase/ examination completion *a set of activities aimed at performing an assigned task, to be executed out of class, as an obligatory phase/element of the verification of the learning outcomes assigned to the course*	No
d02	Consulting the results of the verification of learning outcomes	Development of a corrective action plan as well as supplementary/corrective tasks *reviewing and selecting tasks and activities enabling the elimination of errors indicated by the academic teacher, their verification or correction resulting in completing the task with at least the minimum passing grade*	No
e01	Activities complementary to the classes	Undertaking, on one’s own initiative and individually, activities aimed at expanding the scope 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*	No

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.