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

7.	**General information about the module**
Module name	**Analytical methods in geology**
Module code	W2-GE-S1-008
Number of the ECTS credits	1
Language of instruction	Polish
Purpose and description of the content of education	Celem zajęć jest zapoznanie studenta z procesami zachodzącymi w przyrodzie, które mają bezpośredni wpływ na jakość życia i zdrowie człowieka. Przeprowadzając proste i barwne eksperymenty studenci zwiększą wrażliwość na sygnały płynące z geośrodowiska, sprawdzą i zweryfikują wyniki badań. W sposób bezpieczny będą posługiwać się sprzętem laboratoryjnym i odczynnikami chemicznymi. Zakres treści nauczania stworzy wiele możliwości pracy metodą eksperymentu i innymi metodami aktywizującymi m.in. poprzez grę planszową jako formę edukacji wspomagającą umiejętność analitycznego myślenia i procesu decyzyjnego. Samodzielna obserwacja studenta jest podstawą do analizowania prostych zjawisk fizykochemicznych zachodzących w próbkach wód naturalnych i odciekach, pozwoli rozszerzyć wiedzę nt. surowców kopalnych i odnawialnych wykorzystywanych do uzyskiwania energii, w tym analizy (in situ) emisji węgla elementarnego do atmosfery.
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-GE-S1-008_1	posiada podstawową wiedzę o środowisku, zna uwarunkowania środowiskowe związane z gospodarczą działalnością człowieka, potrafi określić zagrożenia z nimi związane oraz korzystać z podstawowych technik stosowanych do analiz próbek środowiskowych	1GE_W2 1GE_W5	2 1
W2-GE-S1-008_2	potrafi przeprowadzić podstawowe eksperymenty różnych próbek właściwe dla wybranego kierunków studiów i odpowiednio zinterpretować wyniki analiz; potrafi współpracować w grupie, myśleć i działać w sposób kreatywny	1GE_U2 1GE_U7	2 2
W2-GE-S1-008_3	jest świadomy zagrożeń związanych z zanieczyszczeniem środowiska pochodzenia antropogenicznego i wie jak je zminimalizowć	1GE_K3	2

9. Methods of conducting classes

Code	Category	Name (description)
b03	Problem-solving methods	Activating method – educational games *learning content in the guise of a rule- and/or principle-based game; conducted in a deliberately arranged situation based on the description of relevant facts and processes; learners compete with one another within the framework of rules laid down*

		by the academic teacher; varieties include simulation games – involving a simulation of real situations; decision games – based on the decision-making process and the recognition of the consequences of the decisions made (e.g., a decision tree); psychological games – increasing the emotional-volitional component of the participants' attitudes
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*
e09	Practical methods	Plein air session *implementation of a creative task in an open-air area, e.g. outside the studio*

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-GE-S1-008_L_1	laboratory classes	12	course work	W2-GE-S1-008_1, W2-GE-S1-008_2, W2-GE-S1-008_3	b03, e01, e09

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

Code	Category	Name (description)	Is it part of the BUNA?
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

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.

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

7.	**General information about the module**
Module name	**Applied Geology 1**
Module code	W2-GE-S1-412
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	W ramach modułu "Geologia inżynierska 1" student zdobędzie wiedzę na temat gruntów oraz ich właściwości, co jest kluczowe z praktycznego punktu widzenia w zawodzie geologa. Student pozna skład mineralny i ziarnowy gruntów, zrozumie rolę wody i gazów w gruntach oraz nauczy się oceniać ich właściwości fizyczne i mechaniczne. Będzie potrafił analizować genezę gruntów oraz procesy prowadzące do ich erozji i akumulacji. Dzięki wiedzy na temat specyfiki gruntów budowlanych, student zyska umiejętność geologiczno-inżynierskiej oceny terenów pod zabudowę. Student pozna metody klasyfikacji gruntów, oznaczania ich właściwości oraz wyznaczania parametrów takich jak gęstość, skład granulometryczny, granice konsystencji i ściśliwość. Zdobyte umiejętności są niezbędne z punktu widzenia prowadzenia przyszłych badań terenowych i laboratoryjnych w zawodzie geologa.
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-GE-S1-412_1	zna podstawowe pojęcia z zakresu geologii inżynierskiej oraz posiada wiedzę na temat klasyfikacji i właściwości gruntów	1GE_U8 1GE_W1 1GE_W2 1GE_W5	1 3 2 3
W2-GE-S1-412_2	ma wiedzę z zakresu podstawowych zjawisk i procesów zachodzących w środowisku gruntowo-wodnym	1GE_K3 1GE_W1 1GE_W2 1GE_W3 1GE_W5	2 3 2 2 3
W2-GE-S1-412_3	zna i potrafi zastosować metody służące oznaczaniu podstawowych właściwości geologiczno-inżynierskich gruntów	1GE_K6 1GE_U1	2 2

		1GE_U2 1GE_U3 1GE_U6 1GE_W2	3 2 1 2
W2-GE-S1-412_4	potrafi planować i organizować badania laboratoryjne z zakresu geologii inżynierskiej	1GE_K6 1GE_U1 1GE_U2 1GE_U6 1GE_W2	1 2 2 1 2
W2-GE-S1-412_5	potrafi zinterpretować wyniki badań laboratoryjnych z zakresu geologii inżynierskiej i oznaczeń podstawowych parametrów i właściwości gruntów	1GE_K1 1GE_K2 1GE_K3 1GE_K6 1GE_U1 1GE_U2 1GE_U3 1GE_W2	1 1 2 2 3 2 1 2
W2-GE-S1-412_6	zna zakres zastosowania oznaczeń i badań geologiczno-inżynierskich w praktyce	1GE_K2 1GE_U3 1GE_U8 1GE_W2 1GE_W3 1GE_W4	1 1 1 2 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*
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*
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-GE-S1-412_L_1	laboratory classes	12	course work	W2-GE-S1-412_3, W2-GE-S1-412_4, W2-GE-S1-412_5, W2-GE-S1-412_6	c06, c07, e01
W2-GE-S1-412_W_1	lecture	12	course work	W2-GE-S1-412_1, W2-GE-S1-412_2	a01, a03, a05, b01

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
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

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.

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

7.	**General information about the module**
Module name	**basics of geodesy**
Module code	W2-GE-S1-401
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	Zajęcia z przedmiotu Geodezja i kartografia są prowadzone w formie wykładów i ćwiczeń. W ramach wykładów studenci poznają podział geodezji i podstawy prawne wykonywania prac geodezyjnych (tyczenia i pomiary sytuacyjno – wysokościowe) wraz ze stosowanymi w Polsce układami współrzędnych poziomych i wysokościowych. W drugiej części wykładów scharakteryzowane zostają konkretne techniki geodezyjne (tyczenia linii prostych i kątów, bezpośredni pomiar odległości taśmą, niwelacja geometryczna i trygonometryczna, tachimetria, GPS RTK i statyczne), wraz z opisem budowy i posługiwania się aparaturą. Po przedstawieniu zagadnień z instrumentoznawstwa na wykładach przedstawione zostaną teoretyczne podstawy obliczeń geodezyjnych. W ramach ćwiczeń studenci uczą się posługiwania akcesoriami i aparaturą geodezyjną. Wykonują podstawowe pomiary i obliczenia geodezyjne. Opracowują i wizualizują zebrane dane w formie typowych operatów geodezyjnych.
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-GE-S1-401_1	zna budowę i potrafi obsłużyć urządzenia do wykonywania pomiarów geodezyjnych.	1GE_W2	2
W2-GE-S1-401_2	zna i rozumie zasady prawne regulujące pracę w geodezji oraz polskie układy współrzędnych.	1GE_W1	2
W2-GE-S1-401_3	potrafi planować pomiary pod kątem właściwego wykorzystania dostępnych technik pomiarowych do rozwiązywania zadań badawczych.	1GE_U2	2
W2-GE-S1-401_4	potrafi wykorzystać metody obliczeniowe do projektowania lub analizy pomiarów geodezyjnych.	1GE_U3	3
W2-GE-S1-401_5	dokonuje krytycznej analizy technik badawczych.	1GE_U4	2
W2-GE-S1-401_6	wykonując prace geodezyjne współpracuje z innymi osobami przestrzegając etyki zawodowej	1GE_K6	1

		1GE_U7	2

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*
b07	Problem-solving methods	Activating methods: a case study *a comprehensive description of a phenomenon connected with the selected discipline; reflecting the reality, presenting the 'what', 'where' and 'how' of the phenomenon, i.e., all of its key aspects to be discussed in class; used as a reproduction, presentation, discussion or diagnosis of factors that shape the phenomenon or interact with it; an in-depth qualitative analysis and evaluation of a selected phenomenon*
c08	Demonstration methods	Value-based methods – affective methods *methods of participating in exhibited moral, social, aesthetic and scientific values; activities evoking genuine emotional reactions to works/objects/actions; a method which activates an emotional response to the presented content, intensifies attention, depth of experience and a reflection on values*
e04	Practical methods	Project scheduling *proceeding according to the steps proposed within a specific methodology for the completion of a task; e.g., identifying project objectives, determining the result, identifying strengths, limitations, opportunities and threats (SWOT), establishing a schedule of activities, assessing resources, establishing an implementation plan; the initial diagnosis; the reassessment of assumptions; the process of preparing the practical implementation of a project*
e05	Practical methods	Internship *including professional and individual training; gaining skills and experience in real-life conditions, e.g., in the environment, institution or workplace the student is preparing for by following a specific study programme; training in real working conditions*

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-GE-S1-401_L_1	laboratory classes	24	course work	W2-GE-S1-401_1, W2-GE-S1-401_3, W2-GE-S1-401_4, W2-GE-S1-401_5, W2-GE-S1-401_6	b07, c08, e04, e05
W2-GE-S1-401_W_1	lecture	12	course work	W2-GE-S1-401_1, W2-GE-S1-401_2, W2-GE-S1-401_3, W2-GE-S1-401_4, W2-GE-S1-401_5	a01, a03

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
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
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

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.

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

7.	General information about the module
Module name	**Basics of geophysics**
Module code	W2-GE-S1-028
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	W ramach modułu omawiane są hipotezy wyjaśniające powstanie Wszechświata, Układu Słonecznego oraz Ziemi, a w dalszej kolejności naturalne pola fizyczne Ziemi (pole siły ciężkości, pole magnetyczne, pole termiczne) i zjawiska sejsmiczne. Omawiane są możliwości i sposoby wykorzystania pomiarów wyżej wymienionych jako źródła unikatowych informacji przyczyniających się do poznania i zrozumienia procesów zachodzących na i we wnętrzu Ziemi zarówno w czasie geologicznym, współczesnym jak i w przyszłości. Sygnalizowane są aspekty stosowane rozpoznania geofizycznego związane z poszukiwaniami surowcowymi, aspektami środowiskowymi oraz pracami inżynieryjno-budowlanymi. W części laboratoryjnej wykonywane są proste prace obliczeniowe wynikające z tematyki wykładów. Moduł ma za zadanie powiązanie dynamiki Ziemi z procesami fizycznymi, które są mechanizmami napędowymi obserwowanych efektów oraz wyjaśnienie źródeł powszechnie akceptowanych informacji o budowie głębokiego wnętrza Ziemi oraz globalnych procesach geologicznych. Oprócz aspektów poznawczych sygnalizowane są aspekty stosowane badań geofizycznych.
List of modules that must be completed before starting this module (if necessary)	[W2-GE-S1-405] zna instrumenty ochrony środowiska przed oddziaływaniem prac geologicznych i górniczych [W2-GE-S1-406] Dynamic Earth 2

8. Learning outcomes of the module

Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
W2-GE-S1-028_1	znajomość podstaw fizycznych zjawisk wykorzystywanych w geofizycznych pracach badawczych i poszukiwawczych	1GE_W1	1
W2-GE-S1-028_2	znajomość podstaw metodyki badań oraz typowych zastosowań metod: grawimetrycznej, magnetometrycznej, geotermicznej i sejsmologicznej	1GE_W3	1
W2-GE-S1-028_3	umiejętność wykonywania prostych obliczeń związanych z przetwarzaniem danych pomiarowych przy pomocy podstawowego oprogramowania i świadomość ograniczeń takich obliczeń	1GE_U2	2
W2-GE-S1-028_4	umiejętność prezentowania wyników badań oraz redagowania tekstów podsumowujących badania	1GE_U2	1
W2-GE-S1-028_5	umiejętność formułowania pytań, służących pogłębieniu zrozumienia tematu lub uzupełnieniu brakujących elementów rozumowania i umiejętność szukania wiarygodnych źródeł poszukiwanych informacji	1GE_K2	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*
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*
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.*

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-GE-S1-028_L_1	laboratory classes	24	course work	W2-GE-S1-028_3, W2-GE-S1-028_4	c06, d01, d02
W2-GE-S1-028_W_1	lecture	24	course work	W2-GE-S1-028_1, W2-GE-S1-028_2, W2-GE-S1-028_5	a01

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
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
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*	No

		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.

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

7.	**General information about the module**
Module name	**Basics of topography and cartography**
Module code	W2-GE-S1-402
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	Celem modułu „Podstawy topografii i kartografii” jest zapoznanie studentów z podstawowymi zagadnieniami, problemami i trendami współczesnej kartografii i topografii. Moduł obejmuje wiedzę związaną z klasyfikacją map, odwzorowaniami kartograficznymi, kartograficznymi środkami wyrazu. Zapoznaje studentów z bazami danych referencyjnych oraz z bazami danych tematycznych. Przekazuje wiedzę o pozyskiwaniu i wykorzystaniu danych przestrzennych. Po osiągnięciu efektów kształcenia modułu student ma umiejętności posługiwania się mapą (np. interpretacja rzeźby terenu). Rozumie pojęcie trzeciego wymiaru w kartografii. Zna możliwości podstawowych narzędzi do wizualizacji przestrzennej danych geologicznych i geograficznych - zna możliwości programów komputerowych typu QGIS i potrafi samodzielnie wygenerować np. profil morfologiczny i poziomice. Zna i potrafi wykorzystywać bazy danych (działania w kartografii cyfrowej, takie jak pozyskiwanie danych przestrzennych, numeryczny model terenu).
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-GE-S1-402_1	zna podstawowe pojęcia z zakresu topografii i kartografii i pogłębia wiedzę w tym zakresie	1GE_U8 1GE_W1 1GE_W5	2 1 2
W2-GE-S1-402_2	rozumie znaczenie trzeciego wymiaru w kartografii (np. okolica 3D, miasto wirtualne)	1GE_U8 1GE_W5	2 2
W2-GE-S1-402_3	potrafi posługiwać się mapą (np. interpretować rzeźbę terenu). Potrafi posługiwać się współrzędnymi geograficznymi i topograficznymi. Na podstawie analizy ortofotomapy potrafi np. analizować zmiany środowiska, które miały miejsce na przestrzeni ostatnich 30 lat (np. rozwój kamieniołomu w Brudzowicach)	1GE_K1 1GE_K2 1GE_U1 1GE_W2 1GE_W4	1 2 3 1 1

		1GE_W5	1
W2-GE-S1-402_4	zna współczesne źródła pozyskiwania danych do kartografii, także geologicznej (BDOO i BDOT10k, GeoLog, SOPO, Midas itd.) i potrafi je wykorzystać. Potrafi wykorzystać także portale internetowe (Geoportal, ORSIP, Polska e-mapa) do pozyskania danych topograficznych i kartograficznych (np. do generowania profili morfologicznych, NMT, mierzenia powierzchni itp.)	1GE_K1 1GE_K2 1GE_U1 1GE_U8	1 1 3 2
W2-GE-S1-402_5	potrafi wykorzystać oprogramowanie komputerowe (QGIS) np. do wygenerowania profilu morfologicznego, poziomic itp. Potrafi zdygitalizować fragment mapy.	1GE_U1 1GE_U3 1GE_U8	1 1 2

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*
b04	Problem-solving methods	Activating method – discussion / debate *an exchange of views supported by substantive arguments leading to a clash of different views, a compromise or the identification of common positions; it proceeds according to previously agreed-upon rules regarding the time, manner and turn-taking as well as the principles of civil discourse; a discussion is not a competition but aims at finding the best solutions or presenting different points of view; its varieties include brainstorming, Oxford-style debate, panel discussion, decision tree, conference discussion; a debate is an orderly dispute between supporters and opponents of a viewpoint, usually specialists in the field or pre-selected representatives of a group dealing with a common problem*
b07	Problem-solving methods	Activating methods: a case study *a comprehensive description of a phenomenon connected with the selected discipline; reflecting the reality, presenting the 'what', 'where' and 'how' of the phenomenon, i.e., all of its key aspects to be discussed in class; used as a reproduction, presentation, discussion or diagnosis of factors that shape the phenomenon or interact with it; an in-depth qualitative analysis and evaluation of a selected phenomenon*
b08	Problem-solving methods	Activating method – peer learning *learning through the exchange of knowledge in a group/team/pair of students, i.e., in the so-called learning cell; a kind of mutual learning; an approach focused on student activity under the guidance of the person teaching the course; a learning situation where students with a similar level of experience learn from one another*
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*
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*
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*
d04	Programmed learning methods	Reconstruction / reproduction

		proceeding according to the indicated/displayed pattern/model; e.g., the reconstruction of a structure, model, image, etc.

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-GE-S1-402_L_1	laboratory classes	24	course work	W2-GE-S1-402_3, W2-GE-S1-402_4, W2-GE-S1-402_5	b04, b07, b08, c06, d01, d03, d04
W2-GE-S1-402_W_1	lecture	12	course work	W2-GE-S1-402_1, W2-GE-S1-402_2, W2-GE-S1-402_3, W2-GE-S1-402_4	a01

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

Code	Category	Name (description)	Is it part of the BUNA?
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
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

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.

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

7.	**General information about the module**
Module name	**Chemistry in Earth sciences**
Module code	W2-GE-S1-408
Number of the ECTS credits	4
Language of instruction	Polish
Purpose and description of the content of education	Moduł Chemia w naukach o Ziemi ma umożliwić studentowi rozpoznanie związków pomiędzy procesami i zjawiskami przyrodniczymi zachodzącymi w geosferze a prawami chemicznymi, właściwościami związków i pierwiastków oraz procesami chemicznymi. Wprowadzane zagadnienia obejmują: Chemiczne pojęcia podstawowe, prawa i definicje. Wiązania chemiczne. Klasyfikacja związków chemicznych. Roztwory i teoria dysocjacji elektrolitycznej. Odczyn i przewodnictwo właściwe wody i pH. Charakterystyka pierwiastków na tle położenia w układzie okresowym. W efekcie ukończenia modułu student powinien umieć zdefiniować podstawowe prawa chemiczne, rozumieć związki pomiędzy chemią a naukami o Ziemi, rozumieć procesy zachodzące w atmosferze oraz hydrosferze i ich zmiany zachodzące pod wpływem działalności człowieka. interpretować procesy przyrodnicze w świetle wiedzy chemicznej, a także samodzielnie prowadzić wybrane obliczenia chemiczne mające zastosowanie w naukach o Ziemi. Moduł daje studentowi umiejętność pracy laboratoryjnej.
List of modules that must be completed before starting this module (if necessary)	[W2-GE-S1-008] Analytical methods in geology

8. Learning outcomes of the module

Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
W2-GE-S1-408_1	zna podstawowe pojęcia z zakresu chemii z zastosowaniu do nauk o Ziemi	1GE_W1 1GE_W5	2 2
W2-GE-S1-408_2	zna uwarunkowania środowiskowe działalności gospodarczej człowieka w zakresie nauk o Ziemi	1GE_W2 1GE_W5	2 3
W2-GE-S1-408_3	potrafi wykorzystywać posiadaną wiedzę do formułowania i rozwiązywania prostych i typowych, chemicznych problemów	1GE_U1 1GE_U2 1GE_U3 1GE_U7 1GE_U8 1GE_W5	2 2 1 1 2 3

W2-GE-S1-408_4	potrafi przeprowadzić wybrane eksperymenty chemiczne	1GE_U2 1GE_U3 1GE_U7	3 1 1
W2-GE-S1-408_5	potrafi wypowiedzieć się w sposób komunikatywny i zrozumiały, w mowie i na piśmie na temat poznanych zagadnień chemii w naukach o Ziemi, również w wymaganych prawem formach: notatnika laboratoryjnego, raportu, projektu, dokumentacji i innych.	1GE_U3	1
W2-GE-S1-408_6	potrafi brać udział w debacie – przedstawiać jasno i oceniać obiektywnie różne opinie i stanowiska, szukając argumentów naukowych oraz dyskutować o nich.	1GE_U4	2
W2-GE-S1-408_7	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.	1GE_U8	2
W2-GE-S1-408_8	jest świadomy rzetelności zdobytej wiedzy i konieczności konfrontowania z nią obiegowych opinii pochodzących z różnych źródeł.	1GE_K1	2
W2-GE-S1-408_9	jest świadomy ograniczonego zakresu zdobytej wiedzy i konieczności poszukiwania nowych informacji z wykorzystaniem rzetelnych i pewnych źródeł	1GE_K2	2

9. Methods of conducting classes

Code	Category	Name (description)
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*
b07	Problem-solving methods	Activating methods: a case study *a comprehensive description of a phenomenon connected with the selected discipline; reflecting the reality, presenting the 'what', 'where' and 'how' of the phenomenon, i.e., all of its key aspects to be discussed in class; used as a reproduction, presentation, discussion or diagnosis of factors that shape the phenomenon or interact with it; an in-depth qualitative analysis and evaluation of a selected phenomenon*
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*
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*
e05	Practical methods	Internship *including professional and individual training; gaining skills and experience in real-life conditions, e.g., in the environment, institution or workplace the student is preparing for by following a specific study programme; training in real working*

		conditions
f03	Methods of self-learning	Conceptual work *a (mainly intellectual) activity carried out independently (or in a selected group) resulting in the creation of a concept, idea or project; creating a plan based on a vision; developing a general outline of a project; producing a simplified sketch of the variant versions of a procedure/product/work*

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-GE-S1-408_L_1	laboratory classes	24	exam	W2-GE-S1-408_3, W2-GE-S1-408_4, W2-GE-S1-408_5, W2-GE-S1-408_6	c06, e01, e05, f03
W2-GE-S1-408_W_1	lecture	24	exam	W2-GE-S1-408_1, W2-GE-S1-408_2, W2-GE-S1-408_3, W2-GE-S1-408_6, W2-GE-S1-408_7, W2-GE-S1-408_8, W2-GE-S1-408_9	a05, b07, 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
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 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.

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

7.	General information about the module
Module name	**Contemporary trends in geology**
Module code	W2-GE-S1-403
Number of the ECTS credits	1
Language of instruction	Polish
Purpose and description of the content of education	Cykl wykładów prezentujących treści odnoszące się do najnowszych badań prowadzonych w Instytucie Nauk o Ziemi. Na wykładach zostaną poruszone wybrane, najbardziej interesujące i aktualne zagadnienia dotyczące skał, minerałów, skamieniałości i litosfery, badań hydrogeologicznych, geofizycznych i górniczych.
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-GE-S1-403_1	zna podstawowe pojęcia z zakresu geologii i pogłębia wiedzę w tym zakresie	1GE_W1 1GE_W2	1 1
W2-GE-S1-403_2	potrafi wykorzystywać posiadaną wiedzę do formułowania i rozwiązywania prostych i typowych, problemów geologicznych	1GE_U1 1GE_U3	1 1
W2-GE-S1-403_3	jest świadomy ograniczonego zakresu zdobytej wiedzy i konieczności poszukiwania nowych informacji z wykorzystaniem rzetelnych i pewnych źródeł	1GE_K2	1

9. Methods of conducting classes

Code	Category	Name (description)
a02	Lecture methods / expository methods	Monographic lecture *an exhaustive discussion of one issue, usually related to the research interests of the person teaching the course or a thorough presentation of one selected issue*

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-GE-S1-403_W_1	lecture	12	course work	W2-GE-S1-403_1, W2-GE-S1-403_2, W2-GE-S1-403_3	a02

11.	The student's work, apart from participation in classes, includes in particular:		
Code	**Category**	**Name (description)**	**Is it part of the BUNA?**
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
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

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.

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

7.	General information about the module
Module name	**Diploma Laboratory**
Module code	W2-GE-S1-044
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	Uczestnictwo w module Pracownia dyplomowa ma zapewnić studentowi czas potrzebny na wykonanie badań, eksperymentów, zebrania materiałów i napisanie pracy licencjackiej. W ramach modułu przewiduje się naukową dyskusję z promotorem lub opiekunem zagadnień i problemów napotykanych przy realizacji celu naukowego pracy, uzyskiwanie wskazówek do dalszych działań, wyjaśnianie wątpliwości oraz weryfikację poprawności bieżącej pracy. W pierwszej kolejności zakłada się dyskusję wyników badań lub studiów literatury i dokumentów pozyskanych przez studenta oraz stanu zaawansowania przygotowania pracy dyplomowej. W dalszej kolejności dyskusja służy wyjaśnianiu wątpliwości pojawiających się w trakcie prac terenowych/laboratoryjnych, zastosowania określonych metod do badań ustalonych z promotorem w pierwszym etapie. W końcowej fazie przygotowania pracy dyplomowej dyskusja może dotyczyć wniosków i odniesienia ich do literatury naukowej.
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-GE-S1-044_1	ma wystarczającą wiedzę związaną z tematyką pracy dyplomowej,	1GE_W1 1GE_W2 1GE_W3 1GE_W4	3 2 3 2
W2-GE-S1-044_2	sformułował cel naukowy pracy dyplomowej, wie jak chce go zrealizować, opracował konspekt pracy, promotor określa jako zaawansowany stopień realizacji założonego celu naukowego,	1GE_K2 1GE_U1 1GE_U3 1GE_U6 1GE_U8	3 3 1 3 3
W2-GE-S1-044_3	wybrał i zapoznał się z literaturą związaną z tematem pracy dyplomowej, zna dotychczasowy dorobek nauk o Ziemi w zakresie tej tematyki	1GE_K6	3

		1GE_U1 1GE_U8 1GE_W1	3 2 2
W2-GE-S1-044_4	przeprowadził wszystkie niezbędne prace dokumentacyjne, analizy, badania terenowe, badania laboratoryjne, eksperymenty, symulacje komputerowe oraz określił ich aspekty systemowe i pozatechniczne w tym ekonomiczne, etyczne; przedyskutował wyniki z promotorem oraz uzyskał od niego wskazówki do dalszego działania	1GE_U1 1GE_U2 1GE_U4 1GE_U7	3 4 2 2
W2-GE-S1-044_5	identyfikuje problemy naukowe wiążące się z realizacją pracy dyplomowej, dokonał analizy istniejących rozwiązań technicznych związanych z celem pracy	1GE_K1 1GE_K5 1GE_U1 1GE_W3	4 2 4 2
W2-GE-S1-044_6	w odniesieniu do problemów naukowych napotkanych podczas przygotowywania pracy dyplomowej proponuje ich rozwiązanie lub potrafi wybrać optymalne z przedstawionych mu rozwiązań	1GE_K2 1GE_K4 1GE_U1	1 2 2
W2-GE-S1-044_7	wykorzystuje dostępne źródła w celu tworzenia autentycznie nowych wartości, unikając tworzenia wartości pozornie nowych,	1GE_K3 1GE_K5 1GE_K6	2 1 1

9. Methods of conducting classes

Code	Category	Name (description)
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*
b04	Problem-solving methods	Activating method – discussion / debate *an exchange of views supported by substantive arguments leading to a clash of different views, a compromise or the identification of common positions; it proceeds according to previously agreed-upon rules regarding the time, manner and turn-taking as well as the principles of civil discourse; a discussion is not a competition but aims at finding the best solutions or presenting different points of view; its varieties include brainstorming, Oxford-style debate, panel discussion, decision tree, conference discussion; a debate is an orderly dispute between supporters and opponents of a viewpoint, usually specialists in the field or pre-selected representatives of a group dealing with a common problem*
b08	Problem-solving methods	Activating method – peer learning *learning through the exchange of knowledge in a group/team/pair of students, i.e., in the so-called learning cell; a kind of mutual learning; an approach focused on student activity under the guidance of the person teaching the course; a learning situation where students with a similar level of experience learn from one another*
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*
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*
e06	Practical methods	Observation *also conducted as fieldwork; a method of watching phenomena, objects or people in a systematic/planned way in order to gain knowledge about them; perceptual separation of elements of a model action as an element of learning through imitation; a complex system of cognition based on sensory experiences*
e07	Practical methods	Simulation *an indirect method; imitating reality in order to gain experience approximating a real one; recreating a real-world situation so that its participant can acquire an experience close to the authentic one; work on "replacement" material*
e08	Practical methods	Practice-as-research *also conducted as fieldwork; an activity aimed at confronting the acquired theory with practice through its practical application; students situate themselves in the reality they observe, study and transform through the prism of the theory; the method of practical classes is dominated by the application of knowledge to solving practical tasks*
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*
f02	Methods of self-learning	Individual work with a text *searching for and acquiring new information using textbooks and other written sources (including their digital versions); searching for texts, selecting fragments for analysis/interpretation, using other texts to solve a problem related to the studied issue*
f03	Methods of self-learning	Conceptual work *a (mainly intellectual) activity carried out independently (or in a selected group) resulting in the creation of a concept, idea or project; creating a plan based on a vision; developing a general outline of a project; producing a simplified sketch of the variant versions of a procedure/product/work*

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-GE-S1-044_L_1	practical classes	16	course work	W2-GE-S1-044_1, W2-GE-S1-044_2, W2-GE-S1-044_3, W2-GE-S1-044_4, W2-GE-S1-044_5, W2-GE-S1-044_6,	a05, b04, b08, c07, d01, d02, d03, e01, e06, e07, e08, f01, f02, f03

				W2-GE-S1-044_7	

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
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
b02	Consulting the curriculum and the organization of classes	Verification / adjustment / discussion of syllabus provisions *consulting the content of the syllabus, possibly in the presence of the year tutor or members of the class group, and, if necessary, reassessing the provisions concerning special conditions for class participation, e.g., space and time requirements, technical and other requirements, including conditions for participation in classes outside the walls of the university, classes organized in blocks, organized online, etc.*	No
b03	Consulting the curriculum and the organization of classes	Consulting the schedule *getting acquainted with the class schedule, possibly in the presence of the year tutor, in order to optimize participation in classes, including those supplementary to the core subjects listed in the pursued study programme*	No
c01	Preparation for verification of learning outcomes	Determining the stages of task implementation contributing to the verification of learning outcomes *devising a task implementation strategy embracing the division of content, the range of activities, implementation time and/or the method(s) of obtaining the necessary materials and tools, etc.*	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
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
d01	Consulting the results of the verification of learning outcomes	Analysis of the corrective feedback provided by the academic teacher on the results of the verification of learning outcomes *reading through the academic teacher's comments, assessments and opinions on the implementation*	No

		of the task aimed at checking the level of the achieved learning outcomes	
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
d03	Consulting the results of the verification of learning outcomes	Review of internship documentation *an analysis of the portfolio of documentation obtained during internship, including professional internship, and other practical classes and studio sessions, as well as the documentation developed in order to obtain credit for such classes; verification of the description, necessary attachments, opinions and grades before submitting the portfolio for acceptance*	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
e03	Activities complementary to the classes	Participation in non-obligatory teaching, research or organizational grants intensifying the achievement of the assumed learning outcomes *research, artistic, social and other activities not indicated in the curriculum, undertaken on the student’s own initiative as a way of supplementing, enriching or extending the content and activities indicated in the module curriculum, intensifying the achievement of learning outcomes*	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.

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

7.	General information about the module
Module name	**Diploma Seminar 1**
Module code	W2-GE-S1-048
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	Celem modułu Seminarium dyplomowe 1 jest teoretyczne przygotowanie do napisania pracy dyplomowej, nauczenie studenta samodzielnej pracy nad zadanym problemem/tematem zgodnie z wymogami stawianymi pracom naukowym, formułowanie opinii, poprawnego cytowania cudzych myśli oraz umiejętność prowadzenia rzeczowej dyskusji naukowej. Zajęcia służą również kontroli postępu przygotowywania pracy dyplomowej.
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-GE-S1-048_1	zna podstawowe pojęcia i zagadnienia z zakresu wybranej przez siebie tematyki pracy dyplomowej; oraz formy prezentacji danych geologicznych	1GE_U1 1GE_W1 1GE_W2	2 1 2
W2-GE-S1-048_2	zna podstawowe podręczniki, czasopisma polskie (lub zagraniczne) konieczne do realizacji zadanego tematu	1GE_U1 1GE_W1	1 1
W2-GE-S1-048_3	posiada umiejętność czytania ze zrozumieniem literatury fachowej, także w języku obcym	1GE_U2 1GE_U8 1GE_W1	1 1 1
W2-GE-S1-048_4	posiada umiejętność wyboru tematu badawczego, uczy się samodzielnie	1GE_K2 1GE_K6 1GE_U1 1GE_U8 1GE_W1	1 1 1 3 1

W2-GE-S1-048_5	umie przedstawić w sposób jasny i zrozumiały efekty swojej pracy	1GE_K1 1GE_U3 1GE_U4	2 2 2
W2-GE-S1-048_6	rozwija umiejętność krytycznego podejścia do posiadanych materiałów źródłowych i ich umiejętnej selekcji	1GE_K1 1GE_K6 1GE_U4	3 1 2
W2-GE-S1-048_7	potrafi zadawać pytania i odpowiadać na pytania skierowane do niego, umie prowadzić dyskusję naukową	1GE_K1 1GE_K2 1GE_U3 1GE_U4 1GE_U8 1GE_W3	2 2 2 3 1 1
W2-GE-S1-048_8	wyszukuje i wykorzystuje literaturę fachową (również obcojęzyczną) oraz informacje ze źródeł elektronicznych	1GE_K2 1GE_K6 1GE_W1	2 2 1

9. Methods of conducting classes

Code	Category	Name (description)
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*
b04	Problem-solving methods	Activating method – discussion / debate *an exchange of views supported by substantive arguments leading to a clash of different views, a compromise or the identification of common positions; it proceeds according to previously agreed-upon rules regarding the time, manner and turn-taking as well as the principles of civil discourse; a discussion is not a competition but aims at finding the best solutions or presenting different points of view; its varieties include brainstorming, Oxford-style debate, panel discussion, decision tree, conference discussion; a debate is an orderly dispute between supporters and opponents of a viewpoint, usually specialists in the field or pre-selected representatives of a group dealing with a common problem*
b05	Problem-solving methods	Activating method – seminar / proseminar *a seminar method; usually an oral presentation of a previously studied/diagnosed problem delivered on a forum; it aims at provoking a discussion concerning the results of research work; a type of conference, course or training session modelled on seminar classes*
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-GE-S1-055_L	seminar	12	course work	W2-GE-S1-048_1, W2-GE-S1-048_2, W2-GE-S1-048_3, W2-GE-S1-048_4, W2-GE-S1-048_5, W2-GE-S1-048_6, W2-GE-S1-048_7, W2-GE-S1-048_8	a05, b04, b05, f01

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
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
b03	Consulting the curriculum and the organization of classes	Consulting the schedule *getting acquainted with the class schedule, possibly in the presence of the year tutor, in order to optimize participation in classes, including those supplementary to the core subjects listed in the pursued study programme*	No
c01	Preparation for verification of learning outcomes	Determining the stages of task implementation contributing to the verification of learning outcomes *devising a task implementation strategy embracing the division of content, the range of activities, implementation time and/or the method(s) of obtaining the necessary materials and tools, etc.*	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
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
e03	Activities complementary to the classes	Participation in non-obligatory teaching, research or organizational grants intensifying the achievement of the assumed learning outcomes *research, artistic, social and other activities not indicated in the curriculum, undertaken on the student’s own initiative as a way of supplementing, enriching or extending the content and activities indicated in the module curriculum, intensifying the achievement of learning outcomes*	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.

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

7.	General information about the module
Module name	**Diploma Seminar 2**
Module code	W2-GE-S1-055
Number of the ECTS credits	6
Language of instruction	Polish
Purpose and description of the content of education	Celem modułu Seminarium dyplomowe 2 jest ostateczne przedstawienie przez Studenta efektów swojej pracy nad zadanym tematem; prowadzenie dyskusji w grupie, przedstawianie opinii na temat zagadnień geologicznych poruszanych w pracy dyplomowej i ich umiejętna obrona; etyka pisania prac – zgodnie z zasadą „Stop dla plagiatu”. Zajęcia służą również kontroli postępu przygotowywania pracy dyplomowej.
List of modules that must be completed before starting this module (if necessary)	[W2-GE-S1-048] Diploma Seminar 1

8. Learning outcomes of the module

Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
W2-GE-S1-055_1	ma dużą wiedzę w konkretnej dziedzinie, odpowiadającą tematyce pracy dyplomowej	1GE_U1 1GE_W1 1GE_W2	2 1 2
W2-GE-S1-055_2	zna literaturę fachową, polską i zagraniczną ze studiowanego obszaru geologii	1GE_U1 1GE_W1	1 1
W2-GE-S1-055_3	umie wykorzystać literaturę w celu napisania referatu, rozprawki, pracy dyplomowej; ma umiejętność wnioskowania i dowodzenia tezy na podstawie zebranych danych geologicznych	1GE_U1 1GE_U8 1GE_W1	1 1 1
W2-GE-S1-055_4	samodzielnie szuka informacji w bibliotekach, archiwach, mediach elektronicznych	1GE_K2 1GE_K6 1GE_U1 1GE_U8 1GE_W1	1 1 1 3 1
W2-GE-	doskonali umiejętności prezentowania danych, dowodu tez i wniosków przed szerszym forum	1GE_K1	2

S1-055_5		1GE_U3 1GE_U4	2 2
W2-GE-S1-055_6	jest zdolny do ostrożnego i krytycznego przyjmowania informacji dostępnych w Internecie	1GE_K1 1GE_K6 1GE_U4	3 1 2
W2-GE-S1-055_7	wykazuje aktywną postawę w czasie zajęć, korzysta ze wskazówek Opiekuna	1GE_K1 1GE_K2 1GE_U1 1GE_U3 1GE_U4 1GE_U8	2 2 1 2 3 1

9. Methods of conducting classes

Code	Category	Name (description)
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*
b04	Problem-solving methods	Activating method – discussion / debate *an exchange of views supported by substantive arguments leading to a clash of different views, a compromise or the identification of common positions; it proceeds according to previously agreed-upon rules regarding the time, manner and turn-taking as well as the principles of civil discourse; a discussion is not a competition but aims at finding the best solutions or presenting different points of view; its varieties include brainstorming, Oxford-style debate, panel discussion, decision tree, conference discussion; a debate is an orderly dispute between supporters and opponents of a viewpoint, usually specialists in the field or pre-selected representatives of a group dealing with a common problem*
b05	Problem-solving methods	Activating method – seminar / proseminar *a seminar method; usually an oral presentation of a previously studied/diagnosed problem delivered on a forum; it aims at provoking a discussion concerning the results of research work; a type of conference, course or training session modelled on seminar classes*
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*
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-GE-S1-055_L	seminar	12	course work	W2-GE-S1-055_1, W2-GE-	a05, b04, b05, c07, f01

				S1-055_2, W2-GE-S1-055_3, W2-GE-S1-055_4, W2-GE-S1-055_5, W2-GE-S1-055_6, W2-GE-S1-055_7	

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
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
b03	Consulting the curriculum and the organization of classes	Consulting the schedule *getting acquainted with the class schedule, possibly in the presence of the year tutor, in order to optimize participation in classes, including those supplementary to the core subjects listed in the pursued study programme*	No
c01	Preparation for verification of learning outcomes	Determining the stages of task implementation contributing to the verification of learning outcomes *devising a task implementation strategy embracing the division of content, the range of activities, implementation time and/or the method(s) of obtaining the necessary materials and tools, etc.*	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
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
d01	Consulting the results of the verification of learning outcomes	Analysis of the corrective feedback provided by the academic teacher on the results of the verification of learning outcomes *reading through the academic teacher's comments, assessments and opinions on the implementation of the task aimed at checking the level of the achieved learning outcomes*	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	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*	
e03	Activities complementary to the classes	Participation in non-obligatory teaching, research or organizational grants intensifying the achievement of the assumed learning outcomes *research, artistic, social and other activities not indicated in the curriculum, undertaken on the student's own initiative as a way of supplementing, enriching or extending the content and activities indicated in the module curriculum, intensifying the achievement of learning outcomes*	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.

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

7.	General information about the module
Module name	**Drilling 1**
Module code	W2-GE-S1-413
Number of the ECTS credits	1
Language of instruction	Polish
Purpose and description of the content of education	Zadaniem modułu Wiertnictwo 1 jest przedstawienie podstaw techniki i technologii wierceń oraz zasad pracy geologa projektującego, obsługującego i dokumentującego prace wiertnicze. Zadanie to realizowane jest przez poruszanie takich zagadnień, jak: Podstawowe pojęcia z zakresu wiertnictwa. Zwiercalność skał i kategorie zwiercalności. Klasyfikacje otworów i metod wiertniczych. Przegląd metod wiertniczych z uwzględnieniem: rodzajów otworów, zasad i technologii wiercenia narzędzi, urządzeń, organizacji pracy, pobierania prób skał i wody, likwidacji otworów, zagadnień bezpieczeństwa pracy. Otwory studzienne: konstrukcja otworów, dobór filtrów, obserwacje poziomów wodonośnych, próbne pompowanie i interpretacja wyników. Płuczka wiertnicza: zadania płuczki, metody przygotowania i badania, parametry i ich dobór w zależności od warunków geologicznych, systemy cyrkulacji płuczki. Rurowanie i zamykanie wód - iłowanie i cementowanie, kontrola skuteczności zamykania wód. Przyczyny awarii wiertniczych, roboty ratunkowe, narzędzia do instrumentacji. Geologiczna obsługa wierceń: projekt geologiczno-techniczny, plan ruchu, opróbowanie, typy rdzeniówek a uzysk rdzenia, pomiary i obserwacje geologiczne i geofizyczne, dzienniki wiercenia, dokumentacja wynikowa.
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-GE-S1-413_1	znajomość metod szacowania kategorii zwiercalności skał	1GE_U1 1GE_U3	1 1
W2-GE-S1-413_2	umiejętność scharakteryzowania typów otworów wiertniczych i metod wiercenia	1GE_U1	2
W2-GE-S1-413_3	umiejętność objaśnienia zasad i technologii wiercenia różnymi metodami z uwzględnieniem sytuacji awaryjnych	1GE_U1 1GE_U3	1 1
W2-GE-S1-413_4	umiejętność doboru parametrów płuczki wiertniczej do warunków geologicznych i technicznych	1GE_U1 1GE_U3	1 1
W2-GE-	zdolność do sporządzenia projektu geologiczno-technicznego otworu	1GE_U1	1

S1-413_5		1GE_U3	1
W2-GE-S1-413_6	zdolność do opracowania projektu cementowania otworu wiertniczego	1GE_U1 1GE_U3	1 1
W2-GE-S1-413_7	umiejętność zidentyfikowania elementów urządzeń wiertniczych i objaśnienia ich funkcji	1GE_U1 1GE_U3	1 1
W2-GE-S1-413_8	świadomość roli, czynności, obowiązków i odpowiedzialności służby geologicznej dozorującej wiercenia	1GE_K1 1GE_K2 1GE_K3 1GE_K4 1GE_K6	1 1 1 1 1
W2-GE-S1-413_9	postępuje zgodnie z zasadami etyki ekologicznej, ma świadomość istniejących unormowań prawnych w geologii i przestrzega ich	1GE_K1 1GE_K2 1GE_K3 1GE_K4 1GE_K6	1 1 3 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*
a02	Lecture methods / expository methods	Monographic lecture *an exhaustive discussion of one issue, usually related to the research interests of the person teaching the course or a thorough presentation of one selected issue*
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*
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*
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-GE-S1-413_L_1	laboratory classes	12	course work	W2-GE-S1-413_1, W2-GE-S1-413_4, W2-GE-S1-413_5, W2-GE-S1-413_6, W2-GE-S1-413_7, W2-GE-S1-413_8	a03, c07, e01
W2-GE-S1-413_W_1	lecture	12	course work	W2-GE-S1-413_2, W2-GE-S1-413_3, W2-GE-S1-413_5, W2-GE-S1-413_7, W2-GE-S1-413_8, W2-GE-S1-413_9	a01, a02

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
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 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.

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

7.	General information about the module
Module name	**Dynamic Earth 2**
Module code	W2-GE-S1-406
Number of the ECTS credits	4
Language of instruction	Polish
Purpose and description of the content of education	Moduł Dynamika Ziemi 2 jest podzielony na trzy części: 1)Elementy tektoniki. Głównym celem tej części modułu jest przekazanie wiedzy o zróżnicowanych strukturach tektonicznych kształtujących skorupę ziemską (fałdy, uskoki, spękania, nasunięcia, płaszczowiny, foliacja lineacja i in.). Student uczy się rozpoznawać i interpretować różne struktury tektoniczne, poznaje ich podstawowe klasyfikacje i mechanizmy powstawania. Nabywa umiejętności przedstawiania i zapisu wyników pomiarów orientacji struktur geologicznych oraz poznaje zasady posługiwania się kompasem geologicznym. 2)Elementy kartowania geologicznego. Celem tej części modułu jest przekazanie wiedzy i umiejętności dotyczących rozpoznawania podstawowych typów budowy geologicznej (budowa płytowa, monoklinalna, fałdowa) oraz struktur geologicznych (uskoki, fałdy, ciała magmowe, niezgodności) na mapach i przekrojach geologicznych. Student nabiera umiejętności interpretacji budowy i ewolucji geologicznej obszaru na podstawie gotowych opracowań kartograficznych (w tym kreślenia przekrojów geologicznych, wykonywania opisowego opracowania tekstowego dotyczącego przedstawionego obszaru) – opanowanie sztuki czytania mapy geologicznej na poziomie podstawowym. 3)Procesy egzogeniczne z elementami sedymentologii. Student zdobywa podstawową wiedzę o procesach egzogenicznych, które są kluczowe dla zrozumienia dynamiki powierzchni Ziemi. Zapoznaje się z metodami badań skał osadowych. Poznaje cechy wybranych środowisk sedymentacyjnych (procesy sedymentacyjne i sposoby ich zapisu w osadzie).
List of modules that must be completed before starting this module (if necessary)	[W2-GE-S1-405] zna instrumenty ochrony środowiska przed oddziaływaniem prac geologicznych i górniczych

8.	Learning outcomes of the module		
Code	**Description**	**Learning outcomes of the programme**	**Level of competenc (scale 1-5)**
W2-GE-S1-406_1	student potrafi rozpoznawać i odpowiednio klasyfikować podstawowe struktury tektoniczne oraz ustalać ich wzajemne relacje i następstwo czasowe.	1GE_U1 1GE_W5	1 1
W2-GE-S1-406_2	zna graficzne i tekstowe sposoby prezentacji pomiarów orientacji struktur geologicznych, a także podstawy działania kompasu geologicznego.	1GE_U1 1GE_W5	1 1
W2-GE-S1-406_3	zna podstawowe typy geologicznych opracowań kartograficznych, ich strukturę, elementy oraz rodzaje stosowanych na nich kodów (symboli, oznaczeń, szrafur).	1GE_W5	1
W2-GE-	rozpoznaje podstawowe typy budowy geologicznej (płytowa, monoklinalna, fałdowa) oraz struktur geologicznych		

S1-406_4	(uskoki, fałdy, niezgodności, ciała magmowe) na mapach.	1GE_U1 1GE_W5	1 1
W2-GE-S1-406_5	wykonuje przekroje geologiczne dla obszarów o nieskomplikowanej budowie geologicznej. Potrafi dokonać na poziomie podstawowym syntezy wiedzy o budowie i ewolucji geologicznej obszaru na podstawie materiałów kartograficznych.	1GE_U1 1GE_W5	1 1
W2-GE-S1-406_6	potrafi wyjaśnić mechanizmy i efekty egzogenicznych procesów geologicznych oraz zna związaną z tymi procesami terminologię geologiczną.	1GE_U1 1GE_W5	1 1
W2-GE-S1-406_7	zna i rozumie związki między procesami egzogenicznymi a endogenicznymi.	1GE_U1 1GE_W5	1 1
W2-GE-S1-406_8	zna podstawowe procesy sedymentacyjne i wie, jak zapisują się w osadzie.	1GE_U1 1GE_W5	1 1
W2-GE-S1-406_9	rozumie potrzebę ciągłego poszerzania swojej wiedzy. W sposób zorganizowany potrafi dysponować swoim czasem na samodzielne dokształcanie się	1GE_K1 1GE_K2	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*
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*
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*
b03	Problem-solving methods	Activating method – educational games *learning content in the guise of a rule- and/or principle-based game; conducted in a deliberately arranged situation based on the description of relevant facts and processes; learners compete with one another within the framework of rules laid down by the academic teacher; varieties include simulation games – involving a simulation of real situations; decision games – based on the decision-making process and the recognition of the consequences of the decisions made (e.g., a decision tree); psychological games – increasing the emotional-volitional component of the participants' attitudes*
b08	Problem-solving methods	Activating method – peer learning *learning through the exchange of knowledge in a group/team/pair of students, i.e., in the so-called learning cell; a kind of mutual learning; an approach focused on student activity under the guidance of the person teaching the course; a learning situation where students with a similar level of experience learn from one another*
b09	Problem-solving methods	Activating method – flipped classroom

		anticipatory learning; work in class is based on previously studied material indicated by the person teaching the course; preparation outside the classroom serves the purpose of getting familiar with the issues whose knowledge is necessary for participating in the in-class discussion and the training in the related practical skills; the activity is based on the work of students under the guidance of the person teaching the course
c01	Demonstration methods	Exhibition *preparing an object for public display and displaying it in order to elicit a specific reaction; creating a themed collection of specimens/objects/works to illustrate a specific issue*
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*

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-GE-S1-406_L_1	laboratory classes	24	exam	W2-GE-S1-406_4, W2-GE-S1-406_5, W2-GE-S1-406_8, W2-GE-S1-406_9	b03, b08, b09, c01, c07
W2-GE-S1-406_W_1	lecture	24	exam	W2-GE-S1-406_1, W2-GE-S1-406_2, W2-GE-S1-406_3, W2-GE-S1-406_6, W2-GE-S1-406_7, W2-GE-S1-406_8	a01, a03, b01, b02

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
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
b02	Consulting the curriculum and the organization of classes	Verification / adjustment / discussion of syllabus provisions *consulting the content of the syllabus, possibly in the presence of the year tutor or members of the class group, and, if necessary, reassessing the provisions concerning special conditions for class participation, e.g., space and time requirements, technical and other requirements, including conditions for participation in classes outside the walls of the university, classes organized in blocks, organized online, etc.*	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*	No

		well as from the notes or other materials/artifacts made in class	
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.

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

7.	General information about the module
Module name	**Economic geology 2**
Module code	W2-GE-S1-043
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	Moduł składa się z wykładów i ćwiczeń podczas których student poznaje zagadnienia związane z historią odkrycia, eksploatacji i wykorzystania kopalin metalicznych. W dalszej części cykl wykładów obejmuje zagadnienia z zakresu geochemicznych i geologicznych aspektów powstania złóż rud i ich genetycznej charakterystyki. W szczególności prawidłowości rozmieszczenia wybranych złóż metali na świecie względem głównych struktur geologicznych Ziemi. Ważną częścią wiedzy jest charakterystyka procesów prowadzących do powstania złóż rud metali, migracja i koncentracja pierwiastków w skorupie ziemskiej. Genetyczna klasyfikacja złóż oraz znaczenie poszczególnych procesów dla formowania się złóż rud metali (Fe, Cu, Ag, Zn-Pb, Ni, Sn, Cr). Na przykładach najważniejszych dla światowej gospodarki złóż: Fe, Cu, Co, Cr, Ni, W, Mo, Sn, Zn-Pb, Hg omówione zostaną warunki geologiczno-górnicze. Klasyfikacje złóż rud i pierwiastków użytecznych. Światowe zasoby geologiczne i przemysłowe oraz zagospodarowanie złóż rud metali. Ćwiczenia obejmują wiedzę z zakresu formy, budowy i jakości polskich złóż rud metali. Złoża Polski: typ mineralizacji, najważniejsze minerały kruszcowe, zespoły paragenetyczne, rodzaje rudy, budowa wybranych złóż w tym tych, których eksploatacja ma jedynie znaczenie historyczne. Omawiane są złoża: Fe, Mn, V, Zn-Pb, Cu, Mo, W, Sn, Co, Cr, Al, Ag, Au. Bardziej szczegółowo omawiana jest geologia i charakterystyka złożowa rud Cu na Monoklinie Przedsudeckiej i w Niecce Północnosudeckiej, rud Zn-Pb w rejonie śląsko-krakowskim oraz rud żelaza w rejonie częstochowskim, świętokrzyskim oraz suwalskim.
List of modules that must be completed before starting this module (if necessary)	[W2-GE-S1-405] zna instrumenty ochrony środowiska przed oddziaływaniem prac geologicznych i górniczych [W2-GE-S1-020] Mineralogy I [W2-GE-S1-027] Mineralogy II [W2-GE-S1-034] Petrology 1

8. Learning outcomes of the module

Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
W2-GE-S1-043_1	zna pojęcia i procesy związane z formowaniem się skał i krystalizacją minerałów.	1GE_W1	1
W2-GE-S1-043_2	rozumie jaki wpływ ma eksploatacja rud metali oraz ich przeróbka na stan środowiska.	1GE_W2	2
W2-GE-S1-043_3	posiada wiedzę na temat znaczenia eksploatacji rud metali dla rozwoju cywilizacji oraz współczesnej gospodarki.	1GE_W3	3

W2-GE-S1-043_4	posiada wiedzę na temat projektów poszukiwania i dokumentowania złóż rud metali.	1GE_U2 1GE_W4	2 1
W2-GE-S1-043_5	posiada podstawową wiedzę z chemii i fizyki potrzebną do zrozumienia remobilizacji pierwiastków w litosferze.	1GE_W5	1
W2-GE-S1-043_6	potrafi dokonać opisu złoża, typu mineralizacji oraz scharakteryzować najważniejsze zespoły minerałów	1GE_U1 1GE_U2	1 3
W2-GE-S1-043_7	posiada umiejętność wykonania syntetycznego opisu złoża - karty złoża z uwzględnieniem najważniejszych parametrów geologiczno-górniczych.	1GE_U3	3

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*
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*

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-GE-S1-043_L_1	laboratory classes	18	exam	W2-GE-S1-043_1, W2-GE-S1-043_6, W2-GE-S1-043_7	a03, c07
W2-GE-S1-043_W_1	lecture	18	exam	W2-GE-S1-043_1, W2-GE-S1-043_2, W2-GE-S1-043_3, W2-GE-S1-043_4, W2-GE-S1-043_5, W2-GE-S1-043_6	a01

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	No

		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)	

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.

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

7.	**General information about the module**
Module name	**Environmental Mineralogy**
Module code	W2-GE-S1-041
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	Studenci poznają rolę mineralogii w naukach o środowisku i inżynierii środowiska. Zapoznają się z procesami zachodzącymi w przyrodzie, które mają bezpośredni wpływ na jakość życia i zdrowie człowieka. W szczególności, dowiadują się o kluczowej roli minerałów w specjacji pierwiastków i związków chemicznych istotnych środowiskowo i toksykologicznie. Poznają zastosowanie minerałów do remediacji składników środowiska oraz do przeciwdziałania mobilności oraz biodostępności pierwiastków potencjalnie toksycznych. Ze względu na rosnące znaczenie miast, dla planowania ich zrównoważonego rozwoju poznają geochemię i mineralogię środowiska miejskiego. Problem zmian klimatycznych i zielonej transformacji poznają na przykładzie geologicznej sekwestracji CO2 i możliwości wiązania tego gazu w minerałach i skałach. Studenci rozwiną umiejętność przeprowadzania doświadczeń i eksperymentów, pracy w laboratorium i obsługi prostych urządzeń analitycznych. Umiejętność stosowania metod badawczych i interpretacji wyników nabędą analizując skład faz mineralnych gleb, odpadów hutniczych, czy popiołów i pyłów lotnych ze spalania paliw kopalnych i biomasy.
List of modules that must be completed before starting this module (if necessary)	[W2-GE-S1-408] Chemistry in Earth sciences [W2-GE-S1-020] Mineralogy I [W2-GE-S1-027] Mineralogy II

8. Learning outcomes of the module

Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
W2-GE-S1-041_1	zna i rozumie rolę mineralogii w naukach o środowisku i inżynierii środowiska. Rozumie podstawowe procesy zachodzące w środowisku. Zna uwarunkowania środowiskowe działalności gospodarczej, potrafi określić zagrożenia z nimi związane i planować działania zaradcze. Zna i potrafi stosować techniki do analiz prób.	1GE_W1 1GE_W2 1GE_W5	1 2 1
W2-GE-S1-041_2	potrafi przeprowadzić eksperymenty i symulacje w warunkach laboratoryjnych, dokonać obserwacji i zinterpretować ich wyniki; potrafi współpracować w grupie, myśleć i działać w sposób kreatywny, pogłębiać wiedzę samodzielnie.	1GE_U2 1GE_U7 1GE_U8	2 2 2
W2-GE-S1-041_3	jest świadomy wartości rzetelnie zdobytej wiedzy, zagrożeń związanych z zanieczyszczeniem środowiska i wie jak je minimalizować.	1GE_K1 1GE_K3	1 2

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*
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*
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*
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*
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*
e06	Practical methods	Observation *also conducted as fieldwork; a method of watching phenomena, objects or people in a systematic/planned way in order to gain knowledge about them; perceptual separation of elements of a model action as an element of learning through imitation; a complex system of cognition based on sensory experiences*
e07	Practical methods	Simulation *an indirect method; imitating reality in order to gain experience approximating a real one; recreating a real-world situation so that its participant can acquire an experience close to the authentic one; work on "replacement" material*
e09	Practical methods	Plein air session *implementation of a creative task in an open-air area, e.g. outside the studio*

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-GE-S1-041_L_1	laboratory classes	24	course work	W2-GE-S1-041_1, W2-GE-S1-041_2, W2-GE-S1-041_3	d01, e01, e06, e07, e09
W2-GE-S1-041_W_1	lecture	12	course work	W2-GE-S1-041_1, W2-GE-S1-041_3	a01, b01, b02

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*	No

		range of activities indicated in it as required for full participation in classes	
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
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

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.

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

7.	**General information about the module**
Module name	**Environmental Protection**
Module code	W2-GE-S1-016
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	Celem modułu Ochrona i kształtowanie środowiska jest umożliwienie zrozumienia interakcji pomiędzy środowiskiem a człowiekiem oraz konieczności zapobiegania niekorzystnym skutkom działalności człowieka. Poprzez poznanie struktur środowiska, praw rządzących tymi strukturami, metod oceny stanu i antropogenicznych przekształceń środowiska oraz sposobów zapobiegania tym przekształceniom student kształtuje postawę otwarcia na potrzeby nie tylko swoje lecz także innych użytkowników tych samych zasobów przyrody. Poznaje cykl życia wybranych urządzeń, obiektów i systemów technicznych związanych z gospodarowaniem różnymi geokomponentami środowiska. W trakcie ćwiczeń może zapoznać się z nowoczesnymi instalacjami służącymi ochronie środowiska: systemem oczyszczania ścieków, zagospodarowania odpadów komunalnych, badania jakości powietrza. Nabywa umiejętności poszukiwania wiedzy, pytania, postrzegania zjawisk, samodzielnego wnioskowania, wreszcie pisemnego syntetyzowania zebranych informacji. Po osiągnięciu efektów kształcenia modułu student powinien dostrzegać, że wszelkie działania w obrębie geologii stosowanej mają nierozerwalny związek ze środowiskiem, kształtują je i muszą być podporządkowane etyce ekologicznej.
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-GE-S1-016_1	zna podstawowe pojęcia z zakresu ochrony środowiska i pogłębia wiedzę z tego zakresu	1GE_W1 1GE_W2 1GE_W5	1 2 1
W2-GE-S1-016_2	opisuje i wyjaśnia zjawiska oraz przyczyny i skutki globalnych i regionalnych oddziaływań człowieka na środowisko, ocenia wpływ metod i technik stosowanych do rozwiązywania globalnych problemów środowiska zarówno na biotyczne jak i abiotyczne elementy środowiska, rozumie społeczne, ekonomiczne i prawne uwarunkowania działalności geologicznej w środowisku	1GE_W1 1GE_W2 1GE_W3 1GE_W4	1 1 2 1
W2-GE-S1-016_3	opisuje i tłumaczy źródła powstania, sposoby ograniczania i technicznego unieszkodliwiania zanieczyszczeń materiałowych i energetycznych wprowadzanych do środowiska (ścieki, odpady komunalne, przemysłowe, deformacje	1GE_W2 1GE_W4	1 2

	atmo-, bio- i litosfery)		
W2-GE-S1-016_4	potrafi przygotować syntetyczne, krytyczne opracowanie wybranego problemu z zakresu ochrony środowiska z wykorzystaniem wybranej literatury i innych dostępnych źródeł (bazy danych) zarówno w języku polskim jak i obcym lub zaplanować prosty eksperyment dotyczący wybranego problemu ochrony środowiska	1GE_U1 1GE_U2 1GE_U3 1GE_U4 1GE_U7 1GE_U8	2 2 2 1 1 1
W2-GE-S1-016_5	potrafi działać racjonalnie i ekonomicznie w zakresie minimalizacji obciążania środowiska, oceniać zagrożenia wywołane zanieczyszczeniami antropogenicznymi, postrzega środowisko jako system powiązanych ze sobą geokomponentów, których poprawa wymaga stosowania adekwatnych metod, narzędzi i parametrów	1GE_U1 1GE_U2 1GE_W2 1GE_W4 1GE_W5	1 3 1 1 1
W2-GE-S1-016_6	postrzega wartości środowiska, ceni je, dostrzega relacje wiążące istoty żywe ze środowiskiem i zdolny jest ocenić odpowiedzialność człowieka za podejmowane obecnie decyzje, których skutki będą obciążać przyszłe pokolenia	1GE_K1 1GE_K3 1GE_K6 1GE_W3	2 2 2 1
W2-GE-S1-016_7	wykazuje aktywną postawę do poznawania rzeczy nowych i wykorzystywania ich dla wzbogacania własnej wiedzy; krytycznego i twórczego myślenia oraz otwartości na poglądy innych	1GE_K1 1GE_K2	2 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*
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*
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*
b04	Problem-solving methods	Activating method – discussion / debate *an exchange of views supported by substantive arguments leading to a clash of different views, a compromise or the identification of common positions; it proceeds according to previously agreed-upon rules regarding the time, manner and turn-taking as well as the principles of civil discourse; a discussion is not a competition but aims at finding the best solutions or presenting different points of view; its varieties include brainstorming, Oxford-style debate, panel discussion, decision tree, conference discussion; a debate is an orderly dispute between supporters and opponents of a viewpoint, usually specialists in the field or pre-selected representatives of a group dealing with a common problem*
b07	Problem-solving methods	Activating methods: a case study *a comprehensive description of a phenomenon connected with the selected discipline; reflecting the reality, presenting the 'what', 'where' and 'how' of the phenomenon, i.e., all of its key aspects to be discussed in class; used as a reproduction,*

		presentation, discussion or diagnosis of factors that shape the phenomenon or interact with it; an in-depth qualitative analysis and evaluation of a selected phenomenon
e06	Practical methods	Observation *also conducted as fieldwork; a method of watching phenomena, objects or people in a systematic/planned way in order to gain knowledge about them; perceptual separation of elements of a model action as an element of learning through imitation; a complex system of cognition based on sensory experiences*

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-GE-S1_016_L_1	practical classes	12	course work	W2-GE-S1-016_4, W2-GE-S1-016_5, W2-GE-S1-016_6, W2-GE-S1-016_7	b04, b07, e06
W2-GE-S1_016_w_1	lecture	24	course work	W2-GE-S1-016_1, W2-GE-S1-016_2, W2-GE-S1-016_3, W2-GE-S1-016_5, W2-GE-S1-016_6	a01, b01, b02

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
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
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
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.

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

7.	**General information about the module**
Module name	**Field trip: Petrology**
Module code	W2-GE-S1-421
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	Ćwiczenia terenowe: Petrologia mają umożliwić studentowi zapoznanie się z metodami pracy geologa w terenie, nauczyć go wykorzystywania w terenie wiedzy teoretycznej nabytej podczas zajęć stacjonarnych. Student powinien opanować i utrwalić umiejętność identyfikacji minerałów skałotwórczych, podstawowych struktur i tekstur skalnych by na ich podstawie poprawnie identyfikować rodzaje skał oraz typy mineralizacji. Moduł ma również za zadanie wyrobienie nawyku prowadzenia notatnika terenowego, który jest ważnym składnikiem dokumentacji geologicznej. Kurs jest okazją do dyskusji na temat procesów geologicznych (np. rozwój zjawisk magmowych, metamorfizm, wulkanizm), surowców mineralnych regionu odbywania ćwiczeń oraz problematyki wpływu górnictwa i przemysłu na środowisko.
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-GE-S1-421_1	poznanie metod identyfikacji minerałów i skał podczas prac terenowych	1GE_W1 1GE_W5	1 2
W2-GE-S1-421_2	umiejętność klasyfikowania głównych typów skał na podstawie obserwacji w makro-skali	1GE_U1 1GE_W5	2 3
W2-GE-S1-421_3	powiązanie minerałów skałotwórczych z typami skał, asocjacji i paragenez	1GE_U3 1GE_W2	2 1
W2-GE-S1-421_4	zapamiętanie lokalizacji wizytowanych miejsc i powiązanie ich z budową geologiczną regionu objętego ćwiczeniami terenowymi	1GE_U1 1GE_U3 1GE_W5	1 1 1
W2-GE-S1-421_5	gromadzenie próbek mineralogicznych i petrograficznych do badań	1GE_K1 1GE_K2	2 2

		1GE_U6 1GE_U7 1GE_W5	2 2 3

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*
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*
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*
c01	Demonstration methods	Exhibition *preparing an object for public display and displaying it in order to elicit a specific reaction; creating a themed collection of specimens/objects/works to illustrate a specific issue*
e09	Practical methods	Plein air session *implementation of a creative task in an open-air area, e.g. outside the studio*

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-GE-S1-421_CT	field practice	36	course work	W2-GE-S1-421_1, W2-GE-S1-421_2, W2-GE-S1-421_3, W2-GE-S1-421_4, W2-GE-S1-421_5	a01, b01, b02, c01, e09

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
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
c01	Preparation for verification of learning outcomes	Determining the stages of task implementation contributing to the verification of learning outcomes *devising a task implementation strategy embracing the division of content, the range of activities,*	No

		implementation time and/or the method(s) of obtaining the necessary materials and tools, etc.	

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.

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

7.	**General information about the module**
Module name	**Foreign language course 1**
Module code	LJO-2023-01
Number of the ECTS credits	3
Language of instruction	
Purpose and description of the content of education	The module aims to develop communicative language competences and to stimulate the acquisition of skills in oral and written language reception and production as well as in language interaction and mediation, taking into account different varieties and registers of the foreign language and the necessary language strategies. The module develops the ability to learn, to independently search for and select information and sources of knowledge, and to work in a team. The main emphasis is placed on strengthening the skills of effective communication with others and the fluent use of foreign language in social, educational or professional contacts in accordance with the criteria laid out in the Common European Framework of Reference for Languages (CEFR).
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)
LJO1_1	Can, following the teacher’s instructions, use his/her general knowledge in order to develop and practice the listening, reading, writing and speaking skills in a foreign language, can formulate clearly and correctly, moderately complex oral and written texts on various topics, effectively and properly using the relevant vocabulary and rules for the organization of statements, in accordance in accordance with the criteria laid out in the Common European Framework of Reference for Languages (CEFR).	KJ.2023_U	2
LJO1_2	Can search, collect and make use of general information contained in foreign texts of various levels of difficulty, can present their opinions using correct language constructions.	KJ.2023_U	2
LJO1_3	Can, following general instructions, properly select sources and general information needed to learn a foreign language.	KJ.2023_U	2

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*
b06	Problem-solving methods	Activating method – staged drama/drama *experiential learning; solving a problem by acting out a role; a.k.a. a role-playing method; role-players interpret their roles in an individual way; the identification with the role is achieved through the activation of the senses, imagination and speech, the stimulation of gesture and movement, etc.; the aim of drama is to experience situations, problems and events mediated by the role; staged drama is a role-playing method enriched with props and stage scenery illustrating a theme*
c02	Demonstration methods	Video show *reproducing a film or video material in its entirety or in fragments in order to illustrate the content taught in class, to submit it to analysis and evaluation or to use it as an exercise in image perception; a film/video can be a work of art, an illustration (also technical illustration) of a content/phenomenon/object, a private record of an action, a media image, etc.*
c03	Demonstration methods	Audio playback / audio drama *preparation and reproduction of sound material (audio recording) in its entirety or in fragments in order to illustrate the content taught in class, to submit it to analysis and evaluation or to use it as a method of sound perception, including the appreciation of a musical piece, an artistic audio drama, an oral presentation of an artistic or scientific text as well as a media text; analysis of the sound material recorded on a carrier with a view to studying a sound-related phenomenon*
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*
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*
d04	Programmed learning methods	Reconstruction / reproduction *proceeding according to the indicated/displayed pattern/model; e.g., the reconstruction of a structure, model, image, etc.*
e07	Practical methods	Simulation *an indirect method; imitating reality in order to gain experience approximating a real one; recreating a real-world situation so that its participant can acquire an experience close to the authentic one; work on “replacement” material*
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*
f02	Methods of self-learning	Individual work with a text

		searching for and acquiring new information using textbooks and other written sources (including their digital versions); searching for texts, selecting fragments for analysis/interpretation, using other texts to solve a problem related to the studied issue

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
LJO1_lekt	language classes	30	course work	LJO1_1, LJO1_2, LJO1_3	a03, a05, b06, c02, c03, c06, c07, d02, d03, d04, e07, f01, f02

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*	Yes
c01	Preparation for verification of learning outcomes	Determining the stages of task implementation contributing to the verification of learning outcomes *devising a task implementation strategy embracing the division of content, the range of activities, implementation time and/or the method(s) of obtaining the necessary materials and tools, etc.*	Yes
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
d01	Consulting the results of the verification of learning outcomes	Analysis of the corrective feedback provided by the academic teacher on the results of the verification of learning outcomes *reading through the academic teacher's comments, assessments and opinions on the implementation of the task aimed at checking the level of the achieved learning outcomes*	Yes
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*	Yes

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.

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

7.	**General information about the module**
Module name	**Foreign language course 2**
Module code	LJO-2023-02
Number of the ECTS credits	3
Language of instruction	
Purpose and description of the content of education	The module aims to develop communicative language competences and to stimulate the acquisition of skills in oral and written language reception and production as well as in language interaction and mediation, taking into account different varieties and registers of the foreign language and the necessary language strategies. The module develops the ability to learn, to independently search for and select information and sources of knowledge, and to work in a team. The main emphasis is placed on strengthening the skills of effective communication with others and the fluent use of foreign language in social, educational or professional contacts in accordance with the criteria laid out in the Common European Framework of Reference for Languages (CEFR).
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)
LJO2_1	Can effectively use the possessed detailed knowledge in order to develop and practice the listening, reading, writing and speaking skills in a foreign language, can formulate clear and correct more complex oral and written texts on various topics, effectively and properly using the relevant vocabulary, rules of text organization, in accordance in accordance with the criteria laid out in the Common European Framework of Reference for Languages (CEFR).	KJ.2023_U	2
LJO2_2	Can search, analyse, evaluate and make use of specific information contained in foreign texts of more complex difficulty on topics specified in the module syllabus.	KJ.2023_U	2
LJO2_3	Can, to some extent independently, select the appropriate sources, specific information and tools for learning a foreign language and formulate his/her own opinions in a foreign language.	KJ.2023_U	2

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*
b06	Problem-solving methods	Activating method – staged drama/drama *experiential learning; solving a problem by acting out a role; a.k.a. a role-playing method; role-players interpret their roles in an individual way; the identification with the role is achieved through the activation of the senses, imagination and speech, the stimulation of gesture and movement, etc.; the aim of drama is to experience situations, problems and events mediated by the role; staged drama is a role-playing method enriched with props and stage scenery illustrating a theme*
c02	Demonstration methods	Video show *reproducing a film or video material in its entirety or in fragments in order to illustrate the content taught in class, to submit it to analysis and evaluation or to use it as an exercise in image perception; a film/video can be a work of art, an illustration (also technical illustration) of a content/phenomenon/object, a private record of an action, a media image, etc.*
c03	Demonstration methods	Audio playback / audio drama *preparation and reproduction of sound material (audio recording) in its entirety or in fragments in order to illustrate the content taught in class, to submit it to analysis and evaluation or to use it as a method of sound perception, including the appreciation of a musical piece, an artistic audio drama, an oral presentation of an artistic or scientific text as well as a media text; analysis of the sound material recorded on a carrier with a view to studying a sound-related phenomenon*
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*
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*
d04	Programmed learning methods	Reconstruction / reproduction *proceeding according to the indicated/displayed pattern/model; e.g., the reconstruction of a structure, model, image, etc.*
e07	Practical methods	Simulation *an indirect method; imitating reality in order to gain experience approximating a real one; recreating a real-world situation so that its participant can acquire an experience close to the authentic one; work on “replacement” material*
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*
f02	Methods of self-learning	Individual work with a text *searching for and acquiring new information using textbooks and other written sources (including their digital versions); searching for texts, selecting fragments for analysis/interpretation, using other texts to solve a problem related to the studied issue*

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**
LJO2_lekt	language classes	30	course work	LJO2_1, LJO2_2, LJO2_3	a03, a05, b06, c02, c03, c06, d02, d03, d04, e07, f01, f02

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*	Yes
c01	Preparation for verification of learning outcomes	Determining the stages of task implementation contributing to the verification of learning outcomes *devising a task implementation strategy embracing the division of content, the range of activities, implementation time and/or the method(s) of obtaining the necessary materials and tools, etc.*	Yes
d01	Consulting the results of the verification of learning outcomes	Analysis of the corrective feedback provided by the academic teacher on the results of the verification of learning outcomes *reading through the academic teacher’s comments, assessments and opinions on the implementation of the task aimed at checking the level of the achieved learning outcomes*	Yes
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*	Yes

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.

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

7.	**General information about the module**
Module name	**Foreign language course 3**
Module code	LJO-2023-03
Number of the ECTS credits	3
Language of instruction	
Purpose and description of the content of education	The module aims to develop communicative language competences and to stimulate the acquisition of skills in oral and written language reception and production as well as in language interaction and mediation, taking into account different varieties and registers of the foreign language and the necessary language strategies. The module develops the ability to learn, to independently search for and select information and sources of knowledge, and to work in a team. The main emphasis is placed on strengthening the skills of effective communication with others and the fluent use of foreign language in social, educational or professional contacts in accordance with the criteria laid out in the Common European Framework of Reference for Languages (CEFR).
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)
LJO3_1	Can independently use the acquired knowledge in order to develop and practice listening comprehension, reading, writing and speaking skills in a foreign language at an appropriate level.	KJ.2023_U	3
LJO3_2	Can effectively search, select, synthesize and use information contained in foreign texts of varying levels of difficulty on topics specified in the syllabus of the module.	KJ.2023_U	3
LJO3_3	Can communicate in a foreign language in speech and writing, producing texts on the topics specified in the module syllabus using various communication channels and techniques, can participate in a debate, present his/her own and other people's positions and discuss them in a foreign language.	KJ.2023_U	3

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*
b06	Problem-solving methods	Activating method – staged drama/drama *experiential learning; solving a problem by acting out a role; a.k.a. a role-playing method; role-players interpret their roles in an individual way; the identification with the role is achieved through the activation of the senses, imagination and speech, the stimulation of gesture and movement, etc.; the aim of drama is to experience situations, problems and events mediated by the role; staged drama is a role-playing method enriched with props and stage scenery illustrating a theme*
c02	Demonstration methods	Video show *reproducing a film or video material in its entirety or in fragments in order to illustrate the content taught in class, to submit it to analysis and evaluation or to use it as an exercise in image perception; a film/video can be a work of art, an illustration (also technical illustration) of a content/phenomenon/object, a private record of an action, a media image, etc.*
c03	Demonstration methods	Audio playback / audio drama *preparation and reproduction of sound material (audio recording) in its entirety or in fragments in order to illustrate the content taught in class, to submit it to analysis and evaluation or to use it as a method of sound perception, including the appreciation of a musical piece, an artistic audio drama, an oral presentation of an artistic or scientific text as well as a media text; analysis of the sound material recorded on a carrier with a view to studying a sound-related phenomenon*
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*
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*
d04	Programmed learning methods	Reconstruction / reproduction *proceeding according to the indicated/displayed pattern/model; e.g., the reconstruction of a structure, model, image, etc.*
e07	Practical methods	Simulation *an indirect method; imitating reality in order to gain experience approximating a real one; recreating a real-world situation so that its participant can acquire an experience close to the authentic one; work on “replacement” material*
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*
f02	Methods of self-learning	Individual work with a text *searching for and acquiring new information using textbooks and other written sources (including their digital versions); searching for texts, selecting fragments for analysis/interpretation, using other texts to solve a problem related to the studied issue*

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
LJO3_lekt	language classes	30	course work	LJO3_1, LJO3_2, LJO3_3	a03, a05, b06, c02, c03, c06,

					d02, d03, d04, e07, f01, f02

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*	Yes
c01	Preparation for verification of learning outcomes	Determining the stages of task implementation contributing to the verification of learning outcomes *devising a task implementation strategy embracing the division of content, the range of activities, implementation time and/or the method(s) of obtaining the necessary materials and tools, etc.*	Yes
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
d01	Consulting the results of the verification of learning outcomes	Analysis of the corrective feedback provided by the academic teacher on the results of the verification of learning outcomes *reading through the academic teacher’s comments, assessments and opinions on the implementation of the task aimed at checking the level of the achieved learning outcomes*	Yes
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*	Yes

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.

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

7.	**General information about the module**
Module name	**Foreign language course 4**
Module code	LJO-2023-04
Number of the ECTS credits	3
Language of instruction	
Purpose and description of the content of education	The module aims to develop communicative language competences and to stimulate the acquisition of skills in oral and written language reception and production as well as in language interaction and mediation, taking into account different varieties and registers of the foreign language and the necessary language strategies. The module develops the ability to learn, to independently search for and select information and sources of knowledge, and to work in a team. The main emphasis is placed on strengthening the skills of effective communication with others and the fluent use of foreign language in social, educational or professional contacts in accordance with the criteria laid out in the Common European Framework of Reference for Languages (CEFR).
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)
LJO4_1	Can effectively formulate complex problems in a foreign language, including those related to the field of study in order to practice listening, reading, writing and speaking skills in a foreign language.	KJ.2023_U	3
LJO4_2	Can independently search, analyze, evaluate, select, synthesize and use general and specific information contained in foreign texts of varying complexity.	KJ.2023_U	3
LJO4_3	Has the ability to understand, reproduce and create various types of written and oral texts that require advanced systemic knowledge of a foreign language, including specialist knowledge, using grammatical structures and vocabulary, specified in the syllabus of the module. Can use a foreign language at B2 level or higher (or lower, as specified in the syllabus, depending on the language and the level of the group chosen by a student who already has proof of his/her competence in one foreign language at B2 level) in accordance with the Common European Framework of Reference for Languages (CEFR)) using various communication channels and techniques to the extent appropriate for a given area of knowledge.	KJ.2023_U	3

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*
b06	Problem-solving methods	Activating method – staged drama/drama *experiential learning; solving a problem by acting out a role; a.k.a. a role-playing method; role-players interpret their roles in an individual way; the identification with the role is achieved through the activation of the senses, imagination and speech, the stimulation of gesture and movement, etc.; the aim of drama is to experience situations, problems and events mediated by the role; staged drama is a role-playing method enriched with props and stage scenery illustrating a theme*
c02	Demonstration methods	Video show *reproducing a film or video material in its entirety or in fragments in order to illustrate the content taught in class, to submit it to analysis and evaluation or to use it as an exercise in image perception; a film/video can be a work of art, an illustration (also technical illustration) of a content/phenomenon/object, a private record of an action, a media image, etc.*
c03	Demonstration methods	Audio playback / audio drama *preparation and reproduction of sound material (audio recording) in its entirety or in fragments in order to illustrate the content taught in class, to submit it to analysis and evaluation or to use it as a method of sound perception, including the appreciation of a musical piece, an artistic audio drama, an oral presentation of an artistic or scientific text as well as a media text; analysis of the sound material recorded on a carrier with a view to studying a sound-related phenomenon*
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*
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*
d04	Programmed learning methods	Reconstruction / reproduction *proceeding according to the indicated/displayed pattern/model; e.g., the reconstruction of a structure, model, image, etc.*
e07	Practical methods	Simulation *an indirect method; imitating reality in order to gain experience approximating a real one; recreating a real-world situation so that its participant can acquire an experience close to the authentic one; work on “replacement” material*
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*
f02	Methods of self-learning	Individual work with a text

		searching for and acquiring new information using textbooks and other written sources (including their digital versions); searching for texts, selecting fragments for analysis/interpretation, using other texts to solve a problem related to the studied issue

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
LJO4_lekt	language classes	30	course work	LJO4_1, LJO4_2, LJO4_3	a03, a05, b06, c02, c03, c06, d02, d03, d04, e07, f01, f02

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*	Yes
c01	Preparation for verification of learning outcomes	Determining the stages of task implementation contributing to the verification of learning outcomes *devising a task implementation strategy embracing the division of content, the range of activities, implementation time and/or the method(s) of obtaining the necessary materials and tools, etc.*	Yes
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
d01	Consulting the results of the verification of learning outcomes	Analysis of the corrective feedback provided by the academic teacher on the results of the verification of learning outcomes *reading through the academic teacher's comments, assessments and opinions on the implementation of the task aimed at checking the level of the achieved learning outcomes*	Yes
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*	Yes

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.

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

7.	General information about the module
Module name	**General geology**
Module code	W2-GE-S1-419
Number of the ECTS credits	6
Language of instruction	Polish
Purpose and description of the content of education	Moduł Geologia ogólna ma umożliwić studentowi praktyczne poznanie geologii w terenie. Przede wszystkim wykorzystanie różnych metod badawczych w warunkach terenowych. Opanowanie techniki pomiarów elementów zalegania warstw geologicznych, identyfikacji podstawowych typów skał, minerałów i skamieniałości oraz możliwość identyfikacji podstawowych struktur geologicznych w oparciu o obserwacje terenowe.
List of modules that must be completed before starting this module (if necessary)	[W2-GE-S1-405] zna instrumenty ochrony środowiska przed oddziaływaniem prac geologicznych i górniczych [W2-GE-S1-406] Dynamic Earth 2 [W2-GE-S1-022] Historical geology and stratigraphy [W2-GE-S1-020] Mineralogy I [W2-GE-S1-404] Palaeontology [W2-GE-S1-402] Basics of topography and cartography [W2-GE-S1-013] Selected elements of geography

8. Learning outcomes of the module

Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
W2-GE-S1-419_1	zna podstawowe zasady pracy indywidualnej oraz zespołowej geologa terenowego wraz z zasadami BHP i potrafi je stosować	1GE_U6 1GE_W1 1GE_W5	4 1 2
W2-GE-S1-419_2	zna różne typy odsłonięć geologicznych i potrafi je znaleźć w terenie	1GE_W1	1
W2-GE-S1-419_3	ma umiejętność terenowej identyfikacji skał, minerałów skamieniałości, struktur sedymentacyjnych oraz prostych struktur tektonicznych w oparciu o wiedzę z zajęć audytoryjnych; potrafi analizować informacje zawarte w skale na podstawie cech makroskopowych, składu ziarnowego, mineralogii i śladów paleontologicznych	1GE_U1	3
W2-GE-S1-419_4	potrafi prowadzić notatnik terenowy, wykonywać rysunki obiektów w skali makro, wykonywać proste przekroje geologiczne w oparciu o obserwacje terenowe oraz profilować odsłonięcia skał osadowych; potrafi wykonywać proste pomiary terenowe oraz posługiwać się kompasem geologicznym	1GE_U3	3

W2-GE-S1-419_5	potrafi orientować się w terenie oraz posługiwać się mapą topograficzną i geologiczną; wykazuje się geologiczną wyobraźnią przestrzenną	1GE_U1	1
W2-GE-S1-419_6	jest wrażliwy na piękno przyrody; ma świadomość wartości i unikalności odsłonięć geologicznych, okazów minerałów, skamieniałości i innych obiektów geologicznych oraz oraz potrzeby ich ochrony	1GE_K3 1GE_K6	3 1
W2-GE-S1-419_7	wykazuje aktywną postawę do poznawania rzeczy nowych i wykorzystywania ich dla wzbogacania własnej wiedzy	1GE_K1 1GE_K2	3 3

9. Methods of conducting classes

Code	Category	Name (description)
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*
e06	Practical methods	Observation *also conducted as fieldwork; a method of watching phenomena, objects or people in a systematic/planned way in order to gain knowledge about them; perceptual separation of elements of a model action as an element of learning through imitation; a complex system of cognition based on sensory experiences*
e08	Practical methods	Practice-as-research *also conducted as fieldwork; an activity aimed at confronting the acquired theory with practice through its practical application; students situate themselves in the reality they observe, study and transform through the prism of the theory; the method of practical classes is dominated by the application of knowledge to solving practical tasks*

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-GE-S1-419_CT	field practice	84	course work	W2-GE-S1-419_1, W2-GE-S1-419_2, W2-GE-S1-419_3, W2-GE-S1-419_4, W2-GE-S1-419_5, W2-GE-S1-419_6, W2-GE-S1-419_7	c06, c07, d03, e06, e08

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

Code	Category	Name (description)	Is it part of the BUNA?
a03	Preparation for classes	Developing practical skills	No

		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)	
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
c01	Preparation for verification of learning outcomes	Determining the stages of task implementation contributing to the verification of learning outcomes *devising a task implementation strategy embracing the division of content, the range of activities, implementation time and/or the method(s) of obtaining the necessary materials and tools, etc.*	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
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
d03	Consulting the results of the verification of learning outcomes	Review of internship documentation *an analysis of the portfolio of documentation obtained during internship, including professional internship, and other practical classes and studio sessions, as well as the documentation developed in order to obtain credit for such classes; verification of the description, necessary attachments, opinions and grades before submitting the portfolio for acceptance*	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.

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

7.	General information about the module
Module name	**Geochemistry 1**
Module code	W2-GE-S1-414
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	Moduł Geochemia ma umożliwić studentowi poznanie związków pomiędzy procesami i zjawiskami przyrodniczymi zachodzącymi w geosferze a prawami chemicznymi, właściwościami związków i pierwiastków oraz procesami chemicznymi. Wprowadzane zagadnienia obejmują: Elementy kosmochemii - elementy geochemii nieorganicznej - chemia zewnętrznych i wewnętrznych stref Ziemi; podział pierwiastków ze względu na ich właściwości geochemiczne; charakterystyka wybranych pierwiastków na tle ich położenia w układzie okresowym; obieg pierwiastków w przyrodzie; środowiska geochemiczne. Minerały a związki chemiczne. Podstawy metod analizy geochemicznej - identyfikacja wybranych pierwiastków i związków. Elementy geochemii organicznej: paliwa kopalne – rodzaje, procesy powstawania, utylizacja. Wybrane środowiskowe aspekty wykorzystania surowców geologicznych. W efekcie ukończenia modułu student powinien umieć zdefiniować podstawowe prawa chemiczne, rozumieć związki pomiędzy chemią a naukami o Ziemi, znać wzory chemiczne podstawowych minerałów, scharakteryzować cechy chemiczne podstawowych minerałów i skał na podstawie ich budowy chemicznej, interpretować procesy geologiczne w świetle wiedzy chemicznej, a także samodzielnie prowadzić obliczenia chemiczne mające zastosowanie w naukach o Ziemi. Moduł daje studentowi umiejętność pracy laboratoryjnej oraz zapoznaje go z wybranymi metodami analizy geochemicznej.
List of modules that must be completed before starting this module (if necessary)	[W2-GE-S1-408] Chemistry in Earth sciences

8. Learning outcomes of the module

Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
W2-GE-S1-414_1	zna podstawowe pojęcia z zakresu geochemii	1GE_W1 1GE_W5	2 2
W2-GE-S1-414_2	zna uwarunkowania środowiskowe działalności gospodarczej człowieka	1GE_W2 1GE_W5	3 2
W2-GE-S1-414_3	potrafi wykorzystywać posiadaną wiedzę do formułowania i rozwiązywania prostych i typowych, problemów z geochemii	1GE_U1 1GE_U3 1GE_U7 1GE_W5	2 1 1 3

W2-GE-S1-414_4	potrafi przeprowadzić wybrane eksperymenty i analizy geochemiczne	1GE_U2 1GE_U7	3 1
W2-GE-S1-414_5	potrafi brać udział w debacie – przedstawiać jasno i oceniać obiektywnie różne opinie i stanowiska, szukając argumentów naukowych oraz dyskutować o nich.	1GE_U4	2
W2-GE-S1-414_6	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.	1GE_U8	2
W2-GE-S1-414_7	jest świadomy rzetelności zdobytej wiedzy i konieczności konfrontowania z nią obiegowych opinii pochodzących z różnych źródeł.	1GE_K1	2
W2-GE-S1-414_8	jest świadomy ograniczonego zakresu zdobytej wiedzy i konieczności poszukiwania nowych informacji z wykorzystaniem rzetelnych i pewnych źródeł	1GE_K2	2

9. Methods of conducting classes

Code	Category	Name (description)
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*
b07	Problem-solving methods	Activating methods: a case study *a comprehensive description of a phenomenon connected with the selected discipline; reflecting the reality, presenting the 'what', 'where' and 'how' of the phenomenon, i.e., all of its key aspects to be discussed in class; used as a reproduction, presentation, discussion or diagnosis of factors that shape the phenomenon or interact with it; an in-depth qualitative analysis and evaluation of a selected phenomenon*
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*
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*
e05	Practical methods	Internship *including professional and individual training; gaining skills and experience in real-life conditions, e.g., in the environment, institution or workplace the student is preparing for by following a specific study programme; training in real working conditions*
f03	Methods of self-learning	Conceptual work *a (mainly intellectual) activity carried out independently (or in a selected group) resulting in the creation of a concept, idea or project; creating a plan based on a vision; developing a general outline of a project; producing a simplified sketch of the variant versions of a procedure/product/work*

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-GE-S1-414_L_1	laboratory classes	24	course work	W2-GE-S1-414_3, W2-GE-S1-414_4, W2-GE-S1-414_5, W2-GE-S1-414_6	e01, e05, f03
W2-GE-S1-414_W_1	lecture	12	course work	W2-GE-S1-414_1, W2-GE-S1-414_2, W2-GE-S1-414_4, W2-GE-S1-414_6, W2-GE-S1-414_7, W2-GE-S1-414_8	a05, b01, b07, 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
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
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
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.

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

7.	General information about the module
Module name	**Geochemistry 2**
Module code	W2-GE-S1-052
Number of the ECTS credits	1
Language of instruction	Polish
Purpose and description of the content of education	Moduł Geochemia 2 ma umożliwić studentowi doświadczalne zapoznanie się z metodami analizy geochemicznej skał i minerałów pod kątem rozpoznania ich genezy, utylizacji oraz zagrożeń środowiskowych. W efekcie ukończenia modułu student powinien umieć prowadzić analizę wybranych obiektów geologicznych oraz samodzielnie prowadzić obliczenia chemiczne mające zastosowanie w naukach o Ziemi. Moduł daje studentowi umiejętność pracy laboratoryjnej oraz zapoznaje go z wybranymi metodami analizy geochemicznej. Egzamin obejmuje treści modułów Geochemia 1 i 2
List of modules that must be completed before starting this module (if necessary)	[W2-GE-S1-408] Chemistry in Earth sciences [W2-GE-S1-414] Geochemistry 1

8. Learning outcomes of the module

Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
W2-GE-S1-052_1	zna podstawowe pojęcia z zakresu geochemii	1GE_W1 1GE_W5	3 2
W2-GE-S1-052_2	zna uwarunkowania środowiskowe działalności gospodarczej człowieka	1GE_W2 1GE_W5	3 2
W2-GE-S1-052_3	potrafi wykorzystywać posiadaną wiedzę do formułowania i rozwiązywania prostych i typowych, problemów z geochemii	1GE_U1 1GE_U3 1GE_U7 1GE_W5	1 1 1 3
W2-GE-S1-052_4	potrafi przeprowadzić wybrane eksperymenty i analizy geochemiczne	1GE_U2 1GE_U7	3 3
W2-GE-S1-052_5	potrafi brać udział w debacie – przedstawiać jasno i oceniać obiektywnie różne opinie i stanowiska, szukając argumentów naukowych oraz dyskutować o nich.	1GE_U4	1

W2-GE-S1-052_6	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.	1GE_U8	2
W2-GE-S1-052_7	jest świadomy rzetelności zdobytej wiedzy i konieczności konfrontowania z nią obiegowych opinii pochodzących z różnych źródeł.	1GE_K1	1
W2-GE-S1-052_8	jest świadomy ograniczonego zakresu zdobytej wiedzy i konieczności poszukiwania nowych informacji z wykorzystaniem rzetelnych i pewnych źródeł	1GE_U8	2

9. Methods of conducting classes

Code	Category	Name (description)
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*
e05	Practical methods	Internship *including professional and individual training; gaining skills and experience in real-life conditions, e.g., in the environment, institution or workplace the student is preparing for by following a specific study programme; training in real working conditions*
f03	Methods of self-learning	Conceptual work *a (mainly intellectual) activity carried out independently (or in a selected group) resulting in the creation of a concept, idea or project; creating a plan based on a vision; developing a general outline of a project; producing a simplified sketch of the variant versions of a procedure/product/work*

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-GE-S1-052_L_1	laboratory classes	12	exam	W2-GE-S1-052_1, W2-GE-S1-052_2, W2-GE-S1-052_3, W2-GE-S1-052_4, W2-GE-S1-052_5, W2-GE-S1-052_6, W2-GE-S1-052_7, W2-GE-S1-052_8	e01, e05, f03

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
b01	Consulting the curriculum and the organization	Getting acquainted with the syllabus content	No

	of classes	*reading through the syllabus and getting acquainted with its content*	
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
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
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.

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

7.	**General information about the module**
Module name	**Geoinformation**
Module code	W2-GE-S1-017
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	Głównym celem modułu „Geoinformacja” jest rozwinięcie umiejętności studentów w zakresie wykorzystania nowoczesnych narzędzi i technologii do wyszukiwania, gromadzenia, przetwarzania, analizowania i wizualizacji danych przestrzennych w kontekście badań geologicznych. Tematyka zajęć obejmuje podstawy teoretyczne z zakresu systemów informacji geograficznej (GIS). Studenci uczestniczący w kursie mają okazję zapoznać się z obsługą oprogramowania GIS, funkcjami jego poszczególnych narzędzi, a także ich zastosowaniem w badaniach środowiskowych. Zajęcia przygotowują studentów do efektywnego wykorzystywania technologii geoinformacyjnych w ich przyszłej pracy zawodowej, umożliwiając im prowadzenie nowoczesnych badań geologicznych oraz podejmowanie decyzji opartych na analizie danych przestrzenny
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-GE-S1-017_1	zna wybrane zagadnienia z zakresu Systemów Informacji Geograficznej (GIS) i potrafi je wykorzystać do zgłębiania wiedzy z różnych działów geologii	1GE_W1 1GE_W3	1 1
W2-GE-S1-017_2	potrafi posługiwać się podstawowymi pojęciami z zakresu geoinformacji, rozumie te pojęcia i potrafi je wyjaśnić używając języka potocznego	1GE_U1 1GE_U2	2 2
W2-GE-S1-017_3	posiada umiejętność posługiwania się zamkniętym i wolnym oprogramowaniem komputerowym wykorzystywanym w dziedzinie nauk o Ziemi do analizy i wizualizacji wyników badań terenowych i laboratoryjnych	1GE_U7 1GE_U8	1 1
W2-GE-S1-017_4	przetwarza dane cyfrowe o środowisku do celów jego ochrony i właściwego gospodarowania	1GE_U1 1GE_U3 1GE_U6	2 2 1
W2-GE-S1-017_5	potrafi formułować pytania służące pogłębieniu własnego zrozumienia danego tematu lub uzupełnieniu brakujących elementów rozumowania i wie do kogo je skierować lub gdzie szukać odpowiedzi	1GE_K1 1GE_K2	2 2

W2-GE-S1-017_6	wykazuje aktywną postawę w stosunku do korzystania ze wskazówek prowadzących podczas zajęć laboratoryjnych	1GE_K2 1GE_K5	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*
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*
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*
b07	Problem-solving methods	Activating methods: a case study *a comprehensive description of a phenomenon connected with the selected discipline; reflecting the reality, presenting the 'what', 'where' and 'how' of the phenomenon, i.e., all of its key aspects to be discussed in class; used as a reproduction, presentation, discussion or diagnosis of factors that shape the phenomenon or interact with it; an in-depth qualitative analysis and evaluation of a selected phenomenon*
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*
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*
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*
e03	Practical methods	Creation/production – creative workshop *an activity involving creating/producing a work/artifact based on the individual, creative effort of the participant; the creative workshop is characterized by the presence and openness which make it possible to access the essence of the work/ peculiarity of the artifact at every stage of its creation/production*
f02	Methods of self-learning	Individual work with a text *searching for and acquiring new information using textbooks and other written sources (including their digital versions); searching for texts, selecting fragments for analysis/interpretation, using other texts to solve a problem related to the studied issue*

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-GE-S1-017_L_1	laboratory classes	24	course work	W2-GE-S1-017_3, W2-GE-S1-017_4, W2-GE-S1-017_6	c06, c07, d01, d03, e03, f02
W2-GE-S1-017_W_1	lecture	12	course work	W2-GE-S1-017_1, W2-GE-S1-017_2, W2-GE-S1-017_5	a01, b01, b02, b07

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
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
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
d01	Consulting the results of the verification of learning outcomes	Analysis of the corrective feedback provided by the academic teacher on the results of the verification of learning outcomes *reading through the academic teacher’s comments, assessments and opinions on the implementation of the task aimed at checking the level of the achieved learning outcomes*	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.

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

7.	General information about the module
Module name	**Geological mapping**
Module code	W2-GE-S1-417
Number of the ECTS credits	4
Language of instruction	Polish
Purpose and description of the content of education	Celem modułu Kartowanie geologiczne jest nabycie wiedzy, umiejętności konstruowania oraz sposobu wykorzystania mapy geologicznej, przekrojów geologicznych i profili litostratygraficznych wraz z objaśnieniami, przy zastosowaniu różnych metod kartograficznych. Moduł weryfikuje i uzupełnia wiedzę na temat struktur geologicznych i sposobu ich odwzorowania na płaszczyźnie. Wykonując opracowania podstawowymi metodami stosowanymi w kartografii geologicznej student opanowuje zasady przestrzennego konstruowania modelu budowy geologicznej oraz poznaje zasady prowadzenia prac geologicznych.
List of modules that must be completed before starting this module (if necessary)	[W2-GE-S1-405] zna instrumenty ochrony środowiska przed oddziaływaniem prac geologicznych i górniczych [W2-GE-S1-406] Dynamic Earth 2 [W2-GE-S1-402] Basics of topography and cartography [W2-GE-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-GE-S1-417_1	zna podstawowe pojęcia używane w kartografii; zna rodzaje struktur geologicznych i sposoby ich odwzorowania na powierzchni terenu (planisekcja i intersekcja)	1GE_W1	2
W2-GE-S1-417_2	zna podstawowe metody badawcze, techniki, narzędzia i materiały stosowane w kartografii geologicznej powierzchniowej w celu rozpoznania budowy geologicznej, struktur tektonicznych oraz opisu środowisk depozycji skał	1GE_U1 1GE_U2 1GE_W1	1 1 1
W2-GE-S1-417_3	zna zasady organizacji i prowadzenia prac geologicznych	1GE_U1 1GE_U6 1GE_W1	1 1 1
W2-GE-S1-417_4	potrafi wykorzystać informacje zawarte w różnorodnych opracowaniach kartograficznych, a szczególnie na seryjnych mapach geologicznych; potrafi wykonać elementy dokumentacji geologicznej z zakresu kartografii geologicznej powierzchniowej, redagować proste teksty objaśniające wykorzystując dostępne źródła informacji, umiejętnie prezentuje opracowane wyniki w postaci map tematycznych, przekrojów geologicznych i profili litostratygraficznych	1GE_U1 1GE_U2 1GE_U6	1 1 1
W2-GE-	potrafi realizować zadania wyznaczone przez siebie i innych; potrafi formułować pytania, służące pogłębieniu własnego	1GE_U3	2

S1-417_5	zrozumienia opracowywanego tematu z zakresu kartografii geologicznej powierzchniowej lub uzupełnieniu brakujących elementów rozumowania i wie do kogo je skierować lub gdzie szukać odpowiedzi	1GE_U4 1GE_U6 1GE_W3	1 1 1
W2-GE-S1-417_6	ma świadomość odpowiedzialności za powierzone urządzenia i materiały, za pracę własną; szanuje pracę własną i innych, postępuje zgodnie z zasada-mi BHP	1GE_K6	2

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*
b03	Problem-solving methods	Activating method – educational games *learning content in the guise of a rule- and/or principle-based game; conducted in a deliberately arranged situation based on the description of relevant facts and processes; learners compete with one another within the framework of rules laid down by the academic teacher; varieties include simulation games – involving a simulation of real situations; decision games – based on the decision-making process and the recognition of the consequences of the decisions made (e.g., a decision tree); psychological games – increasing the emotional-volitional component of the participants' attitudes*
b07	Problem-solving methods	Activating methods: a case study *a comprehensive description of a phenomenon connected with the selected discipline; reflecting the reality, presenting the 'what', 'where' and 'how' of the phenomenon, i.e., all of its key aspects to be discussed in class; used as a reproduction, presentation, discussion or diagnosis of factors that shape the phenomenon or interact with it; an in-depth qualitative analysis and evaluation of a selected phenomenon*
e05	Practical methods	Internship *including professional and individual training; gaining skills and experience in real-life conditions, e.g., in the environment, institution or workplace the student is preparing for by following a specific study programme; training in real working conditions*

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-GE-S1-417_L_1	laboratory classes	36	course work	W2-GE-S1-417_1, W2-GE-S1-417_2, W2-GE-S1-417_3, W2-GE-S1-417_4, W2-GE-S1-417_5, W2-GE-S1-417_6	b03, b07, e05
W2-GE-S1-417_W_1	lecture	12	course work	W2-GE-S1-417_1, W2-GE-S1-417_2, W2-GE-S1-417_3, W2-GE-S1-417_4	a01, a03

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
d01	Consulting the results of the verification of learning outcomes	Analysis of the corrective feedback provided by the academic teacher on the results of the verification of learning outcomes *reading through the academic teacher’s comments, assessments and opinions on the implementation of the task aimed at checking the level of the achieved learning outcomes*	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.

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

7.	General information about the module
Module name	**Geological mapping**
Module code	W2-GE-S1-422
Number of the ECTS credits	6
Language of instruction	Polish
Purpose and description of the content of education	Celem modułu Ćwiczenia terenowe – Kartowanie geologiczne jest poznanie zasad prowadzenia prac geologiczno-zdjęciowych oraz zasad sporządzania map geologicznych. Student w praktyczny sposób uczy się pozyskiwania danych w terenie poprzez planowanie marszrut, przeprowadzanie obserwacji geomorfologicznych, przeprowadzanie obserwacji geologicznych, dokumentowanie sond i odsłonięć oraz innych obserwacji. Równocześnie nabywa umiejętność wielopłaszczyznowej analizy zebranych różnorodnych danych (litologicznych, tektonicznych, geomorfologicznych, stratygraficznych, sedymentologicznych) umożliwiających rozpoznanie budowy geologicznej badanego obszaru i opracowanie jej modelu kartograficznego. Na podstawie danych pozyskanych w terenie, ich analizy i interpretacji opracowywane są materiały kartograficzne w formie kompleksowej mapy geologicznej zawierającej mapę geologiczną zakrytą, mapę geologiczną odkrytą, przekroje geologiczne, profile litostratygraficzne, objaśnienia tekstowe, mapę geosozologiczną.
List of modules that must be completed before starting this module (if necessary)	[W2-GE-S1-405] zna instrumenty ochrony środowiska przed oddziaływaniem prac geologicznych i górniczych [W2-GE-S1-406] Dynamic Earth 2 [W2-GE-S1-022] Historical geology and stratigraphy [W2-GE-S1-415] Quaternary geology [W2-GE-S1-039] Geomorphology [W2-GE-S1-020] Mineralogy I [W2-GE-S1-027] Mineralogy II [W2-GE-S1-404] Palaeontology [W2-GE-S1-402] Basics of topography and cartography [W2-GE-S1-032] Sedimentology [W2-GE-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-GE-S1-422_1	zna i stosuje terenowe i kameralne metody tworzenia map geologicznych i innych opracowań kartografii geologicznej	1GE_U2 1GE_U3 1GE_W1	2 1 2
W2-GE-	wykorzystuje szeroką wiedzę geologiczną do identyfikacji zjawisk geologicznych i geomorfologicznych oraz interpretacji	1GE_U1	3

S1-422_2	budowy geologicznej pozwalających na wyznaczanie granic geologicznych	1GE_U2 1GE_W1	3 3
W2-GE-S1-422_3	posiada umiejętność orientacji w terenie i lokalizowania obserwacji geologicznych, również z wykorzystaniem GPS; zna metody komputerowe wspomagające terenowe prace w kartografii geologicznej	1GE_U1 1GE_U2	2 2
W2-GE-S1-422_4	dokumentuje prace terenowe, analizuje i interpretuje zebrane dane, przetwarza je i opracowuje w formie materiałów kartograficznych	1GE_K2 1GE_U1 1GE_U2 1GE_U6 1GE_W1	2 3 3 3 2
W2-GE-S1-422_5	ma umiejętność postrzegania rzeczywistości geologicznej poprzez opracowania kartograficzne	1GE_K1 1GE_U3 1GE_U4 1GE_U8	2 1 2 2
W2-GE-S1-422_6	pracuje zespołowo w terenie oraz podczas kameralnego opracowywania zebranych w terenie danych	1GE_U6 1GE_U7	4 4
W2-GE-S1-422_7	dostrzega i ocenia wpływ działalności antropogenicznej na środowisko przyrodnicze	1GE_K3 1GE_K4 1GE_U3 1GE_W2	3 1 2 4

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*
b08	Problem-solving methods	Activating method – peer learning *learning through the exchange of knowledge in a group/team/pair of students, i.e., in the so-called learning cell; a kind of mutual learning; an approach focused on student activity under the guidance of the person teaching the course; a learning situation where students with a similar level of experience learn from one another*
b09	Problem-solving methods	Activating method – flipped classroom *anticipatory learning; work in class is based on previously studied material indicated by the person teaching the course; preparation outside the classroom serves the purpose of getting familiar with the issues whose knowledge is necessary for participating in the in-class discussion and the training in the related practical skills; the activity is based on the work of students under the guidance of the person teaching the course*

c01	Demonstration methods	Exhibition *preparing an object for public display and displaying it in order to elicit a specific reaction; creating a themed collection of specimens/objects/works to illustrate a specific issue*
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*
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*
e03	Practical methods	Creation/production – creative workshop *an activity involving creating/producing a work/artifact based on the individual, creative effort of the participant; the creative workshop is characterized by the presence and openness which make it possible to access the essence of the work/ peculiarity of the artifact at every stage of its creation/production*
e04	Practical methods	Project scheduling *proceeding according to the steps proposed within a specific methodology for the completion of a task; e.g., identifying project objectives, determining the result, identifying strengths, limitations, opportunities and threats (SWOT), establishing a schedule of activities, assessing resources, establishing an implementation plan; the initial diagnosis; the reassessment of assumptions; the process of preparing the practical implementation of a project*
e05	Practical methods	Internship *including professional and individual training; gaining skills and experience in real-life conditions, e.g., in the environment, institution or workplace the student is preparing for by following a specific study programme; training in real working conditions*
e06	Practical methods	Observation *also conducted as fieldwork; a method of watching phenomena, objects or people in a systematic/planned way in order to gain knowledge about them; perceptual separation of elements of a model action as an element of learning through imitation; a complex system of cognition based on sensory experiences*
e08	Practical methods	Practice-as-research *also conducted as fieldwork; an activity aimed at confronting the acquired theory with practice through its practical application; students situate themselves in the reality they observe, study and transform through the prism of the theory; the method of practical classes is dominated by the application of knowledge to solving practical tasks*
f02	Methods of self-learning	Individual work with a text *searching for and acquiring new information using textbooks and other written sources (including their digital versions); searching for texts, selecting fragments for analysis/interpretation, using other texts to solve a problem related to the studied issue*
f03	Methods of self-learning	Conceptual work

		a (mainly intellectual) activity carried out independently (or in a selected group) resulting in the creation of a concept, idea or project; creating a plan based on a vision; developing a general outline of a project; producing a simplified sketch of the variant versions of a procedure/product/work

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-GE-S1-422_CT_1	field practice	84	course work	W2-GE-S1-422_1, W2-GE-S1-422_2, W2-GE-S1-422_3, W2-GE-S1-422_4, W2-GE-S1-422_5, W2-GE-S1-422_6, W2-GE-S1-422_7	a01, a03, b08, b09, c01, c06, c07, d02, d03, e03, e04, e05, e06, e08, f02, f03

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
c01	Preparation for verification of learning outcomes	Determining the stages of task implementation contributing to the verification of learning outcomes *devising a task implementation strategy embracing the division of content, the range of activities, implementation time and/or the method(s) of obtaining the necessary materials and tools, etc.*	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
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
d01	Consulting the results of the verification of learning outcomes	Analysis of the corrective feedback provided by the academic teacher on the results of the verification of learning outcomes *reading through the academic teacher’s comments, assessments and opinions on the implementation of the task aimed at checking the level of the achieved learning outcomes*	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*	No

		passing grade	
d03	Consulting the results of the verification of learning outcomes	Review of internship documentation *an analysis of the portfolio of documentation obtained during internship, including professional internship, and other practical classes and studio sessions, as well as the documentation developed in order to obtain credit for such classes; verification of the description, necessary attachments, opinions and grades before submitting the portfolio for acceptance*	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.

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

7.	**General information about the module**
Module name	**Geology and economics of mineral deposits 1**
Module code	W2-GE-S1-037
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	Moduł Geologia i ekonomika złóż 1 ma umożliwić studentowi orientowanie się w podstawach wiedzy dotyczącej genezy, klasyfikacji, współczesnego występowania oraz gospodarowania surowcami energetycznymi. Student powinien także nauczyć się rozpoznawać poszczególne typy węgli, torfów oraz bituminów występujące w skorupie ziemskiej na podstawie ich cech makroskopowych. Dzięki temu student powinien uzyskać wiedzę na temat formy, budowy i jakości złóż surowców energetycznych oraz ich znaczenia dla przemysłu i bilansu energetycznego kraju.
List of modules that must be completed before starting this module (if necessary)	[W2-GE-S1-405] zna instrumenty ochrony środowiska przed oddziaływaniem prac geologicznych i górniczych [W2-GE-S1-406] Dynamic Earth 2 [W2-GE-S1-022] Historical geology and stratigraphy [W2-GE-S1-411] Mining 1 [W2-GE-S1-409] Hydrogeology

8. Learning outcomes of the module

Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
W2-GE-S1-037_1	poznanie biochemicznych, geochemicznych i geologicznych aspektów genezy złóż węgla, ropy i gazu	1GE_W1 1GE_W3 1GE_W5	2 1 2
W2-GE-S1-037_2	poznanie podstaw klasyfikacji i parametrów jakości surowców energetycznych oraz rozmieszczenia wybranych złóż na świecie	1GE_W1 1GE_W3 1GE_W5	2 1 2
W2-GE-S1-037_3	zrozumienie znaczenia poszczególnych typów surowców bilansie energetycznym	1GE_W3 1GE_W5	2 2
W2-GE-S1-037_4	umiejętność rozpoznawania typów wybranych kopalin energetycznych	1GE_U1	3
W2-GE-	umiejętność wykorzystywania wiedzy geologicznej w sporządzaniu opracowań o tematyce geologiczno- zasobowej	1GE_U1	2

S1-037_5		1GE_U3 1GE_U6	2 2
W2-GE-S1-037_6	umiejętność formułowania pytań, służących pogłębieniu własnego zrozumienia danego tematu lub uzupełnieniu brakujących elementów rozumowania i wiedza do kogo je skierować lub gdzie szukać odpowiedzi	1GE_K1 1GE_K2 1GE_K4	2 2 2

9. Methods of conducting classes

Code	Category	Name (description)
b07	Problem-solving methods	Activating methods: a case study *a comprehensive description of a phenomenon connected with the selected discipline; reflecting the reality, presenting the 'what', 'where' and 'how' of the phenomenon, i.e., all of its key aspects to be discussed in class; used as a reproduction, presentation, discussion or diagnosis of factors that shape the phenomenon or interact with it; an in-depth qualitative analysis and evaluation of a selected phenomenon*
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*
e08	Practical methods	Practice-as-research *also conducted as fieldwork; an activity aimed at confronting the acquired theory with practice through its practical application; students situate themselves in the reality they observe, study and transform through the prism of the theory; the method of practical classes is dominated by the application of knowledge to solving practical tasks*

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-GE-S1-037_L_1	laboratory classes	18	exam	W2-GE-S1-037_4, W2-GE-S1-037_5, W2-GE-S1-037_6	c07, e08
W2-GE-S1-037_W_1	lecture	18	exam	W2-GE-S1-037_1, W2-GE-S1-037_2, W2-GE-S1-037_3	b07

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*	No

		elements of the curriculum (as preparation for class participation)	

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.

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

7.	**General information about the module**
Module name	**Geology of deposits - field exercises**
Module code	W2-GE-S1-061
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	1.Przedstawienie zasad BHP obowiązujących podczas ćwiczeń terenowych, ze szczególnym uwzględnieniem zasad bezpieczeństwa na terenie zakładów górniczych i w odsłonięciach. 2.Zapoznanie z budową geologiczną i praktyczną orientacją w zakresie sposobów zagospodarowania wybranych surowców: skalnych (np. dolomity rejonu Siewierza, piaski podsadzkowe i formierskie północno-wschodniej części GZW, skały magmowe i metamorficzne rejonu Dolnego Śląska), metalicznych (np. stratoidalnych złóż rud cynku i ołowiu rejonu olkuskiego, polimetalicznych złóż formacji porfirowo-miedziowej – Myszków, złoża miedzi monokliny przedsudeckiej), energetycznych (pokładowe złoża węgla kamiennego wschodniej części GZW) oraz towarzyszących im złóż metanu (południowa część GZW) na przykładzie konkretnych złóż w zależności od miejsca realizacji ćwiczeń terenowych. 3.Nauczenie prowadzenia samodzielnych obserwacji geologicznych w terenie – rozróżnianie typów mineralizacji, form i tekstur złożowych. 4.Zapoznanie studentów z różnymi formami dokumentowania złóż (profilowanie rdzeni wiertniczych, kartowanie wyrobisk podziemnych, opróbowanie złoża i określanie jakości kopaliny). 5.Przedstawienie informacji dotyczących form gospodarowania zasobami (rodzaje i treść sporządzanych dokumentów) oraz systemów eksploatacji (ścianowy, komorowo-filarowy, odkrywkowy, otworowy). Zagadnienia problematyki ekonomicznej i prawnej oraz formy oddziaływania górnictwa na środowisko naturalne (deformacje powierzchni terenu, zaburzenia stosunków wodnych, składowanie odpadów).
List of modules that must be completed before starting this module (if necessary)	[W2-GE-S1-037] Geology and economics of mineral deposits 1 [W2-GE-S1-043] Economic geology 2 [W2-GE-S1-020] Mineralogy I [W2-GE-S1-027] Mineralogy II [W2-GE-S1-034] Petrology 1

8. Learning outcomes of the module

Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
W2-GE-S1-061_1	potrafi rozpoznać w odsłonięciu lub rdzeniu wiertniczym rudę danego metalu lub inną kopalinę użyteczną i wskazać jakie minerały tej kopaliny są wykorzystywane w gospodarce.	1GE_K1 1GE_U1	1 2
W2-GE-S1-061_2	potrafi opisać bazę zasobową danego regionu i wskazać jakie znaczenie dla gospodarki miało dane złoże w ujęciu historycznym oraz obecnie.	1GE_K3	1

		1GE_U3	1
W2-GE-S1-061_3	potrafi dokonać podstawowych, terenowych obserwacji geologicznych niezbędnych do wykonania prostego opisu złoża.	1GE_U2 1GE_U6	2 1
W2-GE-S1-061_4	potrafi opisać budowę geologiczną i zna rozmieszczenie najważniejszych złóż w Sudetach, G. Świętokrzyskich i regionie śląsko-krakowskim.	1GE_K4 1GE_U1 1GE_W2	1 1 2

9. Methods of conducting classes

Code	Category	Name (description)
a02	Lecture methods / expository methods	Monographic lecture *an exhaustive discussion of one issue, usually related to the research interests of the person teaching the course or a thorough presentation of one selected issue*
b05	Problem-solving methods	Activating method – seminar / proseminar *a seminar method; usually an oral presentation of a previously studied/diagnosed problem delivered on a forum; it aims at provoking a discussion concerning the results of research work; a type of conference, course or training session modelled on seminar classes*
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*
e08	Practical methods	Practice-as-research *also conducted as fieldwork; an activity aimed at confronting the acquired theory with practice through its practical application; students situate themselves in the reality they observe, study and transform through the prism of the theory; the method of practical classes is dominated by the application of knowledge to solving practical tasks*

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-GE-S1-017_CT	field practice	36	course work	W2-GE-S1-061_1, W2-GE-S1-061_2, W2-GE-S1-061_3, W2-GE-S1-061_4	a02, b05, e01, e08

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

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.

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

7.	General information about the module
Module name	**Geomorphology**
Module code	W2-GE-S1-039
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	Celem modułu „Geomorfologia” jest poznanie głównych form rzeźby terenu oraz ich genezy i podstawowych procesów, które je ukształtowały. Treści programowe obejmują morfogenetyczną działalność sił zewnętrznych w obrębie kontynentów, głównie rzeźbę fluwialną i fluwialno-denudacyjną, morfogenetyczną działalność czynników denudacyjnych (procesy stokowe), rzeźbę eoliczną. Po osiągnięciu efektów kształcenia modułu student potrafi samodzielnie rozpoznawać i charakteryzować wybrane formy rzeźby terenu. Rozumie również ich związek z procesami geologicznymi i cechami budowy geologicznej, zwłaszcza z litologią i tektoniką. Potrafi zrekonstruować różne środowiska (np. fluwialne) i przeprowadzić ich analizę na podstawie różnorodnych materiałów źródłowych (mapy, bazy danych, przekroje geologiczne, cyfrowe modele terenu, literatura). Zdobywa wiedzę umożliwiającą pogłębienie wyobraźni przestrzennej.
List of modules that must be completed before starting this module (if necessary)	[W2-GE-S1-405] zna instrumenty ochrony środowiska przed oddziaływaniem prac geologicznych i górniczych [W2-GE-S1-406] Dynamic Earth 2 [W2-GE-S1-032] Sedimentology

8. Learning outcomes of the module

Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
W2-GE-S1-039_1	zna podstawowe pojęcia z zakresu geomorfologii i pogłębia wiedzę w zakresie tej problematyki	1GE_U8 1GE_W1 1GE_W5	2 2 2
W2-GE-S1-039_2	potrafi sklasyfikować formy geomorfologiczne ze względu na genezę. Rozumie procesy, które doprowadziły do ich powstania.	1GE_U1 1GE_W1 1GE_W5	3 2 2
W2-GE-S1-039_3	potrafi sklasyfikować procesy stokowe i ich efekty. Potrafi rozpoznać i scharakteryzować osuwisko. Zna przyczyny powstawania osuwisk. Wie, które obszary w Polsce są szczególnie narażone na powstawanie osuwisk. Zna bazę osuwisk SOPO	1GE_K1 1GE_K2 1GE_U1 1GE_U3 1GE_U8	1 2 3 2 3

		1GE_W5	2
W2-GE-S1-039_4	rozumie zależność między rzeźbą terenu a budową geologiczną (litologia, tektonika)	1GE_U1 1GE_U8	3 2
W2-GE-S1-039_5	potrafi wykonać analizę rozwoju rzeźby terenu na podstawie przekroju geologicznego	1GE_U1 1GE_U7	3 2
W2-GE-S1-039_6	wykazuje aktywną postawę do poznawania rzeczy nowych i wykorzystywania ich dla wzbogacania własnej wiedzy; krytycznego i twórczego myślenia oraz otwartości na poglądy innych	1GE_K2 1GE_K4 1GE_K6 1GE_U7 1GE_U8	2 1 1 2 3

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*
a02	Lecture methods / expository methods	Monographic lecture *an exhaustive discussion of one issue, usually related to the research interests of the person teaching the course or a thorough presentation of one selected issue*
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*
b04	Problem-solving methods	Activating method – discussion / debate *an exchange of views supported by substantive arguments leading to a clash of different views, a compromise or the identification of common positions; it proceeds according to previously agreed-upon rules regarding the time, manner and turn-taking as well as the principles of civil discourse; a discussion is not a competition but aims at finding the best solutions or presenting different points of view; its varieties include brainstorming, Oxford-style debate, panel discussion, decision tree, conference discussion; a debate is an orderly dispute between supporters and opponents of a viewpoint, usually specialists in the field or pre-selected representatives of a group dealing with a common problem*
b07	Problem-solving methods	Activating methods: a case study *a comprehensive description of a phenomenon connected with the selected discipline; reflecting the reality, presenting the 'what', 'where' and 'how' of the phenomenon, i.e., all of its key aspects to be discussed in class; used as a reproduction, presentation, discussion or diagnosis of factors that shape the phenomenon or interact with it; an in-depth qualitative analysis and evaluation of a selected phenomenon*
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
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*

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-GE-S1-039_L_1	laboratory classes	12	course work	W2-GE-S1-039_2, W2-GE-S1-039_3, W2-GE-S1-039_4, W2-GE-S1-039_5, W2-GE-S1-039_6	b04, b07, c07, d01, d03
W2-GE-S1-039_W_1	lecture	12	course work	W2-GE-S1-039_1, W2-GE-S1-039_2, W2-GE-S1-039_3, W2-GE-S1-039_4	a01, a02, b01

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
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
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

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.

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

7.	General information about the module
Module name	**Historical geology and stratigraphy**
Module code	W2-GE-S1-022
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	Moduł Geologia historyczna i stratygrafia ma umożliwić studentowi poznanie terminologii, procesów i metod badawczych w zakresie geologicznych dziejów Ziemi. Nacisk jest położony na umiejętność opisu głównych elementów historii lito- i biosfery w odniesieniu do obszaru Polski i regionu górnośląskiego w szczególności. Student ma możliwość poznania głównych wydarzeń ewolucyjnych, w tym wielkich katastrof ekologicznych w fanerozoiku. Nabyta wiedza powinna umożliwić datowanie metodami biostratygraficznymi (skamieniałościami przewodnimi) podstawowych wydzieleń stratygraficznych w Polsce. Student nabywa świadomość wielkości czasu geologicznego, istnienia na tym tle zjawiska ewolucji organizmów oraz procesów i zdarzeń zmieniających środowisko przyrodnicze na powierzchni Ziemi.
List of modules that must be completed before starting this module (if necessary)	[W2-GE-S1-405] zna instrumenty ochrony środowiska przed oddziaływaniem prac geologicznych i górniczych [W2-GE-S1-404] Palaeontology

8. Learning outcomes of the module

Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
W2-GE-S1-022_1	zna podstawowe pojęcia i metody z zakresu badań dziejów Ziemi, podstawowy podział dziejów Ziemi w formie tabeli stratygraficznej oraz podstawowe grupy skamieniałości przewodnich; zna hipotezy początków życia na Ziemi oraz główne etapy jego ewolucji w fanerozoiku	1GE_W3 1GE_W5	3 3
W2-GE-S1-022_2	rozumie istnienie w przeszłości procesów, zjawisk, zdarzeń wpływających na zmianę środowiska przyrodniczego na Ziemi	1GE_U1 1GE_U3	3 1
W2-GE-S1-022_3	potrafi rozpoznawać podstawowe elementy zmian paleogeograficznych i tektonicznych w historii Ziemi, ze szczególnym zwróceniem uwagi na zapis na obszarze Polski	1GE_U1 1GE_U3 1GE_U8	3 2 2
W2-GE-S1-022_4	potrafi graficznie przedstawić profil stratygraficzny oraz przeprowadzić samodzielną korelację lito- i biostratygraficzną	1GE_U1	1
W2-GE-S1-022_5	wykazuje aktywną postawę do poznawania rzeczy nowych i wykorzystywania ich dla wzbogacania własnej wiedzy; stara się uczyć samodzielnie w oparciu o dostępną literaturę, krytycznie oceniając stan własnej wiedzy	1GE_K1 1GE_K2	3 3

W2-GE-S1-022_6	ma świadomość walorów poznawczych odsłonięć geologicznych, ich unikatowości i potrzeby ich ochrony	1GE_K3 1GE_K6	2 1

9. Methods of conducting classes

Code	Category	Name (description)
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*

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-GE-S1-022_L_1	laboratory classes	24	course work	W2-GE-S1-022_1, W2-GE-S1-022_3, W2-GE-S1-022_4, W2-GE-S1-022_5	c07, d03
W2-GE-S1-022_W_1	lecture	24	course work	W2-GE-S1-022_1, W2-GE-S1-022_2, W2-GE-S1-022_3, W2-GE-S1-022_5, W2-GE-S1-022_6	c07

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

Code	Category	Name (description)	Is it part of the BUNA?
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
b03	Consulting the curriculum and the organization of classes	Consulting the schedule *getting acquainted with the class schedule, possibly in the presence of the year tutor, in order to optimize participation in classes, including those supplementary to the core subjects listed in the pursued study programme*	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
c03	Preparation for verification of learning outcomes	Implementation of an individual or group assignment necessary for course/phase/ examination completion	No

		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	

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.

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

7.	**General information about the module**
Module name	**Hydrogeology**
Module code	W2-GE-S1-409
Number of the ECTS credits	4
Language of instruction	Polish
Purpose and description of the content of education	W ramach realizacji modułu Hydrogeologia student zapoznaje się z problematyką wód podziemnych, ich występowaniem, własnościami fizyko-chemicznymi, podstawowymi parametrami hydrogeologicznymi, wzajemnymi relacjami pomiędzy wodami powierzchniowymi i podziemnymi, prawami rządzącymi ruchem wód podziemnych, podstawowymi sposobami kartograficznego przedstawiania występowania wód podziemnych oraz szacowania ich zasobów a także podstaw ich ochrony. Student poznaje także różne metody pomiaru natężenia przepływu, badania parametrów hydrogeologicznych i interpretacji wyników pomiarów hydrogeologicznych. Nabyte umiejętności pozwolą mu na wykonywanie podstawowych czynności hydrogeologa w geologii, górnictwie, zarządzaniu środowiskiem, administracji geologicznej, kartografii i budownictwie.
List of modules that must be completed before starting this module (if necessary)	[W2-GE-S1-408] Chemistry in Earth sciences [W2-GE-S1-405] zna instrumenty ochrony środowiska przed oddziaływaniem prac geologicznych i górniczych [W2-GE-S1-406] Dynamic Earth 2

8. Learning outcomes of the module

Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
W2-GE-S1-409_1	zna i rozumie podstawowe pojęcia związane z hydrogeologią oraz obiegiem wody w przyrodzie	1GE_W1	1
W2-GE-S1-409_2	zna podstawowe własności hydrogeologiczne skał	1GE_W1	1
W2-GE-S1-409_3	zna prawa rządzące ruchem wód podziemnych	1GE_W1	1
W2-GE-S1-409_4	potrafi wykonać prostą mapę hydrogeologiczną i przekrój hydrogeologiczny	1GE_K1 1GE_K6 1GE_U1 1GE_U2	1 1 1 2
W2-GE-S1-409_5	posiada umiejętność podstawowej interpretacji wyników badań składu chemicznego wody	1GE_U1 1GE_U6	1 1

		1GE_U7 1GE_U8	1 1
W2-GE-S1-409_6	zna podstawy ujmowania wód podziemnych	1GE_U2 1GE_W1 1GE_W2	1 1 1
W2-GE-S1-409_7	zna różne metody pomiaru natężenia przepływu wody w ciekach powierzchniowych i potrafi je zastosować do obliczeń bilansu hydrogeologicznego	1GE_K1 1GE_U2 1GE_W1	1 1 1
W2-GE-S1-409_8	zna podstawowe zagadnienia związane z zasobami wód podziemnych i ich zagrożeniem antropogenicznym	1GE_W1 1GE_W3 1GE_W4	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*
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*
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*
e08	Practical methods	Practice-as-research *also conducted as fieldwork; an activity aimed at confronting the acquired theory with practice through its practical application; students situate themselves in the reality they observe, study and transform through the prism of the theory; the method of practical classes is dominated by the application of knowledge to solving practical tasks*

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-GE-S1-409_L	laboratory classes	36	exam	W2-GE-S1-409_4, W2-GE-	c06, e01, e08

_1				S1-409_5, W2-GE-S1-409_6, W2-GE-S1-409_7	
W2-GE-S1-409_W_1	lecture	12	exam	W2-GE-S1-409_1, W2-GE-S1-409_2, W2-GE-S1-409_3, W2-GE-S1-409_6, W2-GE-S1-409_7, W2-GE-S1-409_8	a01, a03

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
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

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.

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

7.	**General information about the module**
Module name	**Hydrogeology, Engineering Geology and Geological Drilling Service – Field Trip**
Module code	W2-GE-S1-420
Number of the ECTS credits	4
Language of instruction	Polish
Purpose and description of the content of education	Po zrealizowaniu modułu student nabędzie umiejętności projektowania studni, kartowania hydrogeologicznego, polowych badań hydrogeologicznych i geologiczno-inżynierskich. Zapozna się z zadaniami geologa na wierceniach, skonfrontuje teoretyczną wiedzę z zakresu wiertnictwa i górnictwa z praktycznymi aspektami tych modułów. Obserwując pracę geologa w terenie przekona się czy jest to praca odpowiadająca jego możliwościom i aspiracjom.
List of modules that must be completed before starting this module (if necessary)	[W2-GE-S1-412] Applied Geology 1 [W2-GE-S1-411] Mining 1 [W2-GE-S1-409] Hydrogeology [W2-GE-S1-413] Drilling 1

8. Learning outcomes of the module

Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
W2-GE-S1-420_1	zapoznaje się z systemami odwadniania kopalń odkrywkowych oraz konstrukcjami studni odwadniających i eksploatacyjnych	1GE_K2 1GE_U1 1GE_W1 1GE_W3	2 1 1 1
W2-GE-S1-420_2	realizuje w terenie badania monitoringowe wód podziemnych oraz pomiary hydrometryczne w ciekach powierzchniowych	1GE_K1 1GE_U2 1GE_U6 1GE_U7	1 2 1 1
W2-GE-S1-420_3	stosuje podstawowe polowe metody oznaczanie współczynnika filtracji strefy aeracji i saturacji	1GE_U1 1GE_U2 1GE_U8	1 1 1
W2-GE-S1-420_4	posiada podstawową wiedzę w zakresie kartowania hydrogeologicznego	1GE_K6	1

		1GE_U1 1GE_W1	1 1
W2-GE-S1-420_5	rozpoznaje podstawowe typy wiertnic i sprzęt specjalistyczny	1GE_K5 1GE_U1 1GE_U8	2 2 2
W2-GE-S1-420_6	dobiera konstrukcję otworu do danych warunków geologicznych i hydrogeologicznych	1GE_K5 1GE_U1 1GE_U6	2 2 1
W2-GE-S1-420_7	zna obowiązki geologa w obsłudze wierceń	1GE_K2 1GE_K3 1GE_K5 1GE_K6 1GE_U2 1GE_U3 1GE_U6 1GE_U7 1GE_U8	1 1 2 3 3 1 2 3 2

9. Methods of conducting classes

Code	Category	Name (description)
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*
b04	Problem-solving methods	Activating method – discussion / debate *an exchange of views supported by substantive arguments leading to a clash of different views, a compromise or the identification of common positions; it proceeds according to previously agreed-upon rules regarding the time, manner and turn-taking as well as the principles of civil discourse; a discussion is not a competition but aims at finding the best solutions or presenting different points of view; its varieties include brainstorming, Oxford-style debate, panel discussion, decision tree, conference discussion; a debate is an orderly dispute between supporters and opponents of a viewpoint, usually specialists in the field or pre-selected representatives of a group dealing with a common problem*
b07	Problem-solving methods	Activating methods: a case study *a comprehensive description of a phenomenon connected with the selected discipline; reflecting the reality, presenting the 'what', 'where' and 'how' of the phenomenon, i.e., all of its key aspects to be discussed in class; used as a reproduction, presentation, discussion or diagnosis of factors that shape the phenomenon or interact with it; an in-depth qualitative analysis and evaluation of a selected phenomenon*
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*

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*
e04	Practical methods	Project scheduling *proceeding according to the steps proposed within a specific methodology for the completion of a task; e.g., identifying project objectives, determining the result, identifying strengths, limitations, opportunities and threats (SWOT), establishing a schedule of activities, assessing resources, establishing an implementation plan; the initial diagnosis; the reassessment of assumptions; the process of preparing the practical implementation of a project*
e05	Practical methods	Internship *including professional and individual training; gaining skills and experience in real-life conditions, e.g., in the environment, institution or workplace the student is preparing for by following a specific study programme; training in real working conditions*
e06	Practical methods	Observation *also conducted as fieldwork; a method of watching phenomena, objects or people in a systematic/planned way in order to gain knowledge about them; perceptual separation of elements of a model action as an element of learning through imitation; a complex system of cognition based on sensory experiences*

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-GE-S1-015_CT	field practice	60	course work	W2-GE-S1-420_1, W2-GE-S1-420_2, W2-GE-S1-420_3, W2-GE-S1-420_4, W2-GE-S1-420_5, W2-GE-S1-420_6, W2-GE-S1-420_7	a05, b04, b07, c06, d03, e01, e04, e05, e06

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
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
c03	Preparation for verification of learning outcomes	Implementation of an individual or group assignment necessary for course/phase/	No

		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*	
d01	Consulting the results of the verification of learning outcomes	Analysis of the corrective feedback provided by the academic teacher on the results of the verification of learning outcomes *reading through the academic teacher's comments, assessments and opinions on the implementation of the task aimed at checking the level of the achieved learning outcomes*	No
d03	Consulting the results of the verification of learning outcomes	Review of internship documentation *an analysis of the portfolio of documentation obtained during internship, including professional internship, and other practical classes and studio sessions, as well as the documentation developed in order to obtain credit for such classes; verification of the description, necessary attachments, opinions and grades before submitting the portfolio for acceptance*	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.

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

7.	General information about the module
Module name	**Information systems in geology 1: AutoCAD or GIS or GeoStar or FEFLOW**
Module code	W2-GE-S1-026
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	Moduł Systemy informacyjne w geologii 1 umożliwia osobom studiującym samodzielny wybór oprogramowania stosowanego w geologii, które chcą poznać po pierwszych zajęciach na których zostaną zaprezentowane cztery propozycje. Są to programy komputerowe, które znajdują szerokie zastosowanie na światowym i/lub krajowym rynku geologicznym. Studenci mogą wybrać maksymalnie 2 programy komputerowe do nauki. Na kolejnych zajęciach studenci zapoznają się z wybranym programem poznając interfejs programu i podstawowe funkcje i narzędzia. Wraz z kolejnymi zajęciami student poznaje nowe paski narzędziowe/moduły programu, które w konsekwencji umożliwiają tworzenie wybranych załączników graficznych niezbędnych przy wykonywaniu wybranych dokumentacji hydrogeologicznych i geologiczno-inżynierskich określonych w rozporządzeniu Ministra Środowiska w sprawie dokumentacji hydrogeologicznej i dokumentacji geologiczno-inżynierskiej. Po osiągnięciu efektów kształcenia modułu student powinien dostrzegać, przydatność wybranego programu w praktyce inżyniera geologa, zauważać obszary jego potencjalnego wykorzystania i potrafić swobodnie poruszać się w podstawowych funkcjach program oraz nabrać umiejętności do dalszego samorozwoju z wykorzystaniem oprogramowania, które poznawał na zajęciach.
List of modules that must be completed before starting this module (if necessary)	[W2-GE-S1-017] Geoinformation [W2-GE-S1-402] Basics of topography and cartography [W2-GE-S1-021] Sourcing of geological informaction

8. Learning outcomes of the module

Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
W2-GE-S1-026_1	zna obszary w geologii w których znajdują zastosowanie programy komputerowe takie jak AutoCAD, GIS, GeoStar i FEFLOW	1GE_K2 1GE_U8 1GE_W2	1 1 1
W2-GE-S1-026_2	ma podstawową wiedzę teoretyczną i praktyczną o wybranym programie komputerowym	1GE_K1 1GE_U1 1GE_U2	1 1 1
W2-GE-S1-026_3	stosuje płynnie wybrane funkcje programu, zna ich przydatność do prezentacji danych geologicznych	1GE_U1 1GE_U2	1 2
W2-GE-	potrafi z pomocą oprogramowania wykonać wybrane załączniki graficzne, które są określone w rozporządzeniu Ministra		

S1-026_4	Środowiska w sprawie dokumentacji hydrogeologicznej i dokumentacji geologiczno-inżynierskiej	1GE_U1 1GE_U2 1GE_W3	1 3 1
W2-GE-S1-026_5	potrafi krytycznie interpretować przygotowane wizualizacje graficzne przedstawiające budowę geologiczną, warunki hydrogeologiczne lub inne wybrane zagadnienia	1GE_K1 1GE_K2 1GE_U1 1GE_U2	1 1 1 4
W2-GE-S1-026_6	potrafi analizować i przetwarzać geologiczne dane przestrzenne z badań terenowych i w sposób czytelny je zeschematyzować i zwizualizować	1GE_K2 1GE_U1 1GE_U2 1GE_U3	1 2 3 2
W2-GE-S1-026_7	podczas tworzenia załączników graficznych wykazuje się przedsiębiorczą kreatywnością i samodzielnością oraz potrafi syntetycznie przedstawić wyniki z badań terenowych	1GE_K2 1GE_K5 1GE_U2 1GE_U3	1 1 1 1

9. Methods of conducting classes

Code	Category	Name (description)
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*
d04	Programmed learning methods	Reconstruction / reproduction *proceeding according to the indicated/displayed pattern/model; e.g., the reconstruction of a structure, model, image, etc.*
f03	Methods of self-learning	Conceptual work *a (mainly intellectual) activity carried out independently (or in a selected group) resulting in the creation of a concept, idea or project; creating a plan based on a vision; developing a general outline of a project; producing a simplified sketch of the variant versions of a procedure/product/work*

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-GE-S1-026_L_1	laboratory classes	36	course work	W2-GE-S1-026_1, W2-GE-S1-026_2, W2-GE-S1-026_3,	c07, d01, d04, f03

				W2-GE-S1-026_4, W2-GE-S1-026_5, W2-GE-S1-026_6, W2-GE-S1-026_7	

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
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
c01	Preparation for verification of learning outcomes	Determining the stages of task implementation contributing to the verification of learning outcomes *devising a task implementation strategy embracing the division of content, the range of activities, implementation time and/or the method(s) of obtaining the necessary materials and tools, etc.*	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
d01	Consulting the results of the verification of learning outcomes	Analysis of the corrective feedback provided by the academic teacher on the results of the verification of learning outcomes *reading through the academic teacher's comments, assessments and opinions on the implementation of the task aimed at checking the level of the achieved learning outcomes*	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.

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

7.	General information about the module
Module name	**Information systems in geology 2: AutoCAD or GIS or GeoStar or FEFLOW**
Module code	W2-GE-S1-035
Number of the ECTS credits	1
Language of instruction	Polish
Purpose and description of the content of education	Moduł Systemy informacyjne w geologii 2 umożliwia osobom studiującym samodzielny wybór oprogramowania stosowanego w geologii w oparciu o wcześniejsze doświadczenia zdobyte na module systemy informacyjne w geologii 1. Studenci mają możliwość wyboru w ramach tego modułu nowego programu stosowanego w naukach geologicznych i przyrodniczych lub kontynuować naukę programu rozpoczętego w module systemy informacyjne w geologii 1. rozpoczynając pracę z użyciem bardziej zaawansowanych opcji, funkcji i narzędzi programu w celu pogłębionych analiz. Studenci wybierają program z następujących AutoCAD, GIS, GeoStar, FEFLOW lub inny, który znajduje powszechne zastosowanie w geologii inżynierskiej, hydrogeologii, geofizyce, kartografii geologicznej, geologii złóż i innych działach geologii, a jego licencje edukacyjne są dostępne w Instytucie. Po dokonaniu wyboru studenci na zajęciach będą uczyć się wykorzystania danego programu poprzez praktyczne zapoznanie się z poszczególnymi funkcjami programu w oparciu o praktyczne przykłady takie jak np. wykonywanie modeli 3D struktur geologicznych, wykonywanie map zagrożeń/map przydatności obszarów itp. Wykonanie poszczególnych zadań będzie wiązało się także z nauką przygotowania danych wejściowych do programu oraz sprawdzania ich poprawności. Celem modułu jest zdobycie praktycznych umiejętności, które pomogą osobom studiującym geologię przyśpieszyć prace związane z zwizualizowaniem i odpowiednim graficznym przedstawianiem wybranych zagadnień związanych ze zjawiskami i procesami geologicznymi. Nabyte praktyczne umiejętności mają prowadzi do zwiększenia atrakcyjności absolwenta geologii na rynku pracy w zawodzie geologa lub innym pokrewnym zawodzie związanym z naukami przyrodniczymi.
List of modules that must be completed before starting this module (if necessary)	[W2-GE-S1-017] Geoinformation [W2-GE-S1-402] Basics of topography and cartography [W2-GE-S1-021] Sourcing of geological informaction [W2-GE-S1-026] Information systems in geology 1: AutoCAD or GIS or GeoStar or FEFLOW

8. Learning outcomes of the module

Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
W2-GE-S1-035_1	zna obszary w geologii w których znajdują zastosowanie programy komputerowe takie jak np AutoCAD, GIS, GeoStar i FEFLOW, zna ich zalety i ograniczenia.	1GE_K2 1GE_U8 1GE_W2	1 1 1
W2-GE-S1-035_2	ma podstawową wiedzę teoretyczną i praktyczną o wybranym nowym programie komputerowym lub rozbudowaną wiedzę na temat możliwości programu którego nauka jest kontynuowana	1GE_K1 1GE_U1	1 1

		1GE_U2	1
W2-GE-S1-035_3	stosuje płynnie wybrane funkcje programu, zna ich przydatność do prawidłowej i efektywnej prezentacji danych geologicznych	1GE_U1 1GE_U2	1 2
W2-GE-S1-035_4	potrafi z pomocą oprogramowania wykonać wybrane załączniki graficzne, które są określone w rozporządzeniu Ministra Środowiska w sprawie dokumentacji hydrogeologicznej i dokumentacji geologiczno-inżynierskiej	1GE_U1 1GE_U2 1GE_W3	1 3 1
W2-GE-S1-035_5	potrafi krytycznie interpretować przygotowane wizualizacje graficzne przedstawiające budowę geologiczną, warunki hydrogeologiczne lub inne wybrane zagadnienia	1GE_K1 1GE_K2 1GE_U1 1GE_U2	1 1 1 4
W2-GE-S1-035_6	potrafi analizować i przetwarzać geologiczne dane przestrzenne z badań terenowych i w odpowiedni sposób je przetworzyć i użyć jako dane wejściowe do programu	1GE_K2 1GE_U1 1GE_U2 1GE_U3	1 2 3 2
W2-GE-S1-035_7	podczas tworzenia załączników graficznych wykazuje się przedsiębiorczą kreatywnością i samodzielnością oraz potrafi syntetycznie przedstawić wyniki z badań terenowych	1GE_K2 1GE_K5 1GE_U2 1GE_U3	1 1 1 1

9. Methods of conducting classes

Code	Category	Name (description)
b07	Problem-solving methods	Activating methods: a case study *a comprehensive description of a phenomenon connected with the selected discipline; reflecting the reality, presenting the 'what', 'where' and 'how' of the phenomenon, i.e., all of its key aspects to be discussed in class; used as a reproduction, presentation, discussion or diagnosis of factors that shape the phenomenon or interact with it; an in-depth qualitative analysis and evaluation of a selected phenomenon*
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*
d04	Programmed learning methods	Reconstruction / reproduction *proceeding according to the indicated/displayed pattern/model; e.g., the reconstruction of a structure, model, image, etc.*
f03	Methods of self-learning	Conceptual work *a (mainly intellectual) activity carried out independently (or in a selected group) resulting in the creation of a concept, idea or project; creating a plan based on a vision; developing a general outline of a project; producing a simplified sketch of the variant versions of a procedure/product/work*

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-GE-S1-035_L_1	laboratory classes	24	course work	W2-GE-S1-035_1, W2-GE-S1-035_2, W2-GE-S1-035_3, W2-GE-S1-035_4, W2-GE-S1-035_5, W2-GE-S1-035_6, W2-GE-S1-035_7	b07, d01, d04, f03

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
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
c01	Preparation for verification of learning outcomes	Determining the stages of task implementation contributing to the verification of learning outcomes *devising a task implementation strategy embracing the division of content, the range of activities, implementation time and/or the method(s) of obtaining the necessary materials and tools, etc.*	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
d01	Consulting the results of the verification of learning outcomes	Analysis of the corrective feedback provided by the academic teacher on the results of the verification of learning outcomes *reading through the academic teacher’s comments, assessments and opinions on the implementation of the task aimed at checking the level of the achieved learning outcomes*	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.

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

7.	General information about the module
Module name	**Instrumental research methods in geology**
Module code	W2-GE-S1-416
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	Celem modułu jest nabycie przez studentów wiedzy na temat niektórych metod laboratoryjnych badania minerałów i skał. W trakcie zajęć student pozna podstawowe metody instrumentalne dostępne w INoZ: - skaningowa mikroskopia SEM-EDS, - proszkowa dyfrakcja promieni rentgenowskich (PXRD), - spektroskopia wibracyjna (Raman i IR). Student pozna możliwości badawcze zaproponowanych metod badawczych. Wykonując bezpośrednio pomiary lub uczestnicząc w ich przeprowadzeniu, zapozna się z metodami pracy laboratoryjnej, takimi jak przygotowanie próbek do badań, odpowiednie dla każdej z metod oraz nauczy się omawiania uzyskanych wyników. Przygotowywanie sprawozdań z wykonanych zajęć nauczy studenta pisania raportów laboratoryjnych oraz krytycznego czytania opracowań, wykonanych przez inne osoby czy jednostki badawcze. Przedmiot ten, jako całość wprowadzi studenta w podstawową wiedzę o współczesnych metodach badawczych stosowanych w geologii oraz w podstawowe umiejętności pracy w laboratorium badawczym
List of modules that must be completed before starting this module (if necessary)	[W2-GE-S1-408] Chemistry in Earth sciences [W2-GE-S1-412] Applied Geology 1 [W2-GE-S1-020] Mineralogy I [W2-GE-S1-027] Mineralogy II [W2-GE-S1-042] Petrology 2

8. Learning outcomes of the module

Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
W2-GE-S1-416_1	zna teoretyczne podstawy wybranych metod badawczych oraz zasady działania sprzętu	1GE_U3 1GE_U4 1GE_W5	2 1 1
W2-GE-S1-416_2	potrafi przygotować próbkę do badań	1GE_U3 1GE_U4 1GE_W5	2 1 1

W2-GE-S1-416_3	umie zinterpretować wyniki uzyskanych danych eksperymentalnych	1GE_U3 1GE_U4 1GE_W5	2 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*
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.*
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-GE-S1-416_L_1	laboratory classes	24	course work	W2-GE-S1-416_1, W2-GE-S1-416_2, W2-GE-S1-416_3	d01, d02, f01
W2-GE-S1-416_W_1	lecture	12	course work	W2-GE-S1-416_1	a01, 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?
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

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.

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

7.	**General information about the module**
Module name	**Interdisciplinary challenges of natural sciences**
Module code	W2-GE-S1-400
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	Celem modułu „Interdyscyplinarne wyzwania nauk przyrodniczych” jest umożliwienie studentowi poznania tych obszarów nauk przyrodniczych, gdzie dla poszerzenia istniejącego stanu wiedzy niezbędne jest interdyscyplinarne wykorzystanie metod i strategii poznawczych różnych dziedzin. Na przykładach badań naukowych z dziedzin takich jak kosmochemia, geologia/geochemia/mineralogia, archeometria i ochrona środowiska student zostanie zapoznany z wyzwaniami, jakie stawia przed badaczem nowoczesne podejście do badań przyrodniczych. Jednocześnie podczas konwersatorium student uzyska podstawową wiedzę i umiejętności praktyczne, niezbędne do zrozumienia metod stosowanych w naukach przyrodniczych. Po osiągnięciu efektów kształcenia modułu, integracja między różnymi dziedzinami wiedzy pozwoli studentowi w rozwijaniu głębokiej świadomości praw przyrody i jednocześnie spójnego rozumienia nauk przyrodniczych oraz świata.
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-GE-S1-400_1	zna podstawowe pojęcia z zakresu nauk przyrodniczych	1GE_W1 1GE_W5	2 2
W2-GE-S1-400_2	zna uwarunkowania środowiskowe działalności gospodarczej człowieka w zakresie nauk o Ziemi	1GE_W2 1GE_W5	3 2
W2-GE-S1-400_3	potrafi wykorzystywać posiadaną wiedzę do formułowania i rozwiązywania prostych i typowych, problemów z dziedziny nauk przyrodniczych	1GE_U1 1GE_U3 1GE_U7 1GE_W5	2 1 1 3
W2-GE-S1-400_4	potrafi przeprowadzić wybrane eksperymenty przyrodnicze	1GE_U2 1GE_U7	3 1
W2-GE-	potrafi brać udział w debacie – przedstawiać jasno i oceniać obiektywnie różne opinie i stanowiska, szukając	1GE_U4	2

S1-400_5	argumentów naukowych oraz dyskutować o nich.		
W2-GE-S1-400_6	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.	1GE_U8	2
W2-GE-S1-400_7	jest świadomy rzetelności zdobytej wiedzy i konieczności konfrontowania z nią obiegowych opinii pochodzących z różnych źródeł.	1GE_K1	2
W2-GE-S1-400_8	jest świadomy ograniczonego zakresu zdobytej wiedzy i konieczności poszukiwania nowych informacji z wykorzystaniem rzetelnych i pewnych źródeł	1GE_K2	2

9. Methods of conducting classes

Code	Category	Name (description)
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*
b07	Problem-solving methods	Activating methods: a case study *a comprehensive description of a phenomenon connected with the selected discipline; reflecting the reality, presenting the 'what', 'where' and 'how' of the phenomenon, i.e., all of its key aspects to be discussed in class; used as a reproduction, presentation, discussion or diagnosis of factors that shape the phenomenon or interact with it; an in-depth qualitative analysis and evaluation of a selected phenomenon*
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*
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*
e05	Practical methods	Internship *including professional and individual training; gaining skills and experience in real-life conditions, e.g., in the environment, institution or workplace the student is preparing for by following a specific study programme; training in real working conditions*
f03	Methods of self-learning	Conceptual work *a (mainly intellectual) activity carried out independently (or in a selected group) resulting in the creation of a concept, idea or project; creating a plan based on a vision; developing a general outline of a project; producing a simplified sketch of the variant versions of a procedure/product/work*

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-GE-S1-400_L	laboratory classes	12	course work	W2-GE-S1-400_3, W2-GE-	e01, e05, f03

_1				S1-400_4, W2-GE-S1-400_5	
W2-GE-S1-400_W_1	lecture	12	course work	W2-GE-S1-400_1, W2-GE-S1-400_2, W2-GE-S1-400_3, W2-GE-S1-400_6, W2-GE-S1-400_7, W2-GE-S1-400_8	a05, b01, b07, 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
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
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
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.

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

7.	General information about the module
Module name	**Introduction to the Labour Market**
Module code	W2-GE-S1-425
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	Celem przedmiotu jest omówienie podstawowych zagadnień z mikro i makroekonomii. Szczególny nacisk zostanie położony na kwestie istotne dla absolwenta geologii stosowanej tj. zasady funkcjonowania rynków kapitałowych, w tym roli surowców w gospodarce światowej. Ujęcie makroekonomiczne obejmuje kwestie polityki monetarnej i fiskalnej, a także zagadnienia związane z dochodem narodowym. Zagadnienia mikroekonomiczne obejmują elementy funkcjonowania przedsiębiorstw.
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-GE-S1-425_1	posiada ogólną wiedzę na temat wybranych metod naukowych oraz zna zagadnienia charakterystyczne dla dyscypliny nauki niezwiązanej z kierunkiem studiów.	1GE_W3 1GE_W4	3 5
W2-GE-S1-425_2	posiada umiejętność stawiania i analizowania problemów na podstawie pozyskanych treści z zakresu dyscypliny nauki niezwiązanej z kierunkiem studiów.	1GE_U7	4
W2-GE-S1-425_3	rozumie potrzebę interdyscyplinarnego podejścia do rozwiązywanych problemów, integrowania wiedzy z różnych dyscyplin oraz praktykowania samokształcenia służącego pogłębianiu zdobytej wiedzy.	1GE_K5	4

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*
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*
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-GE-S1-425_L_1	laboratory classes	15	course work	W2-GE-S1-425_2, W2-GE-S1-425_3	e01
W2-GE-S1-425_W_1	lecture	15	course work	W2-GE-S1-425_1	a01, b01

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
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

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.

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

7.	**General information about the module**
Module name	**Legal Issues in Geology and Environmental Protection**
Module code	W2-GE-S1-418
Number of the ECTS credits	1
Language of instruction	Polish
Purpose and description of the content of education	Moduł Zagadnienia prawne w geologii i ochronie środowiska ma pozwolić studentowi zrozumienie funkcjonowania reżimu prawnego w odniesieniu do działalności poszukiwawczej, rozpoznawczej, wydobywczej i rozwiązań prawnych w zakresie ochrony środowiska w związku z realizacją działalności objętej ustawą Prawo geologiczne i górnicze. Szczegółowo prezentowanymi zagadnieniami są: Pojęcie prawa i systemu prawnego, miejsce prawa geologicznego w systemie prawnym RP. Organy państwowe administrujące górnictwem i geologią. Historia prawodawstwa geologicznego i górniczego w Polsce, źródła prawa Szczegółowe omówienie zagadnień własności złóż kopalin, koncesjonowania działalności geologicznej i górniczej, kwalifikacji osób uprawnionych do prowadzenia takiej działalności, podstaw prawnych działalności geologicznej (projektowanie prac, prowadzenie prac, dokumentacja, ewidencja i bilansowanie zasobów) i górniczej (projekt zagospodarowania złoża, wydobywanie kopalin i likwidacja zakładu górniczego), szkód spowodowanych w związku z pracami geologicznymi i górniczymi oraz instrumentów ochrony środowiska przed oddziaływaniem górnictwa.
List of modules that must be completed before starting this module (if necessary)	[W2-GE-S1-037] Geology and economics of mineral deposits 1 [W2-GE-S1-043] Economic geology 2 [W2-GE-S1-411] Mining 1 [W2-GE-S1-425] Introduction to the Labour Market [W2-GE-S1-413] Drilling 1

8. Learning outcomes of the module

Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
W2-GE-S1-047_7	ma świadomość roli, zakresu obowiązków i odpowiedzialności geologa w świetle przepisów prawa	1GE_K6 1GE_W4 1GE_W5	2 2 2
W2-GE-S1-047_8	zna instrumenty ochrony środowiska przed oddziaływaniem prac geologicznych i górniczych	1GE_K3 1GE_K6 1GE_W3 1GE_W4 1GE_W5	2 2 2 2 2

W2-GE-S1-418_1	umie rozróżniać źródła prawa i organy państwowe, które je kreują	1GE_K5 1GE_U1	2 2
W2-GE-S1-418_2	rozumie organizację państwowej administracji geologicznej i górniczej oraz ich kompetencje	1GE_K5 1GE_W3	2 2
W2-GE-S1-418_3	rozumie zasady nabywania prawa użytkowania górniczego	1GE_K5 1GE_W3 1GE_W4 1GE_W5	2 2 2 1
W2-GE-S1-418_4	rozumie rozwiązania prawne w zakresie wykonywania działalności geologicznej i górniczej	1GE_K5 1GE_W3 1GE_W4 1GE_W5	2 2 2 2
W2-GE-S1-418_5	rozumie idee i zakres współdziałania organów przy podejmowaniu decyzji dotyczących działalności geologicznej i górniczej	1GE_K5 1GE_W3 1GE_W4 1GE_W5	2 2 2 2
W2-GE-S1-418_6	ma świadomość roli, zakresu obowiązków i odpowiedzialności geologa w świetle przepisów prawa	1GE_K5 1GE_W3 1GE_W4 1GE_W5	2 2 2 2

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*
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*

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-GE-S1-418_W_1	lecture	20	course work	W2-GE-S1-047_7, W2-GE-S1-047_8, W2-GE-S1-418_1, W2-GE-S1-418_2, W2-GE-S1-418_3, W2-GE-S1-418_4, W2-GE-S1-418_5, W2-GE-	a01, b01

				S1-418_6	

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
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

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.

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

7.	**General information about the module**
Module name	**Mineralogy I**
Module code	W2-GE-S1-020
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	Celem modułu Mineralogia 1 jest zwięzłe przedstawienie teoretycznych 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 nauczanie 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-GE-S1-020_1	zna podstawowe pojęcia i prawa krystalografii geometrycznej, umie rozpoznawać operacje symetrii w kryształach	1GE_U3 1GE_U4 1GE_W5	2 1 1
W2-GE-S1-020_2	potrafi rozpoznać 32 klasy symetrii, wie jak przekształcić symbole symetrii Grotha w symbole międzynarodowe	1GE_U3 1GE_U4 1GE_W5	2 1 2
W2-GE-S1-020_3	rozpoznaje postaci proste w układach krystalograficznych oraz potrafi ustalić symbole ścian postaci prostych	1GE_U3 1GE_U4 1GE_W5	2 1 2
W2-GE-S1-020_4	opanował rysowanie projekcji cyklograficznych i stereograficznych	1GE_U3 1GE_U4 1GE_W5	2 1 2

W2-GE-S1-020_5	posługuje się programami komputerowymi CrystalShaper, Vesta	1GE_U3 1GE_U4 1GE_W5	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*
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*

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-GE-S1-020_L_1	laboratory classes	24	course work	W2-GE-S1-020_1, W2-GE-S1-020_2, W2-GE-S1-020_3, W2-GE-S1-020_4, W2-GE-S1-020_5	d01, d02, d03
W2-GE-S1-020_W_1	lecture	18	course work	W2-GE-S1-020_1, W2-GE-S1-020_2, W2-GE-S1-020_3	a01, a03

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*	No

		developed during previous classes or new skills necessary for the implementation of subsequent elements of the curriculum (as preparation for class participation)	
b02	Consulting the curriculum and the organization of classes	Verification / adjustment / discussion of syllabus provisions *consulting the content of the syllabus, possibly in the presence of the year tutor or members of the class group, and, if necessary, reassessing the provisions concerning special conditions for class participation, e.g., space and time requirements, technical and other requirements, including conditions for participation in classes outside the walls of the university, classes organized in blocks, organized online, etc.*	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.

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

7.	**General information about the module**
Module name	**Mineralogy II**
Module code	W2-GE-S1-027
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	Celem modułu Mineralogia 2 jest zapoznanie studentów z teoretycznymi i metodologicznymi podstawami kursu, praca z najbardziej rozpowszechnionymi minerałami, które pozwolą na zrozumienie kierunków badań mineralogicznych i praktycznego wykorzystania surowców mineralnych. Mineralogia - nauka o minerałach, zajmująca się badaniem składu, właściwości, morfologii, struktury, procesów powstawania i przemian minerałów, prawidłowości ich współwystępowania w przyrodzie, a także warunków i metod syntezy oraz praktycznych zastosowań. Do zadań przedmiotu Mineralogia należy zdobycie wiedzy o genezie minerałów, poznaniu zasad klasyfikacji, zrozumieniu wzorów krystalochemicznych i ich obliczanie na podstawie wyników analiz chemicznych na poziomie podstawowym. Dodatkowo na zajęciach praktycznych student powinien opanować nawyki opisania i rozpoznawania minerałów oraz ich paragenez.
List of modules that must be completed before starting this module (if necessary)	[W2-GE-S1-408] Chemistry in Earth sciences [W2-GE-S1-020] Mineralogy I

8. Learning outcomes of the module

Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
W2-GE-S1-027_1	zna współczesną klasyfikację minerałów	1GE_U3 1GE_U4 1GE_W5	1 2 2
W2-GE-S1-027_2	posiada podstawową wiedzę (cechy fizyczne, skład chemiczny, strukturę, genezę) o najbardziej rozpowszechnionych minerałach i grupach minerałów	1GE_U3 1GE_U4 1GE_W5	1 1 1
W2-GE-S1-027_3	zna zastosowanie surowców mineralnych	1GE_U3 1GE_U4 1GE_W5	1 1 1
W2-GE-S1-027_4	umie ustalać i opisywać cechy fizyczne minerałów i rozpoznawać minerały, opisywać asocjacje mineralne oraz ustalać typ genetyczny badanej próbki	1GE_U3 1GE_U4	2 2

		1GE_W5	1
W2-GE-S1-027_5	zna podstawy obliczenia wzorów krystalochemicznych	1GE_U3 1GE_U4 1GE_W5	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.*
e03	Practical methods	Creation/production – creative workshop *an activity involving creating/producing a work/artifact based on the individual, creative effort of the participant; the creative workshop is characterized by the presence and openness which make it possible to access the essence of the work/ peculiarity of the artifact at every stage of its creation/production*
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-GE-S1-027_L_1	laboratory classes	24	exam	W2-GE-S1-027_1, W2-GE-S1-027_2, W2-GE-S1-027_3, W2-GE-S1-027_4, W2-GE-S1-027_5	d01, d02, e03, f01
W2-GE-S1-027_W_1	lecture	18	exam	W2-GE-S1-027_1, W2-GE-S1-027_2, W2-GE-S1-027_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.

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

7.	**General information about the module**
Module name	**Mining 1**
Module code	W2-GE-S1-411
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	Moduł Górnictwo ma umożliwić studentowi nabycie wiedzy o sposobach i metodach eksploatacji złóż. Student powinien poznać schemat funkcjonowania zakładu górniczego, rodzaje wyrobisk i ich zadania, rodzaje obudów i warunki ich stosowania, sposoby i systemy eksploatacji złóż, metody urabiania kopaliny oraz transport w zakładach górniczych. Powinien także poznać zagadnienia dotyczące podstawowych zagrożeń naturalnych w górnictwie oraz wpływu działalności górniczej na środowisko naturalne i społeczne. Dzięki temu student ma uzyskać podstawową wiedzę na temat znaczenia górnictwa w naukach geologicznych i środowisku oraz kierunków rozwoju i współczesnych problemów górnictwa.
List of modules that must be completed before starting this module (if necessary)	[W2-GE-S1-405] zna instrumenty ochrony środowiska przed oddziaływaniem prac geologicznych i górniczych [W2-GE-S1-406] Dynamic Earth 2 [W2-GE-S1-020] Mineralogy I [W2-GE-S1-016] Environmental Protection

8. Learning outcomes of the module

Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
W2-GE-S1-411_1	zna podstawowe sposoby i metody eksploatacji złóż kopalin i pogłębia wiedzę w zakresie wybranej problematyki	1GE_W2 1GE_W3 1GE_W4	2 3 2
W2-GE-S1-411_2	opisuje i wyjaśnia podstawowe pojęcia z zakresu górnictwa	1GE_W1	2
W2-GE-S1-411_3	opisuje i rozumie schematu funkcjonowania zakładu górniczego	1GE_W2 1GE_W4	2 2
W2-GE-S1-411_4	rozumie warunki eksploatacji górniczej w zależności od zagrożeń naturalnych	1GE_W2	3
W2-GE-S1-411_5	potrafi rozróżnić stosowane systemy eksploatacji kopalin w zależności od formy i budowy złoża	1GE_U1	3
W2-GE-S1-411_6	potrafi określić znaczenie i rolę transportu w funkcjonowaniu zakładu górniczego	1GE_U2	2

		1GE_U6	1
W2-GE-S1-411_7	rozumie kierunki perspektyw górnictwa w aspekcie, nowych technologii eksploatacji i bezpieczeństwa pracy, wykazuje aktywną postawę do poznawania rzeczy nowych i wykorzystywania ich dla wzbogacania własnej wiedzy, krytycznego i twórczego myślenia oraz otwartości na poglądy innych	1GE_K1 1GE_K6	1 3

9. Methods of conducting classes

Code	Category	Name (description)
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*
b04	Problem-solving methods	Activating method – discussion / debate *an exchange of views supported by substantive arguments leading to a clash of different views, a compromise or the identification of common positions; it proceeds according to previously agreed-upon rules regarding the time, manner and turn-taking as well as the principles of civil discourse; a discussion is not a competition but aims at finding the best solutions or presenting different points of view; its varieties include brainstorming, Oxford-style debate, panel discussion, decision tree, conference discussion; a debate is an orderly dispute between supporters and opponents of a viewpoint, usually specialists in the field or pre-selected representatives of a group dealing with a common problem*
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*

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-GE-S1-411_L_1	laboratory classes	12	course work	W2-GE-S1-411_4, W2-GE-S1-411_5, W2-GE-S1-411_6, W2-GE-S1-411_7	b04, c06
W2-GE-S1-411_W_1	lecture	12	course work	W2-GE-S1-411_1, W2-GE-S1-411_2, W2-GE-S1-411_3, W2-GE-S1-411_4	b02

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
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*	No

		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	

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.

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

7.	**General information about the module**
Module name	**Module in the "Civil Society and Entrepreneurship" area**
Module code	MO-2023-SS-SOP
Number of the ECTS credits	3
Language of instruction	
Purpose and description of the content of education	“Civil society and entrepreneurship” is the area which like no other contributed to opening university education "to the world", the area which directly connects science and knowledge acquisition to social use (the system of institutions, laws, customs, social norms). Underlying the area are the conviction that education within each academic discipline should be correlated with the awareness of the changing relation between a person and a citizen, between private and collective life, between a political and a non-political subject, etc. The area of “Civil Society and Entrepreneurship” can be pursued by a student within modules dominated by an academic teacher as well as those where the responsibility for achieving the learning outcomes lies mainly with the student, e.g. civil society in action (projects combining social and natural sciences, combining social sciences and humanities, or combining social sciences, mathematics, physics and chemistry) or social participation in practice. The choice from the range of the above-mentioned modules allows for a high individualization of the education process.
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)
KS_01	Is ready to meet social obligations, co-organize activities for the benefit of the community and is open to scientific solutions to cognitive and practical problems.	MOB.2023_K01	3
U_01	Asks questions, analyzes research problems, and finds solutions to them, making use of knowledge, skills and experience pertaining to civil society and entrepreneurship, in conjunction with the leading discipline of the degree programme.	MOB.2023_U01	3
U_02	Communicates the results of his/her work on civil society and entrepreneurship in a way which is clear and understandable not only to specialists.	MOB.2023_U01	3
W_01	Has advanced knowledge of selected scientific theories and methods, and is familiar with issues connected with civil society and entrepreneurship.	MOB.2023_W01	3
W_02	Understands the connection between the issues pertaining to civil society and entrepreneurship, and the leading discipline of the degree programme.	MOB.2023_W01	3

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*
b04	Problem-solving methods	Activating method – discussion / debate *an exchange of views supported by substantive arguments leading to a clash of different views, a compromise or the identification of common positions; it proceeds according to previously agreed-upon rules regarding the time, manner and turn-taking as well as the principles of civil discourse; a discussion is not a competition but aims at finding the best solutions or presenting different points of view; its varieties include brainstorming, Oxford-style debate, panel discussion, decision tree, conference discussion; a debate is an orderly dispute between supporters and opponents of a viewpoint, usually specialists in the field or pre-selected representatives of a group dealing with a common problem*
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*
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*
f02	Methods of self-learning	Individual work with a text *searching for and acquiring new information using textbooks and other written sources (including their digital versions); searching for texts, selecting fragments for analysis/interpretation, using other texts to solve a problem related to the studied issue*

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**
01	depending on the choice	30	course work	KS_01, U_01, U_02, W_01, W_02	a03, a05, b04, c07, d03, f01, f02

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
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*	Yes
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*	Yes
c01	Preparation for verification of learning outcomes	Determining the stages of task implementation contributing to the verification of learning outcomes *devising a task implementation strategy embracing the division of content, the range of activities, implementation time and/or the method(s) of obtaining the necessary materials and tools, etc.*	Yes
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 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*	Yes

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.

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

7.	**General information about the module**
Module name	**Optional course 1**
Module code	W2-GE-S1-031
Number of the ECTS credits	6
Language of instruction	Polish
Purpose and description of the content of education	W ramach przedmiotów fakultatywnych (1, 2, 3, i 4) student ma możliwość wyboru specjalistycznych modułów poszerzających ogólną wiedzę geologiczną. Wybór kilku oferowanych modułów w ramach Przedmiotu fakultatywnego 1 (składającego się z 72 h zajęć) pozwala ukierunkować studenta na tematykę, którą się szczególnie interesuje lub która będzie mu potrzebna do zrealizowania pracy dyplomowej. Wszystkie oferowane moduły liczą 24 h zajęć i 2 punkty ECTS. W ramach Przedmiotu fakultatywnego 1 student musi wybrać więc trzy moduły. Z tej samej puli modułów do wyboru student będzie wybierał jeszcze trzy razy: w ramach Przedmiotu fakultatywnego 2 (72 h) – trzy moduły, w ramach Przedmiotu fakultatywnego 3 (48 h) – dwa moduły i w ramach Przedmiotu fakultatywnego 4 (72 h) – trzy moduły. Pozwala mu to zaprojektować własną ścieżkę rozszerzania wiedzy i zyskiwania specjalistycznych umiejętności i kompetencji.
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-GE-S1-031_1	zyskuje unikalną, specjalistyczną wiedzę wspierającą ogólne wykształcenie geologiczne	1GE_W1 1GE_W2 1GE_W3 1GE_W4	2 2 2 2
W2-GE-S1-031_2	nabywa umiejętności wynikające z uzyskanej wiedzy, które poszerzają jego zestaw umiejętności zawodowych	1GE_U1 1GE_U2 1GE_U3 1GE_U8	2 2 2 2
W2-GE-S1-031_3	doskonali i rozwija specjalistyczne kompetencje geologiczne	1GE_K2 1GE_K3 1GE_K4	2 2 2

		1GE_K6	2

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*
a02	Lecture methods / expository methods	Monographic lecture *an exhaustive discussion of one issue, usually related to the research interests of the person teaching the course or a thorough presentation of one selected issue*
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-GE-S1-031_L_1	laboratory classes	36	course work	W2-GE-S1-031_2, W2-GE-S1-031_3	e01
W2-GE-S1-031_W_1	lecture	36	course work	W2-GE-S1-031_1	a01, a02

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
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

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.

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

7.	**General information about the module**
Module name	**Optional course 2**
Module code	W2-GE-S1-038
Number of the ECTS credits	6
Language of instruction	Polish
Purpose and description of the content of education	W ramach przedmiotów fakultatywnych (1, 2, 3, i 4) student ma możliwość wyboru specjalistycznych modułów poszerzających ogólną wiedzę geologiczną. Wybór kilku oferowanych modułów w ramach Przedmiotu fakultatywnego 1 (składającego się z 72 h zajęć) pozwala ukierunkować studenta na tematykę, którą się szczególnie interesuje lub która będzie mu potrzebna do zrealizowania pracy dyplomowej. Wszystkie oferowane moduły liczą 24 h zajęć i 2 punkty ECTS. W ramach Przedmiotu fakultatywnego 1 student musi wybrać więc trzy moduły. Z tej samej puli modułów do wyboru student będzie wybierał jeszcze trzy razy: w ramach Przedmiotu fakultatywnego 2 (72 h) – trzy moduły, w ramach Przedmiotu fakultatywnego 3 (48 h) – dwa moduły i w ramach Przedmiotu fakultatywnego 4 (72 h) – trzy moduły. Pozwala mu to zaprojektować własną ścieżkę rozszerzania wiedzy i zyskiwania specjalistycznych umiejętności i kompetencji.
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-GE-S1-034_2	nabywa umiejętności wynikające z uzyskanej wiedzy, które poszerzają jego zestaw umiejętności zawodowych	1GE_U1 1GE_U2 1GE_U3 1GE_U8	2 2 2 2
W2-GE-S1-038_1	zyskuje unikalną, specjalistyczną wiedzę wspierającą ogólne wykształcenie geologiczne	1GE_W1 1GE_W2 1GE_W3 1GE_W4	2 2 2 2
W2-GE-S1-038_3	doskonali i rozwija specjalistyczne kompetencje geologiczne	1GE_K2 1GE_K3 1GE_K4	2 2 2

		1GE_K6	2

9. Methods of conducting classes

Code	Category	Name (description)
a02	Lecture methods / expository methods	Monographic lecture *an exhaustive discussion of one issue, usually related to the research interests of the person teaching the course or a thorough presentation of one selected issue*
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-GE-S1-038_L_1	laboratory classes	36	course work	W2-GE-S1-034_2, W2-GE-S1-038_3	e01
W2-GE-S1-038_W_1	lecture	36	course work	W2-GE-S1-038_1	a02

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
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

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.

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

7.	**General information about the module**
Module name	**Optional course 3**
Module code	W2-GE-S1-045
Number of the ECTS credits	4
Language of instruction	Polish
Purpose and description of the content of education	W ramach przedmiotów fakultatywnych (1, 2, 3, i 4) student ma możliwość wyboru specjalistycznych modułów poszerzających ogólną wiedzę geologiczną. Wybór kilku oferowanych modułów w ramach Przedmiotu fakultatywnego 1 (składającego się z 72 h zajęć) pozwala ukierunkować studenta na tematykę, którą się szczególnie interesuje lub która będzie mu potrzebna do zrealizowania pracy dyplomowej. Wszystkie oferowane moduły liczą 24 h zajęć i 2 punkty ECTS. W ramach Przedmiotu fakultatywnego 1 student musi wybrać więc trzy moduły. Z tej samej puli modułów do wyboru student będzie wybierał jeszcze trzy razy: w ramach Przedmiotu fakultatywnego 2 (72 h) – trzy moduły, w ramach Przedmiotu fakultatywnego 3 (48 h) – dwa moduły i w ramach Przedmiotu fakultatywnego 4 (72 h) – trzy moduły. Pozwala mu to zaprojektować własną ścieżkę rozszerzania wiedzy i zyskiwania specjalistycznych umiejętności i kompetencji.
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-GE-S1-045_1	zyskuje unikalną, specjalistyczną wiedzę wspierającą ogólne wykształcenie geologiczne	1GE_W1 1GE_W2 1GE_W3 1GE_W4	2 2 2 2
W2-GE-S1-045_2	nabywa umiejętności wynikające z uzyskanej wiedzy, które poszerzają jego zestaw umiejętności zawodowych	1GE_U1 1GE_U2 1GE_U3 1GE_U8	2 2 2 2
W2-GE-S1-045_3	doskonali i rozwija specjalistyczne kompetencje geologiczne	1GE_K2 1GE_K3 1GE_K4	2 2 2

		1GE_K6	2

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*
a02	Lecture methods / expository methods	Monographic lecture *an exhaustive discussion of one issue, usually related to the research interests of the person teaching the course or a thorough presentation of one selected issue*
c02	Demonstration methods	Video show *reproducing a film or video material in its entirety or in fragments in order to illustrate the content taught in class, to submit it to analysis and evaluation or to use it as an exercise in image perception; a film/video can be a work of art, an illustration (also technical illustration) of a content/phenomenon/object, a private record of an action, a media image, etc.*

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-GE-S1-045_L_1	laboratory classes	24	course work	W2-GE-S1-045_2, W2-GE-S1-045_3	c02
W2-GE-S1-045_W_1	lecture	24	course work	W2-GE-S1-045_1	a01, a02

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
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

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.

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

7.	**General information about the module**
Module name	**Optional course 4**
Module code	W2-GE-S1-054
Number of the ECTS credits	6
Language of instruction	Polish
Purpose and description of the content of education	W ramach przedmiotów fakultatywnych (1, 2, 3, i 4) student ma możliwość wyboru specjalistycznych modułów poszerzających ogólną wiedzę geologiczną. Wybór kilku oferowanych modułów w ramach Przedmiotu fakultatywnego 1 (składającego się z 72 h zajęć) pozwala ukierunkować studenta na tematykę, którą się szczególnie interesuje lub która będzie mu potrzebna do zrealizowania pracy dyplomowej. Wszystkie oferowane moduły liczą 24 h zajęć i 2 punkty ECTS. W ramach Przedmiotu fakultatywnego 1 student musi wybrać więc trzy moduły. Z tej samej puli modułów do wyboru student będzie wybierał jeszcze trzy razy: w ramach Przedmiotu fakultatywnego 2 (72 h) – trzy moduły, w ramach Przedmiotu fakultatywnego 3 (48 h) – dwa moduły i w ramach Przedmiotu fakultatywnego 4 (72 h) – trzy moduły. Pozwala mu to zaprojektować własną ścieżkę rozszerzania wiedzy i zyskiwania specjalistycznych umiejętności i kompetencji.
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-GE-S1-054_1	zyskuje unikalną, specjalistyczną wiedzę wspierającą ogólne wykształcenie geologiczne	1GE_W1 1GE_W2 1GE_W3 1GE_W4	2 2 2 2
W2-GE-S1-054_2	nabywa umiejętności wynikające z uzyskanej wiedzy, które poszerzają jego zestaw umiejętności zawodowych	1GE_U1 1GE_U2 1GE_U3 1GE_U8	2 2 2 2
W2-GE-S1-054_3	doskonali i rozwija specjalistyczne kompetencje geologiczne	1GE_K2 1GE_K3 1GE_K4	2 2 2

		1GE_K6	2

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*
a02	Lecture methods / expository methods	Monographic lecture *an exhaustive discussion of one issue, usually related to the research interests of the person teaching the course or a thorough presentation of one selected issue*
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-GE-S1-054_L_1	laboratory classes	36	course work	W2-GE-S1-054_2, W2-GE-S1-054_3	e01
W2-GE-S1-054_W_1	lecture	36	course work	W2-GE-S1-054_1	a01, a02

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
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

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.

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

7.	General information about the module
Module name	**Organic petrology**
Module code	W2-GE-S1-053
Number of the ECTS credits	1
Language of instruction	Polish
Purpose and description of the content of education	Celem Petrologii organicznej jest zapoznanie studenta ze składnikami organicznymi skał, ich genezą, własnościami optycznymi i chemicznymi, zmianami na skutek utleniania oraz wpływu temperatury. Student również pozna zmiany jakim ulega materia organiczna w czasie dojrzewania. Student opanuje umiejętność identyfikacji mikroskopowej składników organicznych, określania ich zawartości oraz wykonywania pomiarów refleksyjności i ich interpretacji. Pozna on również metody interpretacji wyników analiz petrograficznych. Student zdobędzie wiedzę na temat wykorzystania metod petrograficznych badania materii organicznej.
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-GE-S1-053_1	zna własności optyczne i genezę macerałów i innych składników organicznych w skałach	1GE_K1 1GE_K2 1GE_W1 1GE_W3	1 1 2 2
W2-GE-S1-053_2	posiada wiedzę na temat zachowania składników organicznych skał podczas ich dojrzewania oraz utleniania oraz wpływu temperatury	1GE_K1 1GE_K2 1GE_K3 1GE_K4 1GE_K5 1GE_K6 1GE_W1 1GE_W2 1GE_W3	1 1 1 1 1 1 2 2 1

		1GE_W4 1GE_W5	1 1
W2-GE-S1-053_3	rozpoznaje mikroskopowo poszczególne składniki materii organicznej w skałach	1GE_K1 1GE_U1 1GE_U8	1 3 1
W2-GE-S1-053_4	posiada wiedzę nt. metod mikroskopowych badania materii organicznej oraz sposobach ich wykorzystania	1GE_K2 1GE_U8 1GE_W1 1GE_W3	1 1 2 2
W2-GE-S1-053_5	potrafi wykonać analizę petrograficzną oraz zinterpretować jej wyniki	1GE_U2 1GE_U8	2 1
W2-GE-S1-053_6	objaśnia genezę skał na podstawie ich własności petrograficznych	1GE_K2 1GE_U1	2 2

9. Methods of conducting classes

Code	Category	Name (description)
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*
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*
e05	Practical methods	Internship *including professional and individual training; gaining skills and experience in real-life conditions, e.g., in the environment, institution or workplace the student is preparing for by following a specific study programme; training in real working conditions*
e06	Practical methods	Observation *also conducted as fieldwork; a method of watching phenomena, objects or people in a systematic/planned way in order to gain knowledge about them; perceptual separation of elements of a model action as an element of learning through imitation; a complex system of cognition based on sensory experiences*

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-GE-S1-053_L_1	laboratory classes	12	course work	W2-GE-S1-053_1, W2-GE-S1-053_2, W2-GE-S1-053_3, W2-GE-S1-053_5	e01, e05, e06
W2-GE-S1-053_W	lecture	12	course work	W2-GE-S1-053_1, W2-GE-	b01

_1				S1-053_2, W2-GE-S1-053_4, W2-GE-S1-053_6	

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

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.

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

7.	General information about the module
Module name	**Palaeontology**
Module code	W2-GE-S1-404
Number of the ECTS credits	4
Language of instruction	Polish
Purpose and description of the content of education	Moduł Paleontologia przedstawia studentowi terminologię, procesy i metody badawcze w zakresie naturalnej historii organizmów żywych. Nacisk jest położony na umiejętność rozróżniania głównych grup skamieniałości. Nabyta wiedza powinna umożliwić studentowi rozpoznawanie najważniejszych kopalnych organizmów, a także określanie pozycji stratygraficznej, paleoekologicznej i biogeograficznej typowych formacji osadowych fanerozoiku Polski.
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-GE-S1-404_1	zna najważniejsze grupy pierwotniaków, roślin i zwierząt występujące w stanie kopalnym w fanerozoiku, ich morfologię oraz zasięgi stratygraficzne; zna również podstawy podziału i nazewnictwo tabeli stratygraficznej	1GE_W3 1GE_W5	3 4
W2-GE-S1-404_2	potrafi rozróżniać najważniejsze grupy organiznów kopalnych, określać ich elementy morfologiczne oraz zasięgi stratygraficzne	1GE_U1	3
W2-GE-S1-404_3	potrafi określać wiek względny skał na podstawie skamieniałości, warunki paleośrodowiskowe, interpretuje zmieniającą się pozycję geograficzną i biogeograficzną Polski w fanerozoiku na podstawie skamieniałości	1GE_U1 1GE_U3 1GE_U8	2 2 2
W2-GE-S1-404_4	umie manualnie wykonywać rysunki skamieniałości w kilku rzutach	1GE_U1	1
W2-GE-S1-404_5	wykazuje aktywną postawę do poznawania rzeczy nowych i wykorzystywania ich dla wzbogacania własnej wiedzy; stara się uczyć samodzielnie w oparciu o dostępną literaturę, krytycznie oceniając stan własnej wiedzy	1GE_K2	3
W2-GE-S1-404_6	ma świadomość walorów poznawczych, ontologicznych i estetycznych organizmów kopalnych oraz ich ochrony jako znalezisk unikatowych, oraz potrzeby ich ochrony	1GE_K1 1GE_K3 1GE_K6	3 1 1

9.	Methods of conducting classes	
Code	**Category**	**Name (description)**
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*
e06	Practical methods	Observation *also conducted as fieldwork; a method of watching phenomena, objects or people in a systematic/planned way in order to gain knowledge about them; perceptual separation of elements of a model action as an element of learning through imitation; a complex system of cognition based on sensory experiences*

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-GE-S1-404_L_1	laboratory classes	24	exam	W2-GE-S1-404_1, W2-GE-S1-404_2, W2-GE-S1-404_3, W2-GE-S1-404_4, W2-GE-S1-404_5, W2-GE-S1-404_6	c06, c07, e06
W2-GE-S1-404_W_1	lecture	24	exam	W2-GE-S1-404_1, W2-GE-S1-404_5, W2-GE-S1-404_6	c07

11.	The student's work, apart from participation in classes, includes in particular:		
Code	**Category**	**Name (description)**	**Is it part of the BUNA?**
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
c01	Preparation for verification of learning outcomes	Determining the stages of task implementation contributing to the verification of learning outcomes *devising a task implementation strategy embracing the division of content, the range of activities, implementation time and/or the method(s) of obtaining the necessary materials and tools, etc.*	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

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

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.

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

7.	**General information about the module**
Module name	**Petrology 1**
Module code	W2-GE-S1-034
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	Moduł Petrologia 1 ma umożliwić studentowi poznanie procesów kształtujących skorupę ziemską oraz podstawowych metod badawczych używanych do analizy skał skorupy ziemskiej i płaszcza, wraz z koncentracjami złożowymi niektórych pierwiastków 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 i cechy charakterystyczne środowisk generujących te skały. Umiejętności zastosowania metod instrumentalnych oraz obliczeniowych pozwolą studentowi na praktyczne rozwiązywanie problemów geologicznych, w tym na ogólne i szczegółowe klasyfikacje różnych typów skał, diagnozowania procesów geologicznych, krytyczną ocenę możliwości zastosowania różnych metod badawczych, w zależności od podstawowych charakterystyk badanego materiału skalnego.
List of modules that must be completed before starting this module (if necessary)	[W2-GE-S1-408] Chemistry in Earth sciences [W2-GE-S1-405] zna instrumenty ochrony środowiska przed oddziaływaniem prac geologicznych i górniczych [W2-GE-S1-406] Dynamic Earth 2 [W2-GE-S1-027] Mineralogy II [W2-GE-S1-426] Tectonics and Structural Geology (Field classes)

8. Learning outcomes of the module

Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
W2-GE-S1-034_1	zna i rozumie w zaawansowanym stopniu teorie, fakty, obiekty zjawiska oraz dotyczące ich metody ze wszystkich działów geologii wyjaśniające złożone zależności pomiędzy nimi.	1GE_K1 1GE_U1 1GE_U3 1GE_W1	1 1 1 1
W2-GE-S1-034_2	ma wiedzę z zakresu nauk podstawowych niezbędną do zrozumienia zagadnień dotyczących nauk o Ziemi.	1GE_K2 1GE_U8 1GE_W5	1 2 2
W2-GE-S1-034_3	potrafi wykorzystywać posiadaną wiedzę do formułowania i rozwiązywania prostych i typowych, problemów geologicznych oraz wykonywać zadania geologa w warunkach nie w pełni przewidywalnych przez:	1GE_K2 1GE_K3	2 2

	- 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	1GE_U1 1GE_U8	1 2
W2-GE-S1-034_4	potrafi współdziałać z innymi osobami w ramach prac zespołowych (także o charakterze interdyscyplinarnym)	1GE_K6 1GE_U8 1GE_W1	2 1 1
W2-GE-S1-034_5	potrafi planować i organizować pracę indywidualną oraz zespołową, w tym w warunkach terenowych, z dbałością o bezpieczeństwo i ekonomikę działań.	1GE_K3 1GE_U1 1GE_U2 1GE_W1	3 3 2 2
W2-GE-S1-034_6	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	1GE_K1 1GE_W1 1GE_W3 1GE_W5	2 2 2 2
W2-GE-S1-034_7	wykazuje aktywną postawę do poznawania rzeczy nowych i wykorzystywania ich dla wzbogacania własnej wiedzy; krytycznego i twórczego myślenia oraz otwartości na poglądy innych	1GE_K1 1GE_K2 1GE_U7	2 1 2

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*
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-GE-S1-034_L_1	laboratory classes	24	course work	W2-GE-S1-034_3, W2-GE-S1-034_4, W2-GE-S1-034_5, W2-GE-S1-034_6, W2-GE-S1-034_7	c06, d03, e01
W2-GE-S1-034_W_1	lecture	12	course work	W2-GE-S1-034_1, W2-GE-S1-034_2, W2-GE-S1-034_4, W2-GE-S1-034_7	a01, a03, 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
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.

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

7.	**General information about the module**
Module name	**Petrology 2**
Module code	W2-GE-S1-042
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	Petrologia 2 stanowi rozwinięcie Petrologii 1, z bardziej szczegółowym opisem procesów skałotwórczych zachodzących w warunkach magmowych, osadowych i metamorficznych. Zestaw tematów realizowanych obejmuje: 1. minerały akcesoryczne - charakterystyka i wykorzystanie; 2. rodzina gabroidów – formowanie się i znaczenie złożowe; 3. anortozyty - procesy powstawania, znaczenie dla rozwoju Ziemi i aspekty złożowe; 3. procesy mieszania magm wraz z praktyczną aplikacją i nauką tworzenia własnych algorytmów obliczeniowych dla kontroli dowolnych mieszanek (także z aspektem praktycznym/przemysłowym); 4. rodzina ryolitu i dacytu - charakterystyka, warunki powstawania; 5. rodzina bazaltów - charakterystyka, warunki tworzenia, implikacje dla rozwoju Ziemi; 6. asocjacja karbonatytowo-nefelinitowa i co z tego wynika; 7. kimberlity - czy tylko źródło diamentów ? 8. węglany osadowe, ich warunki tworzenia, podział i charakterystyka; 9. metamorfizm bardzo niskiego stopnia i dna oceanicznego; 10. procesy topienia cząstkowego i bilans materii w procesie oddzielenia stopu (dyferencjacja metamorficzna) wraz z aspektem praktycznym tego procesu; 11. skały zmetamorfizowane dynamicznie 12. praktyczne i krytyczne zastosowanie różnych metod klasyfikacji skał.
List of modules that must be completed before starting this module (if necessary)	[W2-GE-S1-408] Chemistry in Earth sciences [W2-GE-S1-405] zna instrumenty ochrony środowiska przed oddziaływaniem prac geologicznych i górniczych [W2-GE-S1-406] Dynamic Earth 2 [W2-GE-S1-027] Mineralogy II [W2-GE-S1-034] Petrology 1 [W2-GE-S1-410] Tectonics and Structural Geology [W2-GE-S1-010] Selected mathematics problems for geologists

8. Learning outcomes of the module

Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
W2-GE-	zna i rozumie w zaawansowanym stopniu teorie, fakty, obiekty zjawiska oraz dotyczące ich metody ze wszystkich		

S1-042_1	działów geologii wyjaśniające złożone zależności pomiędzy nimi.	1GE_K1 1GE_U1 1GE_U3 1GE_W1	2 2 2 3
W2-GE-S1-042_2	zna uwarunkowania środowiskowe działalności gospodarczej człowieka w zakresie nauk o Ziemi i zdaje sobie sprawę z zagrożeń jakie ta działalność za sobą niesie.	1GE_K2 1GE_U8 1GE_W2 1GE_W5	1 2 2 3
W2-GE-S1-042_3	potrafi wykorzystywać posiadaną wiedzę do formułowania i rozwiązywania prostych i typowych, problemów geologicznych oraz wykonywać zadania 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	1GE_K2 1GE_K3 1GE_U1 1GE_U8	3 3 3 2
W2-GE-S1-042_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.	1GE_K6 1GE_U8 1GE_W1	3 2 2
W2-GE-S1-042_5	potrafi planować i organizować pracę indywidualną oraz zespołową, w tym w warunkach terenowych, z dbałością o bezpieczeństwo i ekonomikę działań.	1GE_K3 1GE_U1 1GE_U2 1GE_W2	3 3 2 2
W2-GE-S1-042_6	wykazuje aktywną postawę do poznawania rzeczy nowych i wykorzystywania ich dla wzbogacania własnej wiedzy; krytycznego i twórczego myślenia oraz otwartości na poglądy innych	1GE_K1 1GE_K2 1GE_U7	3 2 2

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*
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*
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
d04	Programmed learning methods	Reconstruction / reproduction *proceeding according to the indicated/displayed pattern/model; e.g., the reconstruction of a structure, model, image, etc.*
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-GE-S1-042_L_1	laboratory classes	24	exam	W2-GE-S1-042_1, W2-GE-S1-042_3, W2-GE-S1-042_4, W2-GE-S1-042_5, W2-GE-S1-042_6	c06, d03, d04, e01
W2-GE-S1-042_W_1	lecture	12	exam	W2-GE-S1-042_1, W2-GE-S1-042_2, W2-GE-S1-042_4, W2-GE-S1-042_6	a01, b01

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

Code	Category	Name (description)	Is it part of the BUNA?
d01	Consulting the results of the verification of learning outcomes	Analysis of the corrective feedback provided by the academic teacher on the results of the verification of learning outcomes *reading through the academic teacher's comments, assessments and opinions on the implementation of the task aimed at checking the level of the achieved learning outcomes*	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.

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

7.	**General information about the module**
Module name	**Physical education**
Module code	WF-2023
Number of the ECTS credits	0
Language of instruction	
Purpose and description of the content of education	Academic physical culture should be an integral and complementary part of the general educational program of the university. Physical culture consists of physical education, recreation, sport and tourism. The physical education module is the only area that creates the opportunity for implementing the body- and health-related values and provides a counterbalance to the mental workload of university students. It responds to the changing reality and to a large extent participates in the process of preparing the student for professional adult life as well as the life in the family and in the society. The aim of the classes in this/her module is to become familiar with and to learn the technical elements of the selected sports discipline. Also, to possibly consolidate the skills acquired at a previous stage of education. Thus, the student becomes equipped with the necessary knowledge about physical culture, its history and specific regulations. He/she becomes familiar with the organization of competitions and the recreational and tourist events. Through group cooperation and discipline, the classes develop self-esteem and instill life-long health-promoting attitudes.
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)
K01	The student observes the rules of "fair play" on the sports field and in everyday life. He/she promotes the social and cultural importance of sport and exercise and cultivates his/her own preferences related to physical culture.		
U01	The student uses sports facilities and equipment in a safe way, practices the correct warm-up and, if necessary, implements appropriate safety measures when exercising.		
U02	The student is able to properly analyze the level of their own physical fitness and motor skills.		
U03	The student is able to cooperate in a group and assume various roles: creating and supporting the attitudes of others, following the instructions of the coach or the teacher, as well as competition, rivalry and responsibility.		
W01	The student has knowledge pertaining to the impact of physical exercise on human health. He/she knows the body needs and the forms of physical activity needed to maintain health, as well as the consequences and risks associated with the lack of exercise.		
W02	The student knows the rules and regulation, rules of the games and the history of the chosen form of exercise.		

9.	Methods of conducting classes	
Code	**Category**	**Name (description)**
b03	Problem-solving methods	Activating method – educational games *learning content in the guise of a rule- and/or principle-based game; conducted in a deliberately arranged situation based on the description of relevant facts and processes; learners compete with one another within the framework of rules laid down by the academic teacher; varieties include simulation games – involving a simulation of real situations; decision games – based on the decision-making process and the recognition of the consequences of the decisions made (e.g., a decision tree); psychological games – increasing the emotional-volitional component of the participants' attitudes*
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*
e05	Practical methods	Internship *including professional and individual training; gaining skills and experience in real-life conditions, e.g., in the environment, institution or workplace the student is preparing for by following a specific study programme; training in real working conditions*
e06	Practical methods	Observation *also conducted as fieldwork; a method of watching phenomena, objects or people in a systematic/planned way in order to gain knowledge about them; perceptual separation of elements of a model action as an element of learning through imitation; a complex system of cognition based on sensory experiences*

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**
01	practical classes	30	course work	K01, U01, U02, U03, W01, W02	b03, c06, e05, e06

11.	The student's work, apart from participation in classes, includes in particular:		
Code	**Category**	**Name (description)**	**Is it part of the BUNA?**
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

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.

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

7.	General information about the module
Module name	**Quaternary geology**
Module code	W2-GE-S1-415
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	Celem modułu „Geologia czwartorzędu” jest zapoznanie studentów z młodszym okresem ery kenozoicznej w kontekście budowy geologicznej (rozpoznawanie osadów glacjalnych i wodnolodowcowych oraz poznanie głównych form polodowcowej rzeźby terenu, ich genezy oraz podstawowych procesów, które je ukształtowały), zmian klimatu i ich przyczyn (zlodowacenia i interglacjały), przemian roślinności, wymierania megafauny oraz współczesnych zagrożeń pod kątem wpływu człowieka na współczesne procesy geologiczne. Po osiągnięciu efektów kształcenia modułu student jest przygotowany do samodzielnego rozpoznawania i klasyfikacji polodowcowych form rzeźby terenu, zna klasyfikację osadów lodowcowych i wodnolodowcowych oraz rozumie ich związek z procesami geologicznymi i cechami budowy geologicznej. Potrafi wykonać i interpretować przekroje geologiczne przez osady czwartorzędowe na podstawie danych z profili wiertniczych. Zdobywa wiedzę umożliwiającą pogłębienie wyobraźni przestrzennej. Potrafi zrekonstruować środowiska glacjalne oraz dokonać ich analizy. Rozumie współczesne zagrożenia cywilizacyjne i ich wpływ na środowisko i procesy geologiczne, dostrzega, że wszelkie działania w geologii mają nierozerwalny związek ze środowiskiem, kształtują je i muszą być podporządkowane etyce ekologicznej.
List of modules that must be completed before starting this module (if necessary)	[W2-GE-S1-405] zna instrumenty ochrony środowiska przed oddziaływaniem prac geologicznych i górniczych [W2-GE-S1-406] Dynamic Earth 2 [W2-GE-S1-017] Geoinformation [W2-GE-S1-034] Petrology 1 [W2-GE-S1-042] Petrology 2 [W2-GE-S1-021] Sourcing of geological informaction [W2-GE-S1-032] Sedimentology

8. Learning outcomes of the module

Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
W2-GE-S1-415_1	zna podstawowe pojęcia z zakresu geologii czwartorzędu i pogłębia wiedzę w zakresie tej problematyki	1GE_U8 1GE_W1 1GE_W5	2 1 2
W2-GE-S1-415_2	klasyfikuje genetycznie i charakteryzuje osady oraz formy akumulacji wodnolodowcowej i lodowcowej, a także formy strefy peryglacjalnej, potrafi je nazwać i opisać	1GE_U3 1GE_W1	3 2

		1GE_W5	2
W2-GE-S1-415_3	zna metody badawcze geologii czwartorzędu i wie w jakim celu się je stosuje	1GE_U1 1GE_U2	3 2
W2-GE-S1-415_4	zna przyczyny zmian klimatycznych i ich skutki dla środowiska	1GE_U1 1GE_W1 1GE_W2	3 1 1
W2-GE-S1-415_5	ma umiejętność konstruowania przekrojów geologicznych przez osady czwartorzędowe, oraz ich interpretacji, wykorzystując do tego wiedzę o procesach kształtujących różne formy terenu	1GE_K1 1GE_K2 1GE_U1 1GE_U3 1GE_W5	1 1 3 2 2
W2-GE-S1-415_6	zna relacje pomiędzy działaniem człowieka a stanem środowiska i zmianami klimatycznymi w holocenie, krytycznie analizuje działania człowieka w środowisku; stara się postępować zgodnie z zasadami etyki ekologicznej	1GE_K1 1GE_K2 1GE_K3 1GE_W2	2 2 1 2
W2-GE-S1-415_7	wykazuje aktywną postawę do poznawania rzeczy nowych i wykorzystywania ich dla wzbogacania własnej wiedzy; krytycznego i twórczego myślenia oraz otwartości na poglądy innych	1GE_K2 1GE_K4 1GE_K6 1GE_U7 1GE_U8	2 1 2 1 2

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*
a02	Lecture methods / expository methods	Monographic lecture *an exhaustive discussion of one issue, usually related to the research interests of the person teaching the course or a thorough presentation of one selected issue*
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*
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*
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
b04	Problem-solving methods	Activating method – discussion / debate *an exchange of views supported by substantive arguments leading to a clash of different views, a compromise or the identification of common positions; it proceeds according to previously agreed-upon rules regarding the time, manner and turn-taking as well as the principles of civil discourse; a discussion is not a competition but aims at finding the best solutions or presenting different points of view; its varieties include brainstorming, Oxford-style debate, panel discussion, decision tree, conference discussion; a debate is an orderly dispute between supporters and opponents of a viewpoint, usually specialists in the field or pre-selected representatives of a group dealing with a common problem*
b07	Problem-solving methods	Activating methods: a case study *a comprehensive description of a phenomenon connected with the selected discipline; reflecting the reality, presenting the 'what', 'where' and 'how' of the phenomenon, i.e., all of its key aspects to be discussed in class; used as a reproduction, presentation, discussion or diagnosis of factors that shape the phenomenon or interact with it; an in-depth qualitative analysis and evaluation of a selected phenomenon*
b09	Problem-solving methods	Activating method – flipped classroom *anticipatory learning; work in class is based on previously studied material indicated by the person teaching the course; preparation outside the classroom serves the purpose of getting familiar with the issues whose knowledge is necessary for participating in the in-class discussion and the training in the related practical skills; the activity is based on the work of students under the guidance of the person teaching the course*
b10	Problem-solving methods	SWOT analysis *a method of analyzing a phenomenon/action/work of an institution, employed to organize information and solve problems; applied in strategic planning, project implementation or solving a business or organizational problem; a universal tool to be used in the initial stage of a strategic analysis which involves sorting information about a problem into four categories: strengths and weaknesses, opportunities and threats; SWOT analysis makes it possible to determine the factors in favour of a project and its chances for success, as well as eliminating or reducing negative factors and threats to the project at the stage of early diagnosis*
c01	Demonstration methods	Exhibition *preparing an object for public display and displaying it in order to elicit a specific reaction; creating a themed collection of specimens/objects/works to illustrate a specific issue*
c04	Demonstration methods	Drama performance *an art workshop: preparation and performance of a dramatic piece or other work of theatrical art involving the participation of people acting out assigned roles; performing a play in front of an audience*
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*
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*
d04	Programmed learning methods	Reconstruction / reproduction *proceeding according to the indicated/displayed pattern/model; e.g., the reconstruction of a structure, model, image, etc.*

e07	Practical methods	Simulation *an indirect method; imitating reality in order to gain experience approximating a real one; recreating a real-world situation so that its participant can acquire an experience close to the authentic one; work on “replacement” material*
f02	Methods of self-learning	Individual work with a text *searching for and acquiring new information using textbooks and other written sources (including their digital versions); searching for texts, selecting fragments for analysis/interpretation, using other texts to solve a problem related to the studied issue*

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-GE-S1-415_L_1	laboratory classes	24	course work	W2-GE-S1-415_2, W2-GE-S1-415_3, W2-GE-S1-415_5, W2-GE-S1-415_6, W2-GE-S1-415_7	a03, b07, b09, b10, c01, c04, c07, d01, d03, d04, e07, f02
W2-GE-S1-415_W_1	lecture	12	course work	W2-GE-S1-415_1, W2-GE-S1-415_2, W2-GE-S1-415_3, W2-GE-S1-415_4, W2-GE-S1-415_6	a01, a02, b01, b02, b04

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
b02	Consulting the curriculum and the organization of classes	Verification / adjustment / discussion of syllabus provisions *consulting the content of the syllabus, possibly in the presence of the year tutor or members of the class group, and, if necessary, reassessing the provisions concerning special conditions for class participation, e.g., space and time requirements, technical and other requirements, including conditions for participation in classes outside the walls of the university, classes organized in blocks, organized online, etc.*	No
b03	Consulting the curriculum and the organization of classes	Consulting the schedule *getting acquainted with the class schedule, possibly in the presence of the year tutor, in order to optimize participation in classes, including those supplementary to the core subjects listed in the pursued study programme*	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
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

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.

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

7.	General information about the module
Module name	**Regional geology of Poland**
Module code	W2-GE-S1-051
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	Moduł Geologia regionalna Polski ma umożliwić studentowi poznanie budowy geologicznej poszczególnych regionów Polski, oraz procesów które przyczyniły się do powstania poszczególnych jednostek geologicznych kraju. Student nabywa wiedzę w zakresie geologii poszczególnych regionów kraju pod względem tektoniki, litologii, stratygrafii oraz historii rozwoju poszczególnych jednostek geologicznych. Dzięki temu student uzyskuje syntetyczną wiedzę na temat rozwoju geologicznego Polski, a w wyniki samodzielnego studiowania literatury, winien zgłębić wiedzę w zakresie szczegółowych aspektów geologicznych danych regionów i jednostek geologicznych. Dzięki nabytej wiedzy, student będzie miał również świadomość ochrony unikatowych pod względem naukowym i edukacyjnym stanowisk geologicznych w różnych regionach naszego kraju.
List of modules that must be completed before starting this module (if necessary)	[W2-GE-S1-405] zna instrumenty ochrony środowiska przed oddziaływaniem prac geologicznych i górniczych [W2-GE-S1-406] Dynamic Earth 2 [W2-GE-S1-022] Historical geology and stratigraphy [W2-GE-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-GE-S1-051_1	zna jednostki geologiczno-strukturalne na terenie administracyjnym Polski i częściowo krajów ościennych, ich budowę geologiczną oraz historię powstania i rozwoju.	1GE_W2	2
W2-GE-S1-051_2	potrafi wskazać na mapach regionalne jednostki geologiczne Polski, potrafi narysować i interpretować ich przekroje geologiczne i generować modele wgłębnej budowy geologicznej	1GE_U1	2
W2-GE-S1-051_3	potrafi dyskutować, wyrażać swoje poglądy na temat budowy geologicznej Polski; sprawnie wyszukuje informacje w literaturze, również w języku obcym	1GE_U1 1GE_U6	2 2
W2-GE-S1-051_4	jest zdolny do syntetycznego przedstawienia geologii wybranych jednostek i obszarów Polski na podstawie analizy geologicznej; zdaje sobie sprawę z unikalności niektórych stanowisk geologicznych	1GE_K1 1GE_K3 1GE_K6	3 2 1
W2-GE-S1-051_5	wykazuje aktywną postawę do poznawania rzeczy nowych i wykorzystywania ich dla wzbogacania własnej wiedzy; stara się uczyć samodzielnie w oparciu o dostępną literaturę, krytycznie oceniając stan własnej wiedzy	1GE_K2	3

9.	Methods of conducting classes	
Code	**Category**	**Name (description)**
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*

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-GE-S1-051_L_1	laboratory classes	24	exam	W2-GE-S1-051_1, W2-GE-S1-051_2, W2-GE-S1-051_3, W2-GE-S1-051_4, W2-GE-S1-051_5	c06, c07, d03
W2-GE-S1-051_W_1	lecture	12	exam	W2-GE-S1-051_1, W2-GE-S1-051_3, W2-GE-S1-051_4, W2-GE-S1-051_5	c07

11.	The student's work, apart from participation in classes, includes in particular:		
Code	**Category**	**Name (description)**	**Is it part of the BUNA?**
c01	Preparation for verification of learning outcomes	Determining the stages of task implementation contributing to the verification of learning outcomes *devising a task implementation strategy embracing the division of content, the range of activities, implementation time and/or the method(s) of obtaining the necessary materials and tools, etc.*	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
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
d01	Consulting the results of the verification of learning outcomes	Analysis of the corrective feedback provided by the academic teacher on the results of the verification of learning outcomes *reading through the academic teacher’s comments, assessments and opinions on the implementation*	No

		of the task aimed at checking the level of the achieved learning outcomes	
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

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.

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

7.	**General information about the module**
Module name	**Sedimentology**
Module code	W2-GE-S1-032
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	Celem modułu Sedymentologia jest poznanie zjawisk i procesów prowadzących do powstawania skał osadowych, poznanie środowisk sedymentacji stwarzających określone warunki i stanowiących przestrzeń dla formowania się osadów, a także czynników wpływających na przebieg procesów sedymentacji. Kurs stwarza możliwość nabycie praktycznych umiejętności badania sukcesji skalnych. Student poznaje współczesne i kopalne skały osadowe oraz środowiska ich powstawania. Poznaje zasady analizy i interpretacji zapisu osadowego, metodykę badań sedymentologicznych oraz jej związek z innymi naukami przyrodniczymi. Dostrzega zależności między zapisem skalnym, a różnego rodzaju procesami przyrodniczymi. Dostrzega ważność ochrony środowiska przyrodniczego. Obserwuje, analizuje, stawia pytania i wyciąga wnioski.
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-GE-S1-032_1	ma wiedzę o tym, czym się zajmuje sedymentologia, jaki ma związek z innymi naukami przyrodniczymi; zna podstawowe pojęcia i metody badawcze stosowane w sedymentologii	1GE_K1 1GE_K2 1GE_U1 1GE_U2 1GE_W3	3 2 2 1 3
W2-GE-S1-032_2	zna czynniki i zjawiska (fizyczne, chemiczne, biologiczne) wpływające na przebieg procesów sedymentacji i charakter powstających osadów	1GE_U1 1GE_W1	3 3
W2-GE-S1-032_3	zna składniki skały osadowej, wymienia cechy tekstury i struktury osadu, definiuje warunki ich powstania, zna metody ich badania i umie je zastosować	1GE_U1 1GE_U2 1GE_W1	2 3 3
W2-GE-	makroskopowo rozpoznaje i opisuje skałę osadową i składniki ją budujące, rozumie zastosowane terminy i potrafi je	1GE_U1	3

S1-032_4	wyjaśnić	1GE_W1	1
W2-GE-S1-032_5	zna, charakteryzuje i rekonstruuje kopalne i współczesne środowiska sedymentacyjne, i wiąże je z konkretnymi typami osadów/skał	1GE_U1 1GE_W1	3 3
W2-GE-S1-032_6	kształci umiejętność obserwacji, analizowania, wyciągania wniosków i uogólniania wiadomości; formułuje opinie	1GE_K1 1GE_K2 1GE_U3 1GE_U4 1GE_U8 1GE_W1 1GE_W2	2 2 2 2 2 3 1
W2-GE-S1-032_7	rozumie potrzebę ochrony środowiska przyrodniczego, rozróżnia negatywny i pozytywny wpływ człowieka na środowisko naturalne	1GE_K2 1GE_W2	2 2
W2-GE-S1-032_8	wyszukuje i właściwie wykorzystuje literaturę fachową w języku ojczystym i obcym	1GE_K1 1GE_K2	2 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*
b08	Problem-solving methods	Activating method – peer learning *learning through the exchange of knowledge in a group/team/pair of students, i.e., in the so-called learning cell; a kind of mutual learning; an approach focused on student activity under the guidance of the person teaching the course; a learning situation where students with a similar level of experience learn from one another*
b09	Problem-solving methods	Activating method – flipped classroom *anticipatory learning; work in class is based on previously studied material indicated by the person teaching the course; preparation outside the classroom serves the purpose of getting familiar with the issues whose knowledge is necessary for participating in the in-class discussion and the training in the related practical skills; the activity is based on the work of students under the guidance of the person teaching the course*
c01	Demonstration methods	Exhibition *preparing an object for public display and displaying it in order to elicit a specific reaction; creating a themed collection of specimens/objects/works to illustrate a specific issue*

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*
d04	Programmed learning methods	Reconstruction / reproduction *proceeding according to the indicated/displayed pattern/model; e.g., the reconstruction of a structure, model, image, etc.*
e03	Practical methods	Creation/production – creative workshop *an activity involving creating/producing a work/artifact based on the individual, creative effort of the participant; the creative workshop is characterized by the presence and openness which make it possible to access the essence of the work/ peculiarity of the artifact at every stage of its creation/production*
e04	Practical methods	Project scheduling *proceeding according to the steps proposed within a specific methodology for the completion of a task; e.g., identifying project objectives, determining the result, identifying strengths, limitations, opportunities and threats (SWOT), establishing a schedule of activities, assessing resources, establishing an implementation plan; the initial diagnosis; the reassessment of assumptions; the process of preparing the practical implementation of a project*

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-GE-S1-032_L_1	laboratory classes	24	exam	W2-GE-S1-032_1, W2-GE-S1-032_3, W2-GE-S1-032_4, W2-GE-S1-032_6, W2-GE-S1-032_8	a03, b08, b09, c01, c06, c07, d04, e03, e04
W2-GE-S1-032_W_1	lecture	24	exam	W2-GE-S1-032_1, W2-GE-S1-032_2, W2-GE-S1-032_5, W2-GE-S1-032_7, W2-GE-S1-032_8	a01, b02

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*	No

		developed during previous classes or new skills necessary for the implementation of subsequent elements of the curriculum (as preparation for class participation)	
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
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
d01	Consulting the results of the verification of learning outcomes	Analysis of the corrective feedback provided by the academic teacher on the results of the verification of learning outcomes *reading through the academic teacher's comments, assessments and opinions on the implementation of the task aimed at checking the level of the achieved learning outcomes*	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

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.

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

7.	**General information about the module**
Module name	**Sedimentology – field course**
Module code	W2-GE-S1-423
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	Ćwiczenia terenowe z sedymentologii realizowane są podczas objazdowej wycieczki odbywającej się na obszarze Beskidów, zapadliska przedkarpackiego i przyległych wyżyn. Celem modułu jest zapoznanie studentów z kopalnym zapisem różnorodnych lądowych i morskich środowisk sedymentacji oraz przykładami współczesnych środowisk sedymentacji, ich uwarunkowaniami i osadami. Kurs stwarza możliwość nabycia umiejętności przeprowadzania obserwacji terenowych, opisu, analizy i interpretacji zapisu skalnego. Student ćwiczy umiejętności profilowania skał osadowych, szkicowania odsłonięć, wykonywania analizy paleoprądów, a także rekonstruowania środowiska sedymentacji. Dokonuje również obserwacji współcześnie zachodzących procesów. Student zdobywa umiejętność pracy terenowej w kilkuosobowej grupie, stawia problemy i szuka ich rozwiązania.
List of modules that must be completed before starting this module (if necessary)	[W2-GE-S1-032] Sedimentology

8. Learning outcomes of the module

Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
W2-GE-S1-063_1	zna metody badań stosowane w sedymentologii, zwłaszcza w czasie prac terenowych; zna podstawową terminologię sedymentologiczną; zna zasady higieny i bezpieczeństwa pracy w terenie	1GE_U1 1GE_W1 1GE_W3	2 2 1
W2-GE-S1-063_2	identyfikuje i charakteryzuje współczesne środowiska sedymentacji; na podstawie zapisu osadowego rozpoznaje oraz identyfikuje główne cechy kopalnych środowisk sedymentacji	1GE_U1 1GE_U2 1GE_U3 1GE_W1	2 1 2 3
W2-GE-S1-063_3	rozpoznaje skałę osadową i składniki, które ją budują; umie wskazać i opisać strukturę i teksturę skały i na ich podstawie scharakteryzować mechanizmy oraz warunki sedymentacji; sprawnie posługuje się terminologią sedymentologiczną	1GE_U1 1GE_U3 1GE_W1	1 3 2
W2-GE-	zna zasady tworzenia oraz umie wykonać profil litologiczny, potrafi zastosować kod litofacjalny, umie wykonać szkic	1GE_U1	2

S1-063_4	odsłonięcia, prowadzić notatnik terenowy; pracuje samodzielnie i w grupie	1GE_U2 1GE_U4 1GE_U6 1GE_U7 1GE_W1	1 2 2 1 2
W2-GE-S1-063_5	umie wykonać pomiary kierunków paleoprzepływu; przeprowadza analizę statystyczną pomiarów i nanosi wyniki na diagram rozetowy	1GE_U1 1GE_U2 1GE_W1	2 2 2
W2-GE-S1-063_6	zadaje pytania i formułuje opinie na temat zagadnień sedymentologicznych i geologii skał osadowych	1GE_K1 1GE_K2 1GE_U1 1GE_U3 1GE_U4 1GE_U7	2 2 1 2 3 1
W2-GE-S1-423_7	pracuje w grupie (jako lider i wykonawca); przejawia aktywną postawę w czasie badań terenowych	1GE_U2 1GE_U3 1GE_U4 1GE_U6 1GE_U7 1GE_U8	1 1 2 2 3 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*
b08	Problem-solving methods	Activating method – peer learning *learning through the exchange of knowledge in a group/team/pair of students, i.e., in the so-called learning cell; a kind of mutual learning; an approach focused on student activity under the guidance of the person teaching the course; a learning situation where students with a similar level of experience learn from one another*
b09	Problem-solving methods	Activating method – flipped classroom *anticipatory learning; work in class is based on previously studied material indicated by the person teaching the course; preparation outside the classroom serves the purpose of getting familiar with the issues whose knowledge is necessary for participating in the in-class discussion and the training in the related practical skills; the activity is based on the work of students under the guidance of the person teaching the course*
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
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.*
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*
e03	Practical methods	Creation/production – creative workshop *an activity involving creating/producing a work/artifact based on the individual, creative effort of the participant; the creative workshop is characterized by the presence and openness which make it possible to access the essence of the work/ peculiarity of the artifact at every stage of its creation/production*
e05	Practical methods	Internship *including professional and individual training; gaining skills and experience in real-life conditions, e.g., in the environment, institution or workplace the student is preparing for by following a specific study programme; training in real working conditions*
e06	Practical methods	Observation *also conducted as fieldwork; a method of watching phenomena, objects or people in a systematic/planned way in order to gain knowledge about them; perceptual separation of elements of a model action as an element of learning through imitation; a complex system of cognition based on sensory experiences*
e08	Practical methods	Practice-as-research *also conducted as fieldwork; an activity aimed at confronting the acquired theory with practice through its practical application; students situate themselves in the reality they observe, study and transform through the prism of the theory; the method of practical classes is dominated by the application of knowledge to solving practical tasks*
f03	Methods of self-learning	Conceptual work *a (mainly intellectual) activity carried out independently (or in a selected group) resulting in the creation of a concept, idea or project; creating a plan based on a vision; developing a general outline of a project; producing a simplified sketch of the variant versions of a procedure/product/work*

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-GE-S1-423_CT	field practice	36	course work	W2-GE-S1-063_1, W2-GE-S1-063_2, W2-GE-S1-063_3, W2-GE-S1-063_4, W2-GE-S1-063_5, W2-GE-S1-063_6, W2-GE-S1-423_7	a01, b08, b09, c07, d02, e01, e03, e05, e06, e08, f03

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

Code	Category	Name (description)	Is it part of the BUNA?
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*	No

		elements of the curriculum (as preparation for class participation)	
c01	Preparation for verification of learning outcomes	Determining the stages of task implementation contributing to the verification of learning outcomes *devising a task implementation strategy embracing the division of content, the range of activities, implementation time and/or the method(s) of obtaining the necessary materials and tools, etc.*	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
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
d01	Consulting the results of the verification of learning outcomes	Analysis of the corrective feedback provided by the academic teacher on the results of the verification of learning outcomes *reading through the academic teacher's comments, assessments and opinions on the implementation of the task aimed at checking the level of the achieved learning outcomes*	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.

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

7.	**General information about the module**
Module name	**Selected elements of geography**
Module code	W2-GE-S1-013
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	Celem propedeutycznego modułu Wybrane elementy geografii jest powtórzenie i ewentualne uzupełnienie wiedzy ogólnogeograficznej dotyczącej: sposobów orientowania się w terenie (ustalania kierunków świata, współrzędnych geograficznych, azymutów); regionalizacji fizycznogeograficznej Polski na tle Europy (zwrócenie uwagi na oficjalne nazwy jednostek geograficznych, ich położenie i granice); sieci hydrograficznej (położenie najważniejszych rzek) i jezior na terenie Polski i Europy; podziału administracyjnego Polski wraz z położeniem najważniejszych miast. Student nabywa podstawowe umiejętności samodzielnego określania swojego położenia w terenie, potrzebną do realizacji większości przyszłych zajęć terenowych oraz realizacji prac dyplomowych. Znajomość położenia podstawowych obiektów geograficznych pomaga w ogólnej orientacji i lepszym zrozumieniu treści przekazywanych w kolejnych modułach. Student nabywa umiejętność samodzielnego poszukiwania informacji na podstawie różnego typu map i atlasów przydatnych w dalszych studiach oraz stosowania odpowiednich nazw geograficznych w opracowaniach geologicznych.
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-GE-S1-013_1	zna podstawowe pojęcia z zakresu geografii ogólnej i fizycznej oraz nazwy najważniejszych obiektów geograficznych	1GE_W1 1GE_W5	1 3
W2-GE-S1-013_2	potrafi wskazać na mapach najważniejsze regiony fizycznogeograficzne Polski i Europy, rzeki i jeziora oraz najważniejsze miasta; potrafi stosować odpowiednie nazewnictwo geograficzne do przygotowywania opracowań geologicznych	1GE_U1 1GE_U3	1 1
W2-GE-S1-013_3	potrafi wyznaczać na mapach topograficznych współrzędne geograficzne oraz azymuty kierunków	1GE_U1 1GE_U6	1 2
W2-GE-S1-013_4	jest świadomy przydatności wiedzy ogólno geograficznej wykorzystywanej w większości późniejszych modułów oraz do przygotowania pracy dyplomowej;	1GE_K1	3
W2-GE-	wykazuje aktywną postawę do poznawania rzeczy nowych i wykorzystywania ich dla wzbogacania własnej wiedzy; stara	1GE_K2	3

S1-013_5	się uczyć samodzielnie w oparciu o dostępną literaturę, krytycznie oceniając stan własnej wiedzy		

9. Methods of conducting classes

Code	Category	Name (description)
b07	Problem-solving methods	Activating methods: a case study *a comprehensive description of a phenomenon connected with the selected discipline; reflecting the reality, presenting the 'what', 'where' and 'how' of the phenomenon, i.e., all of its key aspects to be discussed in class; used as a reproduction, presentation, discussion or diagnosis of factors that shape the phenomenon or interact with it; an in-depth qualitative analysis and evaluation of a selected phenomenon*
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*

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-GE-S1-013_L_1	laboratory classes	18	course work	W2-GE-S1-013_1, W2-GE-S1-013_2, W2-GE-S1-013_3, W2-GE-S1-013_4, W2-GE-S1-013_5	b07, c06
W2-GE-S1-013_W_1	lecture	6	course work	W2-GE-S1-013_1, W2-GE-S1-013_4, W2-GE-S1-013_5	c07

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

Code	Category	Name (description)	Is it part of the BUNA?
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
c01	Preparation for verification of learning outcomes	Determining the stages of task implementation contributing to the verification of learning outcomes *devising a task implementation strategy embracing the division of content, the range of activities, implementation time and/or the method(s) of obtaining the necessary materials and tools, etc.*	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
c03	Preparation for verification of learning outcomes	Implementation of an individual or group assignment necessary for course/phase/	No

		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*	
d01	Consulting the results of the verification of learning outcomes	Analysis of the corrective feedback provided by the academic teacher on the results of the verification of learning outcomes *reading through the academic teacher's comments, assessments and opinions on the implementation of the task aimed at checking the level of the achieved learning outcomes*	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

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.

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

7.	General information about the module
Module name	**Selected mathematics problems for geologists**
Module code	W2-GE-S1-010
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	opanowanie materiału z modułu wymaga postrzegania matematyki i rachunku prawdopodobieństwa jako narzędzi opisu wielu zagadnień teoretycznych i praktycznych. W ramach modułu student zapozna się z podstawami analizy matematycznej, algebry, logiki i rachunku prawdopodobieństwa, które mogą być wykorzystywane w dalszym kształceniu, w tym w trakcie przygotowania pracy dyplomowej.
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-GE-S1-010 _1	przyswoi podstawowe pojęcia i metody obliczeniowe stosowane w naukach o Ziemi.	1GE_K1 1GE_W1 1GE_W2	1 1 1
W2-GE-S1-010 _2	będzie potrafił przeprowadzić krytyczną dyskusję posiadanej wiedzy i umiejętności.	1GE_K1 1GE_U1	2 1
W2-GE-S1-010 _3	dostrzeże konieczność stosowania metod obliczeniowych w opisie zjawisk geologicznych.	1GE_K2 1GE_U1	2 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*
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-GE-S1-010_L_1	laboratory classes	24	course work	W2-GE-S1-010 _1, W2-GE-S1-010 _2, W2-GE-S1-010 _3	e01
W2-GE-S1-010_W_1	lecture	6	course work	W2-GE-S1-010 _1, W2-GE-S1-010 _2, W2-GE-S1-010 _3	a01

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
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

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.

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

7.	**General information about the module**
Module name	**Sourcing of geological informaction**
Module code	W2-GE-S1-021
Number of the ECTS credits	1
Language of instruction	Polish
Purpose and description of the content of education	Kurs prezentuje studentom proces tworzenia geologicznych zasobów informatycznych – w jaki sposób obserwacje stają się informacją cyfrową stanowiącą treść geologicznych baz danych, których zawartość wykorzystują geolodzy oraz inni specjaliści z zakresu nauk o Ziemi.
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-GE-S1-021_1	kurs prezentuje studentom proces tworzenia geologicznych zasobów informatycznych – w jaki sposób obserwacje stają się informacją cyfrową stanowiącą treść geologicznych baz danych, których zawartość wykorzystują geolodzy oraz inni specjaliści z zakresu nauk o Ziemi generowania cyfrowej informacji geologicznej w oparciu o obserwacje terenowe i laboratoryjne.	1GE_U1 1GE_W1	1 1
W2-GE-S1-021_2	studenci zapoznają się z przykładami oprogramowania, procedur stosowanych do generowania informacji stanowiącej treść cyfrowych geologicznych baz danych.	1GE_K2	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*
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
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*
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*

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-GE-S1-021_L_1	laboratory classes	12	course work	W2-GE-S1-021_1, W2-GE-S1-021_2	a01, a03, b01, d01, d03

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
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
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.

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

7.	General information about the module
Module name	**Statistical methods in geology**
Module code	W2-GE-S1-024
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	Moduł Metody statystyczne w geologii obejmuje zajęcia laboratoryjne prowadzone z wykorzystaniem komputera i specjalistycznego oprogramowania. Na zajęciach student zapoznaje się z podstawowymi pojęciami i definicjami rachunku prawdopodobieństwa i statystyki ogólnej, z najważniejszymi typami rozkładów zmiennych losowych oraz ich parametrami, metodami estymacji punktowej i przedziałowej miar rozkładów oraz sposobami testowania hipotez statystycznych. Dodatkowo omawiana jest korelacja i regresja dwóch zmiennych losowych rozszerzona następnie na większą liczbę zmiennych. Studenci wykonują zadania obliczeniowe, których treść odpowiada zagadnieniom geologicznym.
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-GE-S1-024_1	student zna podstawowe pojęcia statystyki matematycznej	1GE_W1 1GE_W3	2 2
W2-GE-S1-024_2	potrafi scharakteryzować metody statystyczne wykorzystywane w naukach o Ziemi.	1GE_U1	1
W2-GE-S1-024_3	jest w stanie wykonywać obliczenia zawiązane z analizą danych wykorzystując odpowoednie programy komputerowe i interpretować uzyskane wyniki.	1GE_K1 1GE_K2 1GE_U1 1GE_U2	2 2 2 2

9. Methods of conducting classes

Code	Category	Name (description)
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-GE-S1-024_L_1	laboratory classes	24	course work	W2-GE-S1-024_1, W2-GE-S1-024_2, W2-GE-S1-024_3	e01

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

Code	Category	Name (description)	Is it part of the BUNA?
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
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

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.

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

7.	General information about the module
Module name	**Tectonics and Structural Geology**
Module code	W2-GE-S1-410
Number of the ECTS credits	4
Language of instruction	Polish
Purpose and description of the content of education	Celem modułu "Tektonika i geologia strukturalna" jest umożliwienie zrozumienia przyczyn, przebiegu i skutków procesów deformacyjnych w ramach tektoniki płyt litosfery oraz podstawowych metod ich badania. Zakres modułu obejmuje poznanie mechanicznych właściwości skał, mechanizmów procesów tektonicznych, właściwości deformacyjnych skał, zrozumienie genezy i działania sił oraz naprężeń w skałach. Studenci zapoznają się z genetycznymi i geometrycznymi cechami deformacji oraz klasyfikacją struktur, w tym mikrostruktur, mezostruktur, makrostruktur i megastruktur, a także struktur nietektonicznych, paratektonicznych, grawitacyjnych i tektonicznych, struktur ciągłych i nieciągłych. Program obejmuje klasyfikację fałdów, uskoków oraz spękań, zrozumienie mechanizmów działających w strefach ścinania, omówienie struktur tektonicznych, tektoniki ciał magmowych, kompleksów metamorficznych, glacitektoniki, tektoniki solnej, morfotektoniki oraz aktywnej tektoniki. Ponadto, studenci poznają ewolucję Ziemi i skorupy ziemskiej oraz cykl orogeniczny. W ramach praktycznych zajęć laboratoryjnych studenci nabywają umiejętności przydatnych w dalszych studiach, takich jak obserwacja, samodzielne wnioskowanie oraz pisemne syntetyzowanie zebranych danych. Zajęcia te obejmują również bardziej szczegółowe umiejętności związane z rekonstruowaniem nadrzędnych form strukturalnych, wiekowego następstwa struktur, kierunku i zwrotu transportu tektonicznego, osi skracania i poszerzania, osi głównych naprężeń oraz charakteru i stylu deformacji.
List of modules that must be completed before starting this module (if necessary)	[W2-GE-S1-405] zna instrumenty ochrony środowiska przed oddziaływaniem prac geologicznych i górniczych [W2-GE-S1-406] Dynamic Earth 2 [W2-GE-S1-010] Selected mathematics problems for geologists

8. Learning outcomes of the module

Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
W2-GE-S1-410_1	zna podstawową terminologię, cele i pojęcia używane w tektonice oraz metody analizy strukturalnej	1GE_K2 1GE_U1 1GE_W1	1 1 3
W2-GE-S1-410_2	potrafi określić własności reologiczne skał oraz mechanizmy zachodzące podczas procesów tektonicznych	1GE_W1	2
W2-GE-S1-410_3	zna genezę, mechanizmy powstawania i ewolucję struktur tektonicznych uformowanych w różnych warunkach i reżimach deformacyjnych oraz potrafi je identyfikować	1GE_K2 1GE_U2	1 1

		1GE_W1 1GE_W2	1 1
W2-GE-S1-410_4	rozumie i potrafi zrekonstruować naprężenia w skałach oraz geometrię deformacji, wiekowe następstwo struktur, kierunek i zwrot transportu tektonicznego, osie skracania i poszerzania, osie głównych naprężeń oraz charakter i styl deformacji	1GE_K2 1GE_U1 1GE_U2 1GE_W1 1GE_W2	1 1 2 2 1
W2-GE-S1-410_5	zna i rozumie ewolucję Ziemi i skorupy ziemskiej, cyklu orogenicznego, tektoniki płyt litosfery	1GE_K2 1GE_U3 1GE_U4 1GE_W1 1GE_W2	1 1 1 2 1
W2-GE-S1-410_6	wykazuje aktywną postawę do poznawania rzeczy nowych i wykorzystywania ich dla wzbogacania własnej wiedzy; krytycznego i twórczego myślenia oraz otwartości na poglądy innych	1GE_K1 1GE_K2 1GE_K3 1GE_K4 1GE_U3 1GE_U4 1GE_U8	2 2 1 1 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*
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*
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*
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*
e02	Practical methods	Production exercise – workshop

		an activity involving the creation of an object/product according to the rules/principles/description provided by the academic teacher acting as the workshop master

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-GE-S1-410_L_1	laboratory classes	24	exam	W2-GE-S1-410_1, W2-GE-S1-410_3, W2-GE-S1-410_4, W2-GE-S1-410_6	e01, e02
W2-GE-S1-410_W_1	lecture	24	exam	W2-GE-S1-410_1, W2-GE-S1-410_2, W2-GE-S1-410_3, W2-GE-S1-410_4, W2-GE-S1-410_5	a01, 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?
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
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
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

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.

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

7.	General information about the module
Module name	**Tectonics and Structural Geology (Field classes)**
Module code	W2-GE-S1-426
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	Celem modułu Tektonika i Geologia Strukturalna (ćwiczenia terenowe) jest zdobycie praktycznych umiejętności obserwacji, identyfikacji, opisu i interpretacji struktur tektonicznych, wprawnego posługiwania się kompasem geologicznym, wykonywania podstawowych operacji przestrzennych na siatkach stereograficznych, samodzielna interpretacja zebranych w terenie wyników badań strukturalnych. Końcowym efektem prac terenowych i kameralnych jest raport geologiczno-strukturalny dla wybranych obszarów badawczych.
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-GE-S1-426_1	potrafi zidentyfikować, sklasyfikować i zinterpretować różne struktury tektoniczne w terenie oraz umiejętnie je zaprezentować na rysunkach.	1GE_K2 1GE_U1 1GE_U2 1GE_U3 1GE_U7 1GE_W1	1 1 1 1 1 1
W2-GE-S1-426_2	zna wybrane metody analizy strukturalnej i potrafi je zastosować w oparciu o wykonane pomiary (w tym diagramy punktowe, konturowe i rozetowe, elipsoida naprężeń, wyznaczanie osi fałdu, określanie związku genetycznego spękań z fałdami i uskokami)	1GE_U1 1GE_U2 1GE_U3 1GE_W1	2 1 1 1
W2-GE-S1-426_3	sprawnie posługuje się kompasem geologicznym, zarówno w odniesieniu do elementów linijnych jak i planarnych; posiada umiejętność transpozycji pomiarów tektonicznych w terenie na obraz przestrzenny z wykorzystaniem projekcji stereograficznych	1GE_U1 1GE_U2 1GE_U3	1 2 1

		1GE_U7	1
W2-GE-S1-426_4	potrafi sporządzić raport geologiczno-strukturalny w oparciu o własne obserwacje, pomiary tektoniczne i ich interpretację na diagramach strukturalnych.	1GE_K1 1GE_K2 1GE_K6 1GE_U1 1GE_U2 1GE_U3 1GE_U7 1GE_W1	1 1 3 1 1 3 2 1
W2-GE-S1-426_5	kształtuje umiejętność powiązania obserwacji, analizowania i wnioskowania; ma świadomość, jak ważna jest analiza porównawcza przestrzennej orientacji struktur tektonicznych do formułowania daleko idących wniosków tektogenetycznych	1GE_K1 1GE_K2 1GE_U3 1GE_U4 1GE_U8 1GE_W3	2 2 1 1 1 1

9. Methods of conducting classes

Code	Category	Name (description)
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*
e05	Practical methods	Internship *including professional and individual training; gaining skills and experience in real-life conditions, e.g., in the environment, institution or workplace the student is preparing for by following a specific study programme; training in real working conditions*
e06	Practical methods	Observation *also conducted as fieldwork; a method of watching phenomena, objects or people in a systematic/planned way in order to gain knowledge about them; perceptual separation of elements of a model action as an element of learning through imitation; a complex system of cognition based on sensory experiences*
e09	Practical methods	Plein air session *implementation of a creative task in an open-air area, e.g. outside the studio*
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*
f03	Methods of self-learning	Conceptual work *a (mainly intellectual) activity carried out independently (or in a selected group) resulting in the creation of a concept, idea or project; creating a plan based on a vision; developing a general outline of a project; producing a simplified sketch of the variant versions of a procedure/product/work*

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-GE-S1-426_CT_1	field practice	36	course work	W2-GE-S1-426_1, W2-GE-S1-426_2, W2-GE-S1-426_3, W2-GE-S1-426_4, W2-GE-S1-426_5	e01, e05, e06, e09, f01, f03

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
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
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

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

7.	**General information about the module**
Module name	**zna instrumenty ochrony środowiska przed oddziaływaniem prac geologicznych i górniczych**
Module code	W2-GE-S1-405
Number of the ECTS credits	6
Language of instruction	Polish
Purpose and description of the content of education	Celem modułu Dynamika Ziemi 1 jest wyjaśnienie mechanizmów, przyczyn i skutków procesów geologicznych zachodzących we wnętrzu Ziemi – procesów endogenicznych, tj. diastrofizm (tektonika płyt, trzęsienia ziemi), magmatyzm, metamorfizm oraz przedstawienie metod umożliwiających makroskopowe rozpoznawanie najczęściej występujących skał i minerałów skałotwórczych, co stanowi podstawę do bardziej zaawansowanych badań laboratoryjnych i mikroskopowych. Student poznaje parametry i budowę Ziemi, rozumie mechanizmy i uwarunkowania dynamiki skorupy ziemskiej oraz jej różnorodności strukturalnej. Uzyskuje umiejętność rozpoznawania i charakteryzowania procesów geologicznych zachodzących pod wpływem czynników wewnętrznych oraz zna ich wzajemne powiązania. Student poznaje podstawowe klasyfikacje minerałów i skał oraz zdobywa umiejętność makroskopowego rozpoznawania minerałów i skał wraz z identyfikacją procesów prowadzących do ich powstania. Nabyta wiedza może być podstawą prognozowania przebiegu procesów, w tym katastrof naturalnych, o podłożu geologicznym oraz przewidywania skutków wydarzeń geologicznych zarówno w skali regionalnej, jak i globalnej.
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-GE-S1-405_1	ma wiedzę dotyczącą budowy i ewolucji Ziemi.	1GE_W5	1
W2-GE-S1-405_2	zna i rozumie uwarunkowania, oraz mechanizmy procesów endogenicznych oraz związaną z nimi terminologię geologiczną.	1GE_U1 1GE_W5	1 1
W2-GE-S1-405_3	ma wiedzę dotyczącą zasad tektoniki płyt litosfery. Ma umiejętność wytłumaczenia zjawiska geologicznego w kontekście tektoniki płyt litosfery.	1GE_U1 1GE_W5	1 1
W2-GE-S1-405_4	potrafi rozpoznać najważniejsze minerały skałotwórcze i podstawowe rodzaje skał oraz interpretować warunki ich powstania	1GE_U1 1GE_W5	1 1
W2-GE-	rozumie potrzebę ciągłego poszerzania swojej wiedzy. W sposób zorganizowany potrafi dysponować swoim czasem na	1GE_K1	1

S1-405_5	samodzielne dokształcanie się.	1GE_K2	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*
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*
b03	Problem-solving methods	Activating method – educational games *learning content in the guise of a rule- and/or principle-based game; conducted in a deliberately arranged situation based on the description of relevant facts and processes; learners compete with one another within the framework of rules laid down by the academic teacher; varieties include simulation games – involving a simulation of real situations; decision games – based on the decision-making process and the recognition of the consequences of the decisions made (e.g., a decision tree); psychological games – increasing the emotional-volitional component of the participants' attitudes*
b08	Problem-solving methods	Activating method – peer learning *learning through the exchange of knowledge in a group/team/pair of students, i.e., in the so-called learning cell; a kind of mutual learning; an approach focused on student activity under the guidance of the person teaching the course; a learning situation where students with a similar level of experience learn from one another*
b09	Problem-solving methods	Activating method – flipped classroom *anticipatory learning; work in class is based on previously studied material indicated by the person teaching the course; preparation outside the classroom serves the purpose of getting familiar with the issues whose knowledge is necessary for participating in the in-class discussion and the training in the related practical skills; the activity is based on the work of students under the guidance of the person teaching the course*
c01	Demonstration methods	Exhibition *preparing an object for public display and displaying it in order to elicit a specific reaction; creating a themed collection of specimens/objects/works to illustrate a specific issue*
c02	Demonstration methods	Video show *reproducing a film or video material in its entirety or in fragments in order to illustrate the content taught in class, to submit it to analysis and evaluation or to use it as an exercise in image perception; a film/video can be a work of art, an illustration (also technical illustration) of a content/phenomenon/object, a private record of an action, a media image, etc.*
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*

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-GE-S1-405_L_1	laboratory classes	36	exam	W2-GE-S1-405_4, W2-GE-S1-405_5	b03, b08, b09, c01, c07
W2-GE-S1-405_W	lecture	24	exam	W2-GE-S1-405_1, W2-GE-	a01, b01, c02

_1				S1-405_2, W2-GE-S1-405_3, W2-GE-S1-405_5	

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
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
b02	Consulting the curriculum and the organization of classes	Verification / adjustment / discussion of syllabus provisions *consulting the content of the syllabus, possibly in the presence of the year tutor or members of the class group, and, if necessary, reassessing the provisions concerning special conditions for class participation, e.g., space and time requirements, technical and other requirements, including conditions for participation in classes outside the walls of the university, classes organized in blocks, organized online, etc.*	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 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

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