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

7.	**General information about the module**
Module name	**Anthropogenic Environmental Threats**
Module code	W2-IZ-S1-214
Number of the ECTS credits	4
Language of instruction	Polish
Purpose and description of the content of education	The course aims to present anthropogenic environmental threats, especially to the water environment, soils, and biocenosis. As part of the lectures, the characteristics of anthropogenic factors influencing the changes in water relations and hydrological objects changing the water environment (including land use, water exploitation, urbanization and industrialization, and water pollution) will be made. Spectacular examples of anthropogenic pressure on the hydrosphere related to mining and industry in the Upper Silesian Coal Basin will be presented. The environment of carbonate rocks and the unique evaporite karst under anthropogenic pressure will be characterized. The degree of threat to groundwater from potential pollution sources will be assessed, and a groundwater protection strategy will be presented. The thematic scope of the laboratory includes soil degradation and the impact of agriculture on soil degradation, the USLE model, desertification processes, deforestation, waste management, and quantitative and qualitative changes in surface waters.
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)
U01	is able to apply appropriate methods and tools relating to environmental hazards , including electronic sources and is able to make correct inferences from data from different sources	U03	4
W01	he has advanced knowledge in the field of anthropogenic threats to the environment, knows the terminology used in these sciences and understands the complex conditions of phenomena constituting geohazards He is ready to critically evaluate his knowledge concerning environmental threats, demonstrates the need for constant updating of his field knowledge and improvement of his professional and personal competences.	K01 U01 U03 U09 W01 W02 W03	3 3 3 3 3 3 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*
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*
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*
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-IZ-S1-214_fs_1	lecture	15	exam	W01	a01, b01, b07, c07, d02, d03, f02, f03
W2-IZ-S1-214_fs_2	laboratory classes	15	course work	U01	a01, b07, c07, d02, d03, e01, 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*	Yes
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*	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
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*	Yes
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*	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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Anti-geohazard early warning systems design**
Module code	W2-IZ-S1-313
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	The course aims to familiarise students with the basics of designing early warning systems for geohazards. During the classes, the goals and tasks of early warning systems, processes and cycles of their operation, as well as individual components of selected designs, will be discussed. The course will enable students to broaden their knowledge in the field of monitoring and forecasting directions of changes in selected geohazards. Familiarisation with the basics of geohazard warning activities will allow students to understand the main mechanisms of crisis management.
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)
U01	the student is able to use the information contained in various cartographic materials and spatial databases; is able to prepare elements of environmental documentation in the field of geohazards and prepare simple explanatory texts using available sources of information; skilfully presents the results of the work	U02 U03 U05	1 1 1
U02	the student can carry out the assigned tasks that are elements of designing early warning systems; can formulate questions to deepen the understanding of the topic in the field of geohazards or to complete the missing elements and knows where to look for answers	U01 U07 U09 U13	2 2 1 1
U03	the student is able to design a simple early warning system for a selected geohazard and assess the legitimacy of its introduction in a given area; is able to make a critical analysis of the existing early warning systems for geohazards	U07 U09 U12 U13	1 1 1 1
W01	the student knows the basic concepts used in early warning systems; understands the purpose of introducing and the basic principles of designing early warning systems	W01	1

		W08	1
W02	the student knows the techniques of monitoring selected environmental hazards and forecasting the directions of their changes; knows the methods and criteria for assessing natural hazards	U03 U04 U12 W03 W05	1 1 1 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*
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*
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*
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-IZ-S1-313_fs_1	laboratory classes	15	course work	U01, U02, U03, W01, W02	a05, b04, b07, c07, d01, e04, f01, 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*	Yes
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*	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*	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.*	Yes
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*	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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Basics of CAD design with technical drawing elements**
Module code	W2-IZ-S1-009
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	The course has been prepared for people starting to work with the program and those who need to organize their knowledge in the use of AutoCAD. Lessons are carried out in such a way that a beginner acquires as much knowledge as possible and quickly acquires practical skills. During the course, issues related to the use of AutoCAD software are implemented step by step (interface appearance, toolbars, program menus, coordinate systems), and then move on to more advanced functions, such as modifying objects, hatching, dimensioning, creating descriptions for 2D drawings and technical documentation.
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	he is ready to critically assess his knowledge, demonstrates the need to constantly update his field knowledge and improve professional and personal competences	K01	5
		K02	5
		K03	3
		K04	5
		K06	4
		U01	4
		U02	4
		U03	4
		U04	5
		U05	4
		U07	5
		U08	5

		U09	4
		U10	3
		U12	4
		U13	4
		W01	5
		W02	3
		W03	4
		W04	4
		W05	3
		W08	5
K04	he is ready to engage in engineering activities and take responsibility for the decisions he makes	K01	4
		K02	5
		K03	4
		K04	5
		U01	4
		U03	4
		U07	5
		U08	5
		U09	5
		U13	4
		W01	5
		W04	4
		W06	3
		W08	5
U04	appropriately selects and applies research methods and tools in the field of science including geohazards, independently conducts observations and measurements in the field or laboratory, and applies statistical and IT techniques to describe phenomena and data analysis	K01	5
		K02	4
		K04	4
		U03	4
		U04	5
		U07	5
		U08	5
		U09	3
		U12	4
		U13	4
		W01	4

		W03	3
		W08	4
U07	he is able to plan and carry out tasks individually and in a team	K01	5
		K02	4
		K04	4
		K06	3
		U01	5
		U02	3
		U03	4
		U04	5
		U07	5
		U08	5
		U09	5
		U12	3
		U13	4
		W01	3
		W03	3
		W05	4
		W08	5
U13	is able to solve practical engineering tasks requiring the use of standards, norms and technologies appropriate for actions counteracting geohazards	K01	5
		K02	5
		K04	5
		U01	4
		U03	3
		U04	5
		U05	4
		U07	5
		U08	5
		U09	5
		U10	3
		U12	5
		U13	4
		W01	5
		W02	3
		W03	5

		W08	5
W01	has advanced knowledge in the field of science dealing with geohazards, knows the terminology used in these sciences and understands the complex conditions of phenomena that constitute geohazards	K01 K02 K03 K04 K05 K06 U01 U02 U04 U07 U08 U09 U10 U12 U13 W01 W08 W09	5 5 3 5 3 3 4 4 5 5 5 5 3 3 3 5 5 3
W08	has knowledge of the life cycle of devices, facilities and technical systems related to geohazards and knows the methods, techniques, tools and materials used in solving tasks in the field of environmental engineering aimed at geohazards	K01 K02 K03 K04 K06 U01 U03 U04 U07 U08 U09 U12 U13 W01 W08	5 4 3 5 4 3 3 5 5 4 5 4 4 5 5

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*
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*
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*
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.*
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
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-IZ-S1_fs_1	laboratory classes	30	course work	K01, K04, U04, U07, U13, W01, W08	a01, a05, b01, b02, b04, b07, c07, d01, d02, e01, e05, e07, e08, f01, 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?
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)*	Yes
a05	Preparation for classes	Production/preparation of tools, materials or documentation necessary for class participation *developing, preparing and assessing the usefulness of tools and materials (e.g. aids, scenarios, research tools, equipment, etc.) to be employed in class or as an aid when preparing for classes*	Yes
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*	Yes

		online, etc.	
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*	Yes
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*	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
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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Basics of Cartography, Topography and Geodesy**
Module code	W2-IZ-S1-002
Number of the ECTS credits	5
Language of instruction	Polish
Purpose and description of the content of education	The module Basics of geodesy, cartography and topography is designed to enable students to become familiar with the basics of creating general geographic, thematic and topographic maps and using them. It indicates the place and importance of cartography and cartographic spatial analysis in the system of natural sciences. Transfers knowledge of the mathematical elements of maps, their geographical content and methods of graphical presentation of natural and socio-economic phenomena on maps. It introduces the basics of using thematic and topographic maps in analogue and digital form to obtain qualitative and quantitative information about the main components of the geographical environment.
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)
U1	the student has knowledge, updates it, possesses skills and applies them in the use of basic methods, techniques and tools for the preparation and editing of cartographic studies, including in the field of modern information systems of the territory at a level that allows describing and interpreting natural and socio-economic phenomena. Demonstrates the ability to work in a group	U04 U05 W02	3 3 3
U2	the student uses available sources of information on geographic space, including electronic sources	U02 U03	3 3
W1	the student has knowledge of basic conceptual categories and terminology used in cartography and topography, has knowledge of the development of these fields and their place in the system of sciences	W01	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*

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*
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-IZ-S1-002_fs_1	lecture	30	exam	U1, W1	a01, b02
W2-IZ-S1-002_fs_2	laboratory classes	30	course work	U1, U2	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
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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Basics of geology**
Module code	W2-IZ-S1-004
Number of the ECTS credits	6
Language of instruction	Polish
Purpose and description of the content of education	The Fundamentals of Geology module discusses the structure and evolution of the Earth. Endogenous and exogenous processes are presented and characterized, taking into account their course, effects, i.e. rocks and sediments, and geomorphological forms. Natural conditions for individual geological processes are indicated, as well as their interrelationships. The acquired knowledge can be the basis for forecasting the course of processes, including natural disasters with a geological basis, and predicting the consequences of geological events on a regional as well as global scale. Curriculum content of the module: Structure and evolution of the Earth. Endogenous processes: Tectonics of the lithosphere plates. Earthquakes. Orogenic movements. Tectonic structures. Magma processes. The origin and evolution of magma. Rock-forming minerals of magmatic rocks. Classification and overview of magmatic rocks. Metamorphic processes. Rock-forming minerals of metamorphic rocks. Classification and systematic review of metamorphic rocks. Exogenic processes: Weathering. Surface mass movements. Sedimentary environments. Rock-forming minerals of sedimentary rocks. Characteristics of sedimentary rocks: genesis, classification and systematic review. Methods of determining the age of rocks and minerals. Geologic time scale - major events in the history of the lithosphere (paleogeographic changes, orogenic cycles) and biosphere.
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)
K1	understands the need to constantly expand his knowledge. is able to manage his own time for self-education in an organized manner	K01	3
U1	can use professional geological terminology and explain mechanisms and effects of geological processes. can recognize rock-forming minerals and basic types of rocks, and interpret the conditions of their formation	U01 U02 U05 U08	4 2 1 2

W1	has knowledge of the structure and evolution of the Earth knows and understands the conditions, genesis, forms and mechanisms of endo- and exogenous processes of the Earth has knowledge of the basic methods of dating minerals and rocks - acquires basic information on forecasting natural disasters with a geological background and predicting the effects of geological events on a regional and global scale	W01 W02 W03 W05	4 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*
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*
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*
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*
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-IZ-S1-004_fs_1	lecture	30	exam	K1, U1, W1	a01, a03, a05, c01, c03, c07, f01, f02
W2-IZ-S1-004_fs_2	laboratory classes	36	course work	K1, U1, W1	e01, f01, 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?
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)*	Yes
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*	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	Environmental Hazard Engineering
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	General information about the module
Module name	**Basics of Geophysics**
Module code	W2-IZ-S1-007
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	The Principals of Geophysics module is a short geophysics course showing the relationship between the laws of physics and geology. Based on known physical laws, the student will become familiar with the possibilities of geophysical methods. Using specialised software, the student will analyse electrical resistivity and seismic data as geophysics' most commonly used data type. The student elaborates on the obtained results and presents them as a report. He creates a geophysical model of the centre based on the obtained results and tried to make its geological interpretation under the teacher's guidance.
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)
U01	he can perform calculations related to the analysis of field data and interpret the obtained results	U01 U02	3 3
U02	he can use computer software used in the interpretation of measurement results	U04	3
U03	he can prepare a report and present research results	K01 K03 K04 U03 U05 U06 U07	2 1 1 3 2 1 1
W01	the student knows the physical basis of the methods used in geophysical research	W01	2
W02	he can indicate the application of the discussed geophysical methods	W01	2

9.	Methods of conducting classes	
Code	**Category**	**Name (description)**
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*
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*
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-IZ-S1-007_fs_1	laboratory classes	15	course work	U01, U02, U03, W01, W02	b08, d01, d03, e01

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

7.	General information about the module
Module name	**Basics of Land Reclamation and Drainage Systems**
Module code	W2-IZ-S1-022
Number of the ECTS credits	1
Language of instruction	Polish
Purpose and description of the content of education	The aim of the lecture is to familiarize with the basic knowledge of drainage construction, including: the principles of regulating water relations in drained areas, the causes of faulty water relations in the ground, the principles of designing small water reservoirs, drainage ditches and their reinforcements, as well as the basic division and scope of applications of typical water structures - melioration. Drainage systems will also be presented.
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)
U01	he can correctly interpret and present how human activity affects the environment, including water conditions in the soil, and justify the choice of the method of their regulation	U02	4
W01	he has general knowledge in the field of water drainage and water engineering in connection with construction and environmental engineering. He knows the causes of unfavorable water-air relations in the soil	U13 W02	3 4
W02	he knows the causes of changes in the soil environment caused by human activity, forcing the regulation of water and air relations. Has knowledge of the impact of hydrotechnical facilities on the environment	U01 W08	4 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*

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-IZ-S1-022	lecture	15	exam	U01, W01, W02	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*	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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Biogeography and Ecological Engineering**
Module code	W2-IZ-S1-006
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	The student acquires knowledge of living organisms as components of the geographical environment, their interrelationships and interactions, and also in the context of geohazards. They will learn about the basic phenomena and processes in the biosphere and the environmental factors determining the development and diversity of living organisms. The learner learns about the regularities in the distribution of living organisms globally and in Poland. The student learns about the relationship between humans and the biosphere, focusing on geohazards. Understands the role of plant ecosystem engineers in the environmental design process and their importance in minimising environmental damage.
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)
U01	applies basic research techniques and tools in biogeography, ecological engineering, statistical methods, algorithms, and computer techniques to describe phenomena and analyse data	U02	5
U02	understands literature on biogeography and ecological engineering in Polish and uncomplicated scientific texts in English. Uses scientific language in undertaken discussions with specialists in the field of biogeography	U03 U04	4 4
U03	be able to use available sources of information on geohazards in the pedosphere and biosphere, including electronic sources, and have the ability to make correct inferences based on data from different sources	U01	3
U04	learns independently in a focused manner and understands the need for lifelong learning, demonstrates the need to continuously update directional knowledge in biogeography and soil science and to improve professional and personal competencies	K01 U06	2 2
U05	able to interact and work in a group, taking on different roles within it	U05	1
W01	understands the basic natural phenomena and processes of the biosphere with a focus on geohazards. Understands the meaning of the basic conceptual categories and terminology of biogeography, including geohazards terminology. Has knowledge of the development of biogeography and the research methods used in this science	W01 W02	5 5
W02	knows the basic problems of geohazards in the pedosphere and biosphere and the links between soil science and	W01	5

	biogeography and other natural sciences		

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*
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*
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-IZ-S1-006	lecture	15	exam	U01, U02, U03, U05, W01, W02	a01
W2-IZ-S1-006_fs_2	laboratory classes	15	course work	U01, U02, U03, U04	e01, e04, 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*	Yes
a05	Preparation for classes	Production/preparation of tools, materials or documentation necessary for class participation *developing, preparing and assessing the usefulness of tools and materials (e.g. aids, scenarios, research tools, equipment, etc.) to be employed in class or as an aid when preparing for classes*	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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**CAD Designing**
Module code	W2-IZ-S1-013
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	The course has been prepared for people starting to work with the program and those who need to organize their knowledge in the use of AutoCAD. Lessons are carried out in such a way that a beginner acquires as much knowledge as possible and quickly acquires practical skills. During the course, issues related to the use of AutoCAD software are implemented step by step (interface appearance, toolbars, program menus, coordinate systems), and then move on to more advanced functions, such as modifying objects, hatching, dimensioning, creating descriptions for 2D drawings and technical documentation.
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	he is ready to critically assess his knowledge, demonstrates the need to constantly update his field knowledge and improve professional and personal competences	K01	5
		K02	5
		K03	3
		K04	5
		K06	4
		U01	4
		U02	4
		U03	4
		U04	5
		U05	4
		U07	5
		U08	5

		U09	4
		U10	3
		U12	4
		U13	4
		W01	5
		W02	3
		W03	4
		W04	4
		W05	3
		W08	5
K04	he is ready to engage in engineering activities and take responsibility for the decisions he makes	K01	4
		K02	5
		K03	4
		K04	5
		U01	4
		U03	4
		U07	5
		U08	5
		U09	5
		U13	4
		W01	5
		W04	4
		W06	3
		W08	5
U04	appropriately selects and applies research methods and tools in the field of science including geohazards, independently conducts observations and measurements in the field or laboratory, and applies statistical and IT techniques to describe phenomena and data analysis	K01	5
		K02	4
		K04	4
		U03	4
		U04	5
		U07	5
		U08	4
		U09	3
		U12	4
		U13	4
		W01	4

		W03	3
		W08	4
U07	he is able to plan and carry out tasks individually and in a team	K01	5
		K02	4
		K04	4
		K06	3
		U01	5
		U02	3
		U03	4
		U04	5
		U07	5
		U08	5
		U09	5
		U12	3
		U13	4
		W01	3
		W03	3
		W05	4
		W08	5
U13	is able to solve practical engineering tasks requiring the use of standards, norms and technologies appropriate for actions counteracting geohazards	K01	5
		K02	5
		K04	5
		U01	4
		U03	3
		U04	5
		U05	4
		U07	5
		U08	5
		U09	5
		U10	3
		U12	5
		U13	4
		W01	5
		W02	3
		W03	5

		W08	5
W01	has advanced knowledge in the field of science dealing with geohazards, knows the terminology used in these sciences and understands the complex conditions of phenomena that constitute geohazards	K01 K02 K03 K04 K05 K06 U01 U02 U04 U07 U08 U09 U10 U12 U13 W01 W08 W09	5 5 3 5 3 3 4 4 5 5 5 5 3 3 3 5 5 3
W08	has knowledge of the life cycle of devices, facilities and technical systems related to geohazards and knows the methods, techniques, tools and materials used in solving tasks in the field of environmental engineering aimed at geohazards	K02 K03 K04 K06 U01 U03 U04 U07 U08 U09 U12 U13 W01 W06 W08	4 3 5 4 3 3 5 5 4 5 4 4 5 5 5

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*
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*
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*
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.*
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*
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-IZ-S1-213_fs_1	practical classes	30	course work	K01, K04, U04, U07, U13, W01, W08	a01, a05, b01, b02, b04, b07, c07, d01, d02, e01, e07, e08, f01, 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?
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)*	Yes
a05	Preparation for classes	Production/preparation of tools, materials or documentation necessary for class participation *developing, preparing and assessing the usefulness of tools and materials (e.g. aids, scenarios, research tools, equipment, etc.) to be employed in class or as an aid when preparing for classes*	Yes
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.*	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,*	Yes

		implementation time and/or the method(s) of obtaining the necessary materials and tools, etc.	
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*	Yes
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*	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
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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Climate Change Adaptation in Cities**
Module code	W2-IZ-S1-016
Number of the ECTS credits	1
Language of instruction	Polish
Purpose and description of the content of education	The module allows the student to acquire knowledge about the climatic conditions of urban areas, their diversity and comparison with non-urban areas. Through the use of appropriate research methods, the student will acquire the ability to combine climatic and aerosanitary conditions, allowing for the development of a comprehensive view of the city's climate and its proper management. The student also acquires the skills of the proper selection of data sources about the state of the atmosphere necessary to assess the impact of weather on the activity and human body.
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)
U01	he has knowledge of the principles of planning and conducting climatological research and obtaining the necessary data using specialized instruments and measurement methods for the purpose of environmental assessment from the point of view of spatial planning and is able to perform an expert opinion in the field of climatology	U01 U02 U03 U05 U09 W08	3 2 2 4 3 2
W01	has in-depth knowledge of meteorology and climatology, enabling the student to perceive and evaluate relationships and dependencies between meteorological conditions and their impact on the city's climate in different geographic regions	W01 W02 W08	2 2 2
W02	it broadens the knowledge of the processes taking place in the atmosphere, with particular emphasis on the occurrence of dangerous meteorological phenomena and their impact on city dwellers	W01 W08	2 2
W03	knows and understands the basic processes of energy distribution, heat circulation and variability of individual meteorological elements within urban and rural areas	W02	2

		W08	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*
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*
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-IZ-S1-016	laboratory classes	15	course work	U01, W01, W02, W03	a03, b07, c07, d01, 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*	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*	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.	
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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Climate Change as a Source of Environmental Risks**
Module code	W2-IZ-S1-012
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	The course familiarizes students with the results of research on climate change at various temporal and spatial scales. It takes into account the causes, effects and potential risks to people and the environment from climate change. Describes data acquisition methods and their reconstruction. In addition, the issues of scenarios of changes in climate conditions in the future are discussed.
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 is ready to critically assess their knowledge in the field of climate change, demonstrates the need for constant updating of this knowledge and improving professional and personal competences in the field of climate risks	K01	2
U02	the student is able to properly select the available sources of information on climate change and make their critical analysis and synthesis	U02	3
U13	the student is able to solve practical engineering tasks requiring the use of standards and norms appropriate for actions to counteract the effects of climate change	U13	2
W05	the student knows the applications of scientific achievements regarding the effects of climate change in the natural environment and socio-economic life, taking into account the postulate of sustainable development	W05	4

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*
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*
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-IZ-S1-012	lecture	15	exam	K01, U02, U13, W05	a02, b01, b02, b04, b07, c02, 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*	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*	Yes
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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Crisis management systems**
Module code	W2-IZ-S1-314
Number of the ECTS credits	1
Language of instruction	Polish
Purpose and description of the content of education	The module aims to acquaint students with crisis management mechanisms. The student should acquire knowledge about the legal and organizational status, structure and effectiveness of existing solutions and information about the principles of designing such systems. Acquainted with preventive actions regarding geohazards and crisis management will allow you to better understand the mechanisms of quality management and conducting business and spatial planning.
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	he is ready to critically assess his knowledge and demonstrates the need to constantly update his field knowledge and improve professional and personal competencies	K01	5
K02	can set priorities, identify and resolve dilemmas related to the profession on their own or by consulting experts	K02	5
K03	he is ready to engage in engineering activities and take responsibility for the decisions he makes	K03	5
K04	he is responsible for the safety of his own and others' work and knows how to act in emergencies	K04	5
U01	he learns on his own in a targeted way	U01	5
U02	when formulating and solving tasks within geohazards, they can see their systemic aspects: natural, social, economic and legal	U02	5
W01	he knows the organization of the crisis management system in the country and its tasks, especially within the geohazards	W01	5
W02	he knows of crisis management, including in relation to economic activity and spatial planning	W02	5

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
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-IZ-S1-314_fs_1	lecture	15	exam	K01, K02, K03, K04, U01, U02, W01, W02	a01, c02, 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*	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
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*	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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Diploma workshop I**
Module code	W2-IZ-S1-357
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	Classes devoted to various types of methods necessary for the preparation of the thesis. In terms of content, classes adapted to the specifics of the path chosen by the student and the thesis to be prepared.
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)
U01	applies research techniques and tools in the sciences involving geohazards and statistical methods, algorithms and computer techniques to describe phenomena and analyze data	W03	5
U02	is able to use available sources of information on geohazards, including electronic sources, and has the ability to correctly infer data from various sources	W02 W04	5 2
U03	learns independently in a focused manner	U08	5
U04	can assess the suitability of routine methods and tools for solving a simple environmental engineering task directed at geohazards of a practical nature, and can select and apply the appropriate method and tools	W03	5

9. Methods of conducting classes

Code	Category	Name (description)
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

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-IZ-S1-357	seminar	30	course work	U01, U02, U03, U04	b04, b05

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*	Yes
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*	Yes
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)*	Yes
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
a05	Preparation for classes	Production/preparation of tools, materials or documentation necessary for class participation *developing, preparing and assessing the usefulness of tools and materials (e.g. aids, scenarios, research tools, equipment, etc.) to be employed in class or as an aid when preparing for classes*	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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Diploma workshop II**
Module code	W2-IZ-S1-408
Number of the ECTS credits	4
Language of instruction	Polish
Purpose and description of the content of education	Classes devoted to various types of methods necessary for the preparation of the thesis. In terms of content, classes adapted to the specifics of the path chosen by the student and the thesis to be prepared.
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)
U01	he is able to use available sources of information on geohazards, including electronic sources, and has the ability to make correct inferences based on data from various sources	W02	5
U02	applies basic research techniques and tools in the sciences involving geohazards and basic statistical methods, algorithms and computer techniques to describe phenomena and analyze data	W04	5
U03	can use analytical, simulation and experimental methods to formulate and solve environmental engineering tasks directed at geohazards	U04	5
U04	can assess the suitability of routine methods and tools for solving environmental engineering tasks directed at geohazards of a practical nature, and select and apply appropriate methods and tools	W04	5

9. Methods of conducting classes

Code	Category	Name (description)
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*

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-IZ-S1-408_fs_1	seminar	30	course work	U01, U02, U03, U04	b04, b05

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*	Yes
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*	Yes
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)*	Yes
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
a05	Preparation for classes	Production/preparation of tools, materials or documentation necessary for class participation *developing, preparing and assessing the usefulness of tools and materials (e.g. aids, scenarios, research tools, equipment, etc.) to be employed in class or as an aid when preparing for classes*	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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Engineering Geology**
Module code	W2-IZ-S1-011
Number of the ECTS credits	6
Language of instruction	Polish
Purpose and description of the content of education	The module allows students to familiarize themselves with the physical properties and processes in a shallow geological environment. The student acquires the ability to classify soils and assess their suitability from the point of view of engineering and environmental applications. The issues of soil strength parameters will be discussed, including the phenomena related to the presence and movement of water in the ground. The student learns field and laboratory methods of soil testing. The importance of geotechnical research in the investment process is emphasized.
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	understands the non-technical aspects and effects of engineering activities, including its impact on the environment and the related responsibility for decisions; is responsible for the safety of his own and others' work, knows how to act in emergency situations	K01 K03 K04	1 2 4
U01	is able to use available sources of information on topics related to engineering geology, including electronic sources, and has the ability to correctly draw conclusions based on data from various sources	U01 U02	2 5
U02	understands engineering geology literature; reads and understands uncomplicated scientific texts in English	U02 U03	3 3
W01	has knowledge of basic problems, conceptual categories and terminology related to engineering geology and knows the connections between sciences covering geological issues and other natural sciences	W01	5
W02	he has knowledge of research methods used in geology, including methods for determining the physical parameters of the soil	W02 W03	3 2
W03	he knows the methods, techniques, tools and materials used in solving tasks in the field of environmental engineering	U09 U10	3 2

		W01 W02 W03 W08	4 2 5 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*
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*
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*
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-IZ-S1-011_fs_1	lecture	30	exam	W01, W02, W03	a01
W2-IZ-S1-011_fs_2	laboratory classes	30	course work	K01, U01, U02	d01, d02, d03, e01, e04, 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*	Yes
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*	Yes
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)*	Yes
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
a05	Preparation for classes	Production/preparation of tools, materials or documentation necessary for class participation *developing, preparing and assessing the usefulness of tools and materials (e.g. aids, scenarios, research tools, equipment, etc.) to be employed in class or as an aid when preparing for classes*	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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Engineering methods of the geohazard results prevention and limitation**
Module code	W2-IZ-S1-312
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	The course aims to present selected engineering methods of preventing and limiting the effects of geohazards, including weathering, suffosion, karst, soil mass displacement processes within slopes, and seismic hazards. Particular attention was paid to the occurrence of catastrophic climatic phenomena and limiting their effects and large forest and agricultural fires, preventing their occurrence, limiting development, and repairing the damage. In addition, water erosion and anti-erosion meliorations were taken into account.
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)
U01	he can use analytical, simulation and experimental methods to solve engineering tasks aimed at geohazards and limiting their effects as well as large forest and agricultural fires, preventing their occurrence, limiting development and repairing damage. In addition, water erosion and anti-erosion meliorations were taken into account	K01 U01 U03 U09 W01 W02 W03	3 3 3 3 3 3 2
U02	be able to solve practical engineering tasks using standards, norms and technologies specific to geohazards	U03 U12	3 4
U03	be able to prepare a well-documented paper on geohazards and make an oral presentation on specific geohazard issues in both Polish and English	U13	5

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*
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*
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*
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-IZ-S1-312_fs_1	laboratory classes	30	course work	U01, U02, U03	b01, b04, c07, d02, d03, 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*	Yes
a02	Preparation for classes	Literature reading / analysis of source materials *reading the literature indicated in the syllabus; reviewing, organizing, analyzing and selecting source*	Yes

		materials to be used in class	
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
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*	Yes
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*	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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**English Terminology in Earth Sciences and Geohazards**
Module code	W2-IZ-S1-301
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	The student learns English vocabulary on geohazards and Earth Sciences relevant to the geohazards engineering: dynamic geology, seismology, geomorphology, meteorology, hydrology and environment protection. The student learns English vocabulary related to applied, practical aspects of geohazards. The student learns to use English scientific resources and discuss specialist geohazard topics in English. The student learns to write and give oral presentations on geohazards.
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)
U01	the student can use English specialist vocabulary related to geohazards and Earth Sciences in written documents, during discussions and presentations	U05 U06	3 4
W01	the student knows English specialist vocabulary related to geohazards and Earth Sciences	W01	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*
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*
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*
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-IZ-S1-301_fs_1	practical classes	15	course work	U01, W01	b03, c02, c03, d02, d03, 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*	Yes
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)*	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*	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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Environmental and landscape impact assessment**
Module code	W2-IZ-S1-355
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	Environmental and Landscape Impact Assessment - aims to familiarize students with the theoretical foundations, legal procedures and practical aspects of assessing the potential effects of planned projects on individual components of the natural environment and the landscape. As part of the course, students will learn about the Polish and European legal system regarding environmental impact assessments (EIA), including European Union directives and national laws and regulations. The types of projects requiring assessment, the stages of the administrative procedure related to EIA, as well as the role of public administration bodies and public participation in this process are analyzed. An important element of the subject is the methodology for preparing reports on the impact of a project on the environment. Students gain knowledge on collecting and analyzing environmental data, forecasting and assessing significant impacts (direct, indirect, cumulative), identifying and analyzing project variants (including the most beneficial variant for the environment and the zero variant), as well as proposals for solutions to minimize negative impacts.
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-IZ-S1-355_1	understands the importance of public participation in the environmental impact assessment procedure and the need for interdisciplinary cooperation in the preparation and review of environmental documentation	K03	3
W2-IZ-S1-355_2	is able to identify the potential significant impacts of a planned project on individual components of the natural environment and on the landscape, using appropriate methods and analysis tools	U04	2
W2-IZ-S1-355_3	is able to prepare selected elements of a report on the impact of a project on the environment, including characterizing the initial state of the environment and landscape, forecasting changes and proposing measures to minimize negative impacts	U02	3
W2-IZ-S1-355_4	knows and understands the legal basis and administrative procedures related to the environmental impact assessment (EIA) and strategic environmental impact assessment (SEIA) in Poland and the European Union	W01	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*
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*
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-IZ-S1-355_fs_2	laboratory classes	20	course work	W2-IZ-S1-355_1, W2-IZ-S1-355_2	b07, c07, d01, e04
W2-IZ-S2-355 _fs _1	lecture	10	course work	W2-IZ-S1-355_3, W2-IZ-S1-355_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?**
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	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)	
a05	Preparation for classes	Production/preparation of tools, materials or documentation necessary for class participation *developing, preparing and assessing the usefulness of tools and materials (e.g. aids, scenarios, research tools, equipment, etc.) to be employed in class or as an aid when preparing for classes*	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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Environmental Expertise**
Module code	W2-IZ-S1-140
Number of the ECTS credits	4
Language of instruction	Polish
Purpose and description of the content of education	The subject is to enable the student to become familiar with the issues of environmental impact assessment of investments, both from the legislative side (including sources of information on the environment, sharing information on the environment and its protection, public participation in environmental protection, environmental impact assessment procedures), as well as environmental expertise carried out, with particular emphasis on linear facilities (especially motorways). As part of the laboratory, students will learn about the anthropogenic conditions of the acoustic climate, air pollution, and the water environment, the risks associated with floods and hydro technical development, and the relationship between spatial development and the natural environment.
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)
U01	is able to use his/her knowledge, formulate and solve complex and non-routine problems and perform tasks under a variety of conditions	U01	4
W01	has an advanced knowledge of geohazard sciences, knows the terminology used in these sciences and understands the complexities of geohazard phenomena	K01 U01 U03 U09 W01 W02 W03	3 3 3 3 3 3 2
W02	is familiar with selected facts, objects and phenomena and with the methods and theories explaining the complex relationships between them	W02	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*
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*
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*
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-IZ-S1-140_fs_1	lecture	15	exam	W01, W02	a01, b01, d02, d03, f02
W2-IZ-S1-140_fs_2	laboratory classes	15	course work	U01, W01	a01, b04, c07, d03, 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	Yes

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

7.	**General information about the module**
Module name	**Environmental Pollution and Methods of its Analysis**
Module code	W2-IZ-S1-213
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	During the Environmental Pollution and Methods of its Analysis module, the student learns comprehensively about the sources and types of environmental pollution associated with anthropogenic human activity. He knows modern techniques for collecting and preparing environmental samples (air, water, soil, minerals, food, biomass) for further analysis. He can perform laboratory tasks using modern research equipment in the field of discussed issues, follow the process and formulate conclusions. Modern research equipment (advantages and disadvantages), certified reference materials, and validation of research methods are discussed.
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	can develop independently or in a team the objectives of their work, statements, and reports on the work carried out, and evaluate the effects of this work. Can is responsible for the safety of his own and the team's work, notices social and environmental problems, and reacts to them appropriately	K02 K05	4 3
U01	apply appropriate analytical methods and techniques in the natural sciences, correctly collect and prepare environmental samples for research, and can use descriptive statistics to interpret research results. Can communicate in English in the field of natural sciences and uses specialist vocabulary in English at the B2 level	U04 U06	5 4
W01	knows analytical techniques in the field of natural sciences that allow to describe and interpret the circulation of toxins in the environment, including those affecting human health. Knows the rules that include sustainable development as an element of the economic calculation and knows and considers the health and safety rules in organizing laboratory activities	W03 W07	5 4

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*

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*
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*
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-IZ-S1-213_fs_1	lecture	15	exam	W01	b01, b07, c07, f02
W2-IZ-S1-213_fs_2	laboratory classes	15	course work	K01, U01	b07, c07, e01, e06, e09

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

7.	**General information about the module**
Module name	**Environmental waste menagement**
Module code	W2-IZ-S1-015
Number of the ECTS credits	1
Language of instruction	Polish
Purpose and description of the content of education	The purpose of the Waste Management module is to enable students to understand the principles of rational waste management, ways of neutralizing, storing and reusing them. The module also enables students to gain knowledge about the environmental effects of improper waste management.
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	perceives the advantages of rational waste management, is able to assess human responsibility for decisions made today, the effects of which will be burdened by future generations	K02 K03 K04 W01 W08 W09	3 3 3 2 2 2
K02	shows an active attitude to learning new things and using them to enrich their own knowledge; critical and creative thinking and openness to the views of others	K01 K02 K03 K04 K05 W01	2 3 2 2 2 1
U01	is able to act rationally and economically in the field of minimizing the burden on the environment, assess the risks caused by technical methods of neutralizing pollutants, skillfully select the appropriate methods and tools	U01 U02	2 2

		U03 U04 U05 W01 W03	2 2 2 2 2
W01	knows the basic concepts of waste management and develops knowledge in the field of rational waste management	W01 W02 W04	3 1 3
W02	describes and explains the phenomena as well as the causes and effects of improper waste management, assesses the impact of methods and techniques used for waste management	W01 W02 W03 W05	2 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*
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*
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*
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-IZ-S1-015_fs_1	lecture	15	course work	K01, K02, U01, W01, W02	a01, b01, b02, d03, f02

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*	No

		materials to be used in class	
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

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

7.	**General information about the module**
Module name	**Estimating the cost of environmental threats**
Module code	W2-IZ-S1-142
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	The key objective of the course is to present the fundamental dilemmas of modern civilization relating to environmental security, energy security and sustainable development. The issues discussed relate to the assessment of the socio-economic impact on climate change and the impact of environmental threats on society. The costs and benefits of environmental changes are estimated and the capabilities related to the implemented strategies for mitigation and adaptation to threats are analysed. During the classes, computational methods in risk analysis and tools supporting environmental risk management are used, including a decision support tool (multi-criteria analysis, cost-benefit analysis, SWOT) and event scenarios.
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)
K04	he is ready to engage in engineering activities and take responsibility for the decisions he makes	K01	5
		K02	5
		K03	4
		K04	5
		K05	4
		K06	4
		U09	4
		U10	4
		U11	5
		U12	4
		U13	4
		W08	5

U03	he can use appropriate methods and tools, including electronic sources, and has the ability to correctly draw conclusions based on data from various sources	U01 U02 U03 U04 U05 U06 U07 U08 U09 U10 U11 U12 U13	5 5 5 5 4 3 5 5 5 4 5 5 5
U11	he is able to carry out a preliminary economic analysis of undertaken engineering activities	U01 U02 U03 U04 U05 U06 U07 U08 U09 U10 U11 U12 U13	5 4 5 5 4 4 5 4 5 4 5 4 4
W01	has advanced knowledge in the field of science dealing with geohazards, knows the terminology used in these sciences and understands the complex conditions of phenomena that constitute geohazards	W01 W02 W03 W04 W05 W08	5 5 5 5 5 5

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
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*
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*
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*
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*
c09	Demonstration methods	Value-based methods – expressive methods *methods of accessing value-related knowledge, experiencing values in emotion-laden activities; creating situations enabling the creation or reproduction of values as a way of self-expression combined with experiencing values (individually or in a group); actions, most often creative, involving an expressive and suggestive way of expressing emotions*
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.
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*
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*
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*
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*
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-IZ-S1-142_fs_1	laboratory classes	15	course work	K04, U03, U11, W01	a01, a05, b01, b02, b04, b07, b10, c07, c09, d01, d02, d04,

					e01, e03, e04, e06, e08, e09, f01, 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)*	Yes
a05	Preparation for classes	Production/preparation of tools, materials or documentation necessary for class participation *developing, preparing and assessing the usefulness of tools and materials (e.g. aids, scenarios, research tools, equipment, etc.) to be employed in class or as an aid when preparing for classes*	Yes
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.*	Yes
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*	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*	Yes
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*	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
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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Field hydrological and hydrogeological methods in environmental hazard analysis**
Module code	W2-IZ-S1-230
Number of the ECTS credits	1
Language of instruction	Polish
Purpose and description of the content of education	The following topics will be discussed during the field exercises: methodological basics of water phenomena mapping, usefulness of aerial and satellite photos and GIS tools for water phenomena research, research of physical and chemical characteristics of water, study of watercourses, study of lakes and reservoirs, study of natural groundwater outflows. the impact of human activity on water phenomena and hydrographic objects, field methods of determining areas at risk of flooding, field aspects of drought risk analysis, cartographic presentation of field research results. The student learns about the structure, principles of operation of hydrological instruments and acquires the skills to operate them.
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)
U01	he conducts observations and performs simple hydrogeological measurements in the field or laboratory in the field of geohazards	U01 U10	5 5
U02	he is able to cooperate and work in a group, assuming both the role of a leader and a performer	U07 U10 U13	5 5 4
W01	has knowledge of mathematics, physics and chemistry necessary to understand the basic hydrogeological phenomena and processes, including those leading to the occurrence of geohazards	W01	5
W02	has basic knowledge of the life cycle of hydrogeological devices, hydrological objects and technical systems related to geohazards	W03	4

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*
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*
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*
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-IZ-S1-230_fs_1	field practice	36	course work	U01, U02, W01, W02	b07, c07, d01, e01, e05, e09

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)*	Yes
a04	Preparation for classes	Consulting materials complementary to those indicated in the syllabus	No

		agreeing on materials complementary to those indicated in the syllabus, supporting the implementation of tasks resulting from or necessary for class participation	
a05	Preparation for classes	Production/preparation of tools, materials or documentation necessary for class participation *developing, preparing and assessing the usefulness of tools and materials (e.g. aids, scenarios, research tools, equipment, etc.) to be employed in class or as an aid when preparing for classes*	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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Field Methods in Geology**
Module code	W2-IZ-S1-229
Number of the ECTS credits	1
Language of instruction	Polish
Purpose and description of the content of education	During field exercises, students will familiarize themselves with the following geological methods: 1. Geological profiling of clastic sediments of the Carpathian flysch (producing a geological profile - exposure in Kozy and Mucharz) 2. Geological mapping (location, description, drawing of documentation points, determination of geological boundaries, measurements with a geological compass and GPS, geological probing; the final product will be the development of a geological map of the area at risk of surface mass movements - Beskid Makowski region, and potential areas of exploitation of rock raw material deposits - an area of Beskid Makowski and Żywiecki) 3. Methodology of sampling for laboratory analysis (types of samples and their labeling, sampling methodology in geological exposure) Field exercises are mobile and stationary. The first and second day of the internship is a tour: Sosnowiec - Kozy - Mucharz - Zembrzyce Zembrzyce- Świnna Poręba- Lachowice - Kojszówka- Osielec- Zembrzyce Students will learn about the geological and tectonic conditions of the research area and the methodology of geological profiling. The third, fourth, and fifth day of practice is stationary, i.e., students in groups map an area of 1 km2 near Zembrzyce (the center).
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)**
K1	correctly identifies and resolves dilemmas related to the use of geological methods	K01	5
K2	understands non-technical aspects and effects of engineering activities; is aware of existing legal regulations in geology and complies with them; is mindful of the responsibility for the entrusted equipment; acts by the health and safety rules	K02	3
U1	he can solve practical engineering tasks requiring standards, norms and technologies appropriate for actions to counteract geological hazards	K01 K02 K03 K04 K05 K06 U01 U02 U03 U04 U05 U06 U07 U08 U09 U10 U11 W08 W09	3 3 3 3 3 3 3 3 3 3 3 2 4 3 3 3 2 4 2
W1	he knows the basic research methods, equipment, and materials used in geological research, particularly during geological mapping	U01 W01 W08	3 3 3
W2	knows the basic methods, techniques, tools, and materials used in solving engineering tasks in the field of environmental engineering aimed at geohazards using geological mapping	U09 W06 W08	5 4 3

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
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*
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-IZ-S1-229_fs_1	field practice	30	course work	K1, K2, U1, W1, W2	a05, d01, d02, d03, e01, 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*	Yes
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*	Yes
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)*	Yes
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
a05	Preparation for classes	Production/preparation of tools, materials or documentation necessary for class participation *developing, preparing and assessing the usefulness of tools and materials (e.g. aids, scenarios,*	Yes

		research tools, equipment, etc.) to be employed in class or as an aid when preparing for classes	
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
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.*	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*	Yes
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*	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*	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*	Yes
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
e02	Activities complementary to the classes	Publication of a work/presentation of an activity, also beyond the walls of the University	No

		a set of activities carried out to disseminate (out of class) the effects of scholarly research, artistic, creative, project, construction, experimental work, etc., in the form of a classic presentation, exhibition, concert, projection, poster presentation, media mediated publication, in the digital form and as part of other activities; dissemination using various forms and tools	
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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Fundamentals of Geography**
Module code	W2-IZ-S1-003
Number of the ECTS credits	4
Language of instruction	Polish
Purpose and description of the content of education	To know the diversity of the geographical environment and the nature and dynamics of the processes taking place in it. To identify the basic elements of the natural environment and to understand the interrelationships between them together with knowledge of the role of humans in transforming the environment. An important aspect is to systematise knowledge of the essential elements of the Earth's natural system and to apply the terminology of physical geography.
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)
U01	appropriately selects and applies research methods and tools in the sciences covering the foundations of geography independently carries out observations and measurements in the field or laboratory and applies statistical and computer techniques to describe phenomena and analyse data	U03	4
W01	knows and characterises the basic natural phenomena and processes occurring in the geographical environment	U03 W01 W02	1 1 1
W02	he knows and explains the interrelationships and interactions of the components of the environment	K01 W01 W02	1 1 1
W03	knows and explains the most important laws governing the Earth and characterises the causes and effects of natural processes occurring on the globe, including those relating to global environmental change	W01 W02	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*
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*
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*
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.*
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**
W2-IZ-S1-003_fs_1	lecture	15	exam	W01, W02, W03	a01, a03, b02, c02
W2-IZ-S1-003_fs_2	laboratory classes	15	course work	U01, W01, W02, W03	a05, b04, b08, b09, 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*	Yes
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
a05	Preparation for classes	Production/preparation of tools, materials or documentation necessary for class participation *developing, preparing and assessing the usefulness of tools and materials (e.g. aids, scenarios, research tools, equipment, etc.) to be employed in class or as an aid when preparing for classes*	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
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.*	Yes
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*	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*	Yes
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*	Yes
d01	Consulting the results of the verification of	Analysis of the corrective feedback provided by the academic teacher on the results of the	Yes

	learning outcomes	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*	

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

7.	**General information about the module**
Module name	**Geodesic and Photogrammetry Field Methods in Environmental Threats Analysis**
Module code	W2-IZ-S1-166
Number of the ECTS credits	1
Language of instruction	Polish
Purpose and description of the content of education	The classes cover the issues of surveying instrumentation, surveying surveying, engineering and industrial surveying, photogrammetry, terrestrial remote sensing. The construction and principle of operation of basic surveying instruments - leveler, electronic total station, GPS receivers, etc. are presented. Various measurement techniques (geometric, trigonometric and satellite leveling, angular and linear measurements, GPS satellite measurements - static and RTK, etc.) and their use in earth science and geoscience work are presented in detail. As part of the exercises, students learn how to operate the equipment and perform basic measurements and process the collected data.
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)
K1	the student is able to appropriately determine priorities for the implementation of a task defined by himself or others	K01	3
U1	the student is able to assess the suitability of routine methods and tools for solving a simple environmental engineering task directed at geohazards of a practical nature, and select and apply the appropriate method and tools	U01 U03	3 3
U2	the student applies basic surveying techniques and tools in the field of geodesy involving geohazards, as well as basic statistical methods, algorithms and computer techniques to describe phenomena and analyze data	U02 U03	3 3
U3	students are able to plan and conduct experiments, including measurements and computer simulations, interpret the results obtained and draw conclusions	U09	3
W1	the student has a basic knowledge of the construction of technical equipment and systems related to geodesy in terms of geohazard analysis	W03	3
W2	the student knows the basic methods, techniques, tools and materials used in solving simple engineering tasks in the field of geoscience directed at geohazards	W01 W03	3 3

9.	Methods of conducting classes	
Code	**Category**	**Name (description)**
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*
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*
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-IZ-S1-166_fs_1	field practice	36	course work	K1, U1, U2, U3, W1, W2	d01, e05, 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)*	Yes
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*	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*	No
e02	Activities complementary to the classes	Publication of a work/presentation of an activity, also beyond the walls of the University *a set of activities carried out to disseminate (out of class) the effects of scholarly research, artistic, creative, project, construction, experimental work, etc., in the form of a classic presentation, exhibition, concert, projection, poster presentation, media mediated publication, in the digital form and as part of other activities; dissemination using various forms and tools*	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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Geographic Information System I**
Module code	W2-IZ-S1-005
Number of the ECTS credits	4
Language of instruction	Polish
Purpose and description of the content of education	As part of the completion of the Geographic Information Systems (GIS I) module, the student acquires knowledge of available software, the structure of geographic information systems, types of thematic maps in GIS; the numerical terrain model (DEM); sources of errors in GIS and the benefits of using GIS in geohazard analysis. As part of practical exercises, the student acquires skills: data acquisition, raster image registration; creation of vector data models, data visualization; data transformation and coordinate systems; working in selected GIS software packages. During consultations, problems arising during laboratory classes are solved.
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)
U1	the student is able to use geographic information systems to formulate and solve environmental engineering tasks directed at geohazards	U01	3
U2	the student can - when formulating and solving engineering tasks in the field of geohazards - recognize their systemic and non-technical aspects	U10	4
U3	the student is able to use available sources of information on geohazards, including cartographic, electronic sources, and has the ability to correctly infer data from various sources	U03	4
U4	students are able to select and apply GIS tools appropriately on their own or under the guidance of a supervisor in order to solve tasks or perform geohazard expertise	U04	4
W1	the student knows the basic techniques and research tools to analyze the spatial distribution and intensity of phenomena treated as geohazards	W03	3

9. Methods of conducting classes

Code	Category	Name (description)
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-IZ-S1-005_fs_1	laboratory classes	35	course work	U1, U2, U3, U4, W1	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)*	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*	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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Geographic Information System II**
Module code	W2-IZ-S1-008
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	The "Geographic Information Systems II" module indicates methods and ways to solve natural problems using digital database analyses. It will allow you to master both the theoretical foundations of GIS and the essential functions of the tool - GIS software and its practical use in environmental geohazard research. The student will learn how to create vector layers, acquire vector and raster data from various Internet sources, and advance work on their basis. The student improves data visualisation skills, transformation and coordinate systems, and raster image registration
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	he is ready to critically assess his knowledge in the Geographic Information Systems field, showing the need to update his knowledge and improve professional competencies constantly	K01	3
U01	he can use his knowledge to formulate and solve complex and unusual problems using GIS tools. He can adequately select the available sources of GIS databases on geohazards, make a critical analysis and synthesizes this information. He can use the appropriate GIS methods and tools, including electronic sources, and correctly draw conclusions based on data from various sources.	U01 U02 U03	4 4 5
W01	has knowledge of Geographic Information Systems dealing with geohazards, knows the terminology used in these sciences and understands the complex conditions of phenomena constituting geohazards. He knows GIS techniques and tools used in science related to geohazards, including statistical and IT tools to describe and interpret geohazards phenomena	W01 W03	3 4

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*
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.*
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-IZ-S1-008_fs_1	laboratory classes	35	course work	K01, U01, W01	a05, b04, b07, d01, d02, e01

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

Code	Category	Name (description)	Is it part of the BUNA?
a05	Preparation for classes	Production/preparation of tools, materials or documentation necessary for class participation *developing, preparing and assessing the usefulness of tools and materials (e.g. aids, scenarios, research tools, equipment, etc.) to be employed in class or as an aid when preparing for classes*	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	Yes

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

7.	**General information about the module**
Module name	**Geohazards - Introduction**
Module code	W2-IZ-S1-156
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	Introduction to climatic and meteorological geohazards. Basic concepts. An overview of last year's threats. Basic characteristics of the causes, course and effects of selected climatic and meteorological geohazards. Basic geomorphological threats. Analysis of ways to identify geomorphological hazards. Early warning systems against geomorphological threats.
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)
U01	applies basic research techniques and tools in geosciences and basic statistical methods, algorithms and computer techniques to describe phenomena and analyse data	U03	4
U02	is able to properly select the available sources of information in the field of geohazards. He can also critically select information available in various databases	U02	4
W01	understands basic natural phenomena and processes with a focus on geohazards	W02	3
W02	has knowledge of the basic problems, conceptual categories and terminology of geohazards and knows the interrelationship of geohazard science with other natural sciences	W04	4
W03	has knowledge of the history of the development of geosciences and the research methods used in them	W05	4

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*
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-IZ-S1-156_fs_1	lecture	15	course work	U02, W01, W02, W03	b01, c07
W2-IZ-S1-156_fs_2	laboratory classes	15	course work	U01, U02	b07, c06

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

7.	General information about the module
Module name	**Geohazards Basics Field Research**
Module code	W2-IZ-S1-159
Number of the ECTS credits	1
Language of instruction	Polish
Purpose and description of the content of education	1. Continuous and discontinuous deformations in the areas of historical and contemporary mining (metal ores and hard coal) and their impact on various components of the geographical environment, natural processes and human economic activity, on the example of the north-western districts of Bytom. Making a map of environmental deformations and trends in the development of geohazards using modern methods and measuring devices. 2. Chemical degradation of the environment caused by historical and contemporary mining and processing of non-ferrous metal ores, on the example of the vicinity of Miasteczko Śląskie. Getting acquainted with the available data on the quality of air and precipitation, soils, characteristics of the population's diseases, methods of reducing the effects of pollution. 3. Occurrence of landslides in the Carpathian flysch on the example of the Spisko-Gubałowski Range. Presentation, mapping and description of the landslide over Białka at the base of Czarna Góra. 4. Flood hazard in the valley of a mountain river on the example of Białka. Preparation of a flood hazard map for natural and anthropogenic components of the geographical environment with the use of modern research methods and equipment. 5. Analysis of the occurrence of "chain" geohazards: flood - lateral erosion - landslides - obstruction of the river outflow - flooding/flooding of sewage treatment plants - contamination of surface waters and thick clastic alluvium - degradation of the usable level with water intakes - state of epidemic threat. 6. Characteristics and functioning of the Czorsztyn Reservoir, with particular emphasis on the occurrence of catastrophic phenomena within it and within the catchment area above the dam in Niedzica.
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)
U01	be able to use analytical methods in geohazard analysis	U07 U09	3 4
U02	has a basic knowledge of the life cycle of equipment, facilities and technical systems related to geohazards	U04	4
U03	knows the basic methods, techniques, tools and materials used in solving simple environmental engineering tasks	U03	4

	directed at geohazards		

9.	Methods of conducting classes	
Code	**Category**	**Name (description)**
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*
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*
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-IZ-S1-159_fs_1	field practice	36	course work	U01, U02, U03	b04, b07, e05, 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
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*	Yes
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*	Yes

		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	

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

7.	**General information about the module**
Module name	**Geohazards modeling and prediction**
Module code	W2-IZ-S1-303
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	The aim of the module is to provide knowledge about methods of modeling and forecasting geohazards during lectures. Practical skills in the same subject area are acquired during the seminars. Classes are conducted in a computer lab, and projects are carried out using a programming language. The lectures cover the following content: 1. types of models, 2. models in natural sciences, 3. forecasting natural processes, 4. linear and logistic regression, 5. introduction to machine learning techniques, 6. geohazard modeling in Poland and in the world, 7. geohazard prediction. The lectures and seminars cover issues in the area of statistics, geostatistics and machine learning. As part of the exercises, students work on scripts and by modifying and developing them, they adapt them to their own research problem. Students create their own models and work on their interpretation and graphic layer.
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	is aware that acquired knowledge needs to be continuously updated. Represents an attitude focused on the need for lifelong learning in the field of geohazard modelling and forecasting. This is due, on the one hand, to the rapid development of modelling techniques and algorithms, and dedicated tools, and, on the other hand, to the projected increase in the intensity of geohazards as a result of the negative consequences of a changing climate. The graduate/ graduate makes independent decisions based on the modelling results obtained, but also consults other experts and is able to revise his/her actions if he/she considers the arguments of the other side to be valid	K01 K02	4 1
U01	can apply the knowledge acquired in geohazard modelling and forecasting. He/she is able to formulate and solve complex and unusual problems using the acquired skills and develop them creatively. The graduate/graduate is able to base his/her analyses and conclusions on available sources of information, after their critical evaluation, validation and preparation. The graduate/graduate is able to identify limitations in the application of available data, knowing that poor quality data can lead to erroneous modelling results. They also have the ability to adapt the appropriate method to the data (e.g. time series analysis to observational data per unit time, interpolation to spatial data)	U01 U02 U03	3 1 1
W01	has advanced knowledge of geohazard modelling and prediction, knows the terminology relevant to the problem under analysis and understands the links between natural conditions and how they are represented in a model. Understands	W01	3

	the difference between modelling and prediction. Knows methods and tools to develop an optimal model, also has the knowledge to make predictions	W02	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*
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*
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*
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*
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-IZ-S1-303_fs_1	lecture	15	exam	K01, U01, W01	a01, b01, b04
W2-IZ-S1-303_fs_2	laboratory classes	30	course work	K01, U01, W01	d01, d03, e02, e03, 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
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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Geological, Geomorphological and Geophysical Methods in Geohazards Analysis**
Module code	W2-IZ-S1-010
Number of the ECTS credits	4
Language of instruction	Polish
Purpose and description of the content of education	As part of the module, the student learns and learns to apply geological and geophysical methods used in the analysis of geological hazards. Familiarizes with the methodology of analysis of geological hazards: their causes, manifestations, effects as well as detection, registration, warning and prevention or minimization of their effects. He learns the procedures related to geological hazards used before, during and after their appearance. Acquires the knowledge and skills of using traditional and instrumental techniques of collecting and processing geological data, the principles of spatial construction of a model of geological structure and the principles of geological work - field and chamber. Acquires the ability to use cartographic methods to construct geological maps, geological cross-sections and lithostratigraphic profiles with explanations.
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)
U01	he can plan and carry out experiments, including measurements and computer simulations, interpret the results and draw conclusions	U01 U02 U03 U04 U13	3 2 4 5 4
U02	he can use analytical, simulation and experimental methods to formulate and solve environmental engineering tasks aimed at geological hazards	U01 U02 U04 U13	2 2 5 4
W01	he understands the basic geological phenomena and processes with a focus on geohazards	U09 U12 W01	4 1 2

		W03 W05 W08	4 2 3
W02	he has knowledge of research methods used in science related to geological hazards including principles and techniques used in geological mapping	U12 W01 W02 W03 W08	4 2 3 4 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*
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*
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*
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
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-IZ-S1-010_fs_1	lecture	15	exam	U01, U02, W01, W02	a01, b02, c06, f01
W2-IZ-S1-010_fs_2	laboratory classes	15	course work	U01, U02, W01, W02	c07, d01, d03, e01, e04, 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*	Yes
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)*	Yes
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

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

7.	**General information about the module**
Module name	**Geological Hazards**
Module code	W2-IZ-S1-201
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	The aim of the module is to familiarize the student with geological processes that may pose a hazard to humans, and methods of studying these processes
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)
W01	understands basic natural phenomena and processes with a focus on geohazards	W01 W02 W03	1 1 1
W02	has knowledge of the basic problems, conceptual categories and terminology of geological hazards, and knows the history of development and interrelationships of the sciences covering geological hazards with other natural sciences	U01 U03 W02	1 1 1
W03	has knowledge of research methods used in geohazards science	U03 U09	2 1
W04	correctly identifies and resolves dilemmas related to the profession	K02 K06	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*

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*
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*
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.*
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*
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.*
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*
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*
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-IZ-S1-201_fs_1	lecture	15	exam	W01, W02, W03	b01, b04, b07, c02, c03, c06, c07, e06, f01, f02
W2-IZ-S1-201_fs_2	laboratory classes	15	course work	W01, W02, W03, W04	a01, a05, b01, b04, b07, c01, c02, c03, c06, c07, d01, d03, d04, e01, e05, e06, e07, 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?**
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*	Yes
a05	Preparation for classes	Production/preparation of tools, materials or documentation necessary for class participation *developing, preparing and assessing the usefulness of tools and materials (e.g. aids, scenarios, research tools, equipment, etc.) to be employed in class or as an aid when preparing for classes*	Yes
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*	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*	Yes
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*	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

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

7.	**General information about the module**
Module name	**Geology Field Research**
Module code	W2-IZ-S1-158
Number of the ECTS credits	1
Language of instruction	Polish
Purpose and description of the content of education	The aim of the module is to acquire the ability to conduct basic geological research in the field as well as to comprehensively learn about the geological evolution and tectonics of the Sudetes, and in particular the Kaczawa Mountains. Showing examples of different rocks; illustration of petrogenesis processes, rock transformations, learning the methodology of petrographic observations; documentation of geological exposures; geological interpretations; getting acquainted with the geological objects typical of the Kaczawa unit.
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)
U1	student: - acquires the skills of conducting basic geological documentation: methods of performing basic measurements (including mastering the ability to conduct measurements with the use of a compass), learn to prepare sketches of geological outcrops and profiles, as well as reading and interpreting geological maps - acquires the skills of observation and description of geological processes, the analysis of rock features in terms of the processes that contributed to their formation, cause-and-effect reasoning as well as proficiency in using geological vocabulary. - acquires teamwork skills	U01 U02 U03 U04 U05	3 3 1 3 1
W1	student: - acquires knowledge about the geological structure of the Sudetes, in particular the Kaczawskie Mountains. - acquires basic information on forecasting natural disasters with a geological background and predicting the effects of geological events.	U07 U08 W01 W02	2 2 4 3

9. Methods of conducting classes

Code	Category	Name (description)
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-IZ-S1-158_fs_1	field practice	36	course work	U1, W1	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?
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)*	Yes
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*	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*	Yes
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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Geomorphological Field Methods in Environmental Threats Analysis**
Module code	W2-IZ-S1-225
Number of the ECTS credits	1
Language of instruction	Polish
Purpose and description of the content of education	During the course, the student will attempt to master the basics of research methods used in geomorphology (morphography, morphometry, morphogenesis, morphochronology), including methods for identifying, monitoring and preventing the effects of Earth surface processes that represent potential geohazards (e.g. mass movements, slopewash, abrasion and pipe erosion, fluvial, karst, nival and aeolian processes). The student learns how to use basic measuring instruments in geomorphological research and becomes familiar with the procedures used in the analysis of geomorphological hazards.
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)
W01	the student knows the basic research methods and geomorphological tools to identify the causes of geomorphological hazards and describe their effects	W03	4
W02	the student has basic knowledge of technical solutions, objects and systems used to monitor and prevent geomorphologically induced geohazards	W08	3
W03	under the guidance of a scientific supervisor, the student prepares expert reports based on field observations and measurements in the field of geomorphology and geomorphological hazards	U04	4
W04	the student is able to present the results of his/her research in the field of geomorphology and geomorphological hazards using the specialized terminology	U05	5
W05	the student is able to plan and carry out a geomorphological mapping project in teamwork	U07	3
W06	the student is able to make a critical analysis of solutions to prevent geomorphologically induced geohazards	U12	2
W2-IZ-S1-225_7	when working in the field, the student shows responsibility for his/her own safety and that of the members of the research team	K05	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*
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*
c05	Demonstration methods	Poster presentation *a visual presentation of a problem and its proposed solutions, created by the person teaching the course or by a student on a poster board showing one major element or a collection of several elements in a coherent graphic form*
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*
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-IZ-S1-225_fz1	field practice	36	course work	W01, W02, W03, W04, W05,	a03, b04, b07, c05, c06, e01,

				W06, W2-IZ-S1-225_7	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?**
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*	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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Geomorphological Hazards**
Module code	W2-IZ-S1-203
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	During the classes, the student learns about the environmental hazards associated with the occurrence of geomorphological processes. During the classes, the risks associated with landslides, debris flows, material falling off rock walls, ground collapse, fluvial erosion, ravine erosion and river bank erosion are discussed. Causes and effects related to the occurrence of particular geomorphological processes are analysed. The classes also discuss methods of prevention and early response in connection with the occurrence of geomorphological processes.
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)
U04	applies research methods and tools in the field of geohazards. Self-determination conducts observations and selects appropriate sources for geohazard analysis	U04	3
W01	has knowledge of the basic problems, conceptual categories and terminology of geomorphological hazards. Knows the history of development and interrelationships of sciences covering geomorphological hazards with other natural sciences	W01	4
W02	has knowledge of research methods used in geomorphological hazard science	W03	4
W03	be able to use available sources of information on geomorphological hazards, including electronic sources, and have the ability to make correct inferences based on data from a variety of sources	W08	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*
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*
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*

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-IZ-S1-203_fs_1	lecture	15	course work	U04, W01, W02, W03	b01, c07
W2-IZ-S1-203_fs_2	laboratory classes	15	course work	U04, W01	b07, d01, e07

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

7.	**General information about the module**
Module name	**Geomorphology**
Module code	W2-IZ-S1-152
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	Geomorphology definition. Exogenous and endogenous factors shaping the Earth's surface. Physical and chemical weathering. Mass movements. Fluvial geomorphology, structural geomorphology, aeolian processes, karst relief, accumulative and erosive activity of glaciers, relief of anthropogenic origin. Other geomorphological processes. Geomorphology in geohazards.
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)
U05	can discuss issues related to geomorphology using specialist terminology	U05	3
W01	understands basic relief phenomena and processes with a focus on geohazards. Has knowledge of the basic problems, conceptual categories and terminology of geohazards	W01	4
W02	knows the history of development and the links between geomorphology and other natural sciences directed towards geohazards issues	W02	4
W03	has knowledge of research methodology directed at geohazards and applied to geomorphology	W05	4

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*
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-IZ-S1-152_fs_1	lecture	15	exam	U05, W01, W02, W03	b01, c07
W2-IZ-S1-152_fs_2	laboratory classes	15	course work	U05	b07, c06

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

7.	**General information about the module**
Module name	**Geophysical Field Methods in Environmental Threats Analysis**
Module code	W2-IZ-S1-224
Number of the ECTS credits	1
Language of instruction	Polish
Purpose and description of the content of education	During the field trip, students will learn about the geophysical methods used in shallow environmental research, with particular emphasis on the electro-resistance, electromagnetic, georadar and seismic methods. They will learn the construction, principle of operation and operation of the apparatus. They independently plan and perform geophysical surveys and interpret and visualize the collected data.
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	he is responsible for the safety of his own and others' work, knows how to act in emergency situations	K04 K05 U13	2 4 2
K02	able to think and act in an entrepreneurial way	K01 K04 W09	2 3 3
U01	he can use analytical, simulation and experimental methods to formulate and solve environmental engineering tasks aimed at geohazards using geophysical methods	U01 U03 U04 U13 W08	2 4 5 4 3
U02	can evaluate the usefulness of routine methods and tools for solving a simple task in the field of environmental engineering aimed at geohazards of a practical nature, and can select and apply the appropriate method and geophysical tools	U01 U04 U09	3 5 3

		W08	4
W01	has basic knowledge of the operation of equipment used in geophysical research	W01 W02 W03 W08	2 2 4 4
W02	knows the basic methods, techniques, tools and materials used in solving simple engineering tasks in the field of environmental engineering aimed at geohazards using geophysical methods	U09 U12 W02 W03 W08	3 3 3 5 4

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*
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*
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*
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-IZ-S1-224_fs_1	field practice	30	course work	K01, K02, U01, U02, W01, W02	c06, d01, d03, e01, e04, e05, 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*	Yes
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)*	Yes
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
a05	Preparation for classes	Production/preparation of tools, materials or documentation necessary for class participation *developing, preparing and assessing the usefulness of tools and materials (e.g. aids, scenarios, research tools, equipment, etc.) to be employed in class or as an aid when preparing for classes*	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
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*	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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Hydrogeology**
Module code	W2-IZ-S1-164
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	As part of the Hydrogeology module, the student should become familiar with the issues of groundwater, their occurrence (unsaturated and saturated zone), physicochemical properties, basic hydrogeological parameters, mutual relations between surface water and groundwater, the laws governing groundwater movement, the basics of groundwater intake , basic methods of cartographic presentation of groundwater occurrence and estimation of their resources as well as the basis of their protection. As a consequence, the student should be able to interpret the results of hydrogeological and hydrochemical studies, make basic maps and hydrogeological cross-sections.
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)
U01	the student is able to use available electronic and other sources of hydrogeological information, including geohazards, and has the ability to correctly draw conclusions based on data from various sources	U02 U03	4 5
U02	the student uses basic techniques and research tools in the field of hydrogeology as well as basic statistical methods, algorithms and IT techniques to describe phenomena and analyze hydrogeological data	U03 U04 U07	3 4 4
W01	the student understands the basic hydrogeological phenomena and processes, including those focused on geohazards	W01 W02	5 4
W02	the student knows the basic techniques and research tools used in hydrogeology to describe the conditions of occurrence, causes and effects of geohazards	W02 W03	3 5
W06	the student has basic knowledge about the life cycle of hydrogeological objects and devices as well as hydrogeological technical systems	W08	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*
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*
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*
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*
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
W2-IZ-S1-164_fs_1	lecture	15	exam	W01, W02, W06	a01, c07, f01, f02
W2-IZ-S1-164_fs_2	laboratory classes	15	course work	U01, U02	a03, a05, c06, c07, d01, d02, d03, e01, e06, f02

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

7.	**General information about the module**
Module name	**Hydrological Hazards**
Module code	W2-IZ-S1-202
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	As part of the module, the student learns about the most important hydrological threats, as well as their impact on life and selected areas of human activity. He learns the basic research methods and tools to describe the causes and effects of hydrological hazards. Using various sources of information about the environment, he acquires the ability to recognize hydrological threats in spatial and temporal terms. He learns the basic ways of applying environmental engineering to prevent hydrological hazards.
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	is aware of the importance and understands the non-technical aspects and effects of engineering activities, including its impact on the environment and the related responsibility for decisions made	U01 U03	3 3
U01	he is able to use available sources of information on hydrological hazards, including electronic sources, and has the ability to correctly draw conclusions based on data from various sources	U04 U05 U09	4 3 4
W0	he knows the basic techniques and research tools used in hydrology related to geohazards to describe the causes and effects of geohazards	W01 W02 W08	4 4 4
W01	in the interpretation of phenomena and processes related to hydrological hazards, he relies on empirical foundations, fully understanding the importance of mathematical and statistical methods	W01 W08	5 3
W02	has knowledge in the field of statistics and computer science at a level that allows describing and interpreting hydrological phenomena and processes that constitute geohazards	U11 W01 W02	3 5 3

W06	has basic knowledge of the life cycle of equipment, facilities and technical systems related to hydrological hazards	U10 W01 W05	4 3 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*
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*
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-IZ-S1-202_fs_1	lecture	15	exam	W0, W01, W02, W06	a01
W2-IZ-S1-202_fs_2	laboratory classes	15	course work	K01, U01, W0, W01, W02, W06	d01, d03, f02

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*	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

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

7.	**General information about the module**
Module name	**Hydrology**
Module code	W2-IZ-S1-163
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	The student knows basic information about hydrology and water management. Understands the importance of water in nature and the human economy. Understands the hazards that arise from flowing water activities.
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)
W01	knows basic information about the circulation of water in nature	W01 W02 W05 W08	2 2 2 4
W02	knows the basic physical and chemical properties of water	U09 W01 W02 W03 W08	2 3 3 3 3
W03	knows the geomorphological types of rivers and debris transport	W01 W02 W08	3 3 3
W04	knows the basic genetic and trophic types of lakes	W01 W02 W08	3 3 2

		W09	2
W05	knows the basic types of river regimes and flooding	W01 W02 W09	3 3 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*
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*
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*
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*
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*
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*

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-IZ-S1-163_fs_1	lecture	15	exam	W01, W02, W03, W04, W05	a01, a03, b01, b02, c01, d02, e09, f01
W2-IZ-S1-163_fs_2	laboratory classes	15	course work	W01, W02, W03	a05, b07, c01, d02, d03, e01, 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*	Yes
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*	Yes
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)*	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
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*	Yes
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*	Yes
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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Introduction to the Labour Market**
Module code	W2-IZ-S1-021
Number of the ECTS credits	1
Language of instruction	Polish
Purpose and description of the content of education	The module provides theoretical and practical knowledge enabling a graduate of environmental hazards engineering to efficiently enter the labor market, including information necessary to start their own business. Students learn about the current situation on the labor market, and learn about the basic regulations regarding the labor market, including the rights and obligations of employees and employers.
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	orrectly identifies and resolves dilemmas related to the practice of the profession	K02	3
K02	able to think and act in an entrepreneurial way	K03	4
K03	demonstrates the need to constantly update knowledge in the field and improve professional and personal competences.	K01	5
U01	he independently plans his own professional or scientific career	U08	5
W01	knows and understands the conditions of performing various types of professional activity related to the engineering of environmental hazards	W07	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
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*
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-IZ-S1-021_fs_1	laboratory classes	15	course work	K01, K02, K03, U01, W01	b02, b04, c07, f02

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

7.	**General information about the module**
Module name	**Legal Aspects of Environmental Threats**
Module code	W2-IZ-S1-405
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	The classes are designed to enable students to become familiar with the main legal acts related to the definition and diagnosis of environmental threats and the prevention and elimination of their effects, with particular emphasis on the so-called geohazards. Particular attention is paid to the provisions of Polish legislation (laws, executive acts) on environmental hazards, implementing within the scope of their regulation many European Union directives and taking into account the recommendations of global international arrangements (conventions, protocols). The considered scenarios of legal aspects of environmental threats relate to all natural elements (such as: land surface, minerals, waters, air, landscape, climate and other elements of biodiversity, as well as interactions between these elements) as well as damage done in the sphere of human life and economic activity.
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)
U01	has an advanced knowledge of how to define and diagnose threats to the environment covering all natural elements such as land surface, minerals, water, air, landscape, climate and other elements of biodiversity, as well as the interactions between these elements	U02 U03	2 1
U02	is able to counteract the occurrence of so-called "geohazards" using the principles stemming from the laws and regulations in force in the legal system	K06 U13	1 1
U03	is able to eliminate the effects of so-called "geohazards" using the principles stemming from the laws and regulations in force in the legal system	K06 U13	1 1
W01	has advanced knowledge of the provisions of Polish legislation on environmental hazards, i.e. laws and executive acts implementing, within the scope of their regulation, European Union law and taking into account the recommendations of international global arrangements (conventions, protocols)	W01 W03 W04	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*
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*
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*
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**
W2-IZ-S1-405_fs_1	lecture	15	course work	U01, U02, U03, W01	a01, a03, b01, c02, 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?**
a02	Preparation for classes	Literature reading / analysis of source materials *reading the literature indicated in the syllabus; reviewing, organizing, analyzing and selecting source*	No

		materials to be used in class	
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
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
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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Mathematics in Earth Sciences**
Module code	W2-IZ-S1-001
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	The aim of the education content is getting to know the basic concepts and computational methods in mathematics, in particular: 1) Systematisation of knowledge about sets, functions and their properties. 2) Learning the basics of matrix calculus and solving a system of linear equations Tasks for the expert performance: 1) useful transformations of rational and irrational expressions (e.g. calculating the distance between two points on the Earth), 2) simple matrix operations; 3) calculating the area of the plane, the length of the arc and the volume of the solid, using the appropriate integrals. and also use 1) properties of functions, especially exponential, logarithmic and trigonometric functions for solving basic problems 2) methods of differential calculus for determining the extremes of a function and examining its course.
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 implementation of the module enables a critical assessment of the acquired knowledge, development of analytical skills, searching for various solutions to the problem	K01 K02 K03	3 4 3
U01	strengthening the ability to apply the acquired knowledge in the field of mathematics in solving tasks, including engineering tasks	U01 U02 U07 U08	3 3 3 3
W01	the aim of the module is to consolidate and deepen knowledge in the field of general mathematics	W01 W02	1 1

		W03 W04	4 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*
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*
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-IZ-S1-001_fs_1	practical classes	30	course work	K01, U01, W01	a05, c07, d01, d03, e05

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*	Yes
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*	Yes
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)*	Yes
c02	Preparation for verification of learning outcomes	Studying the literature used in and the materials produced in class	Yes

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

7.	**General information about the module**
Module name	**Meteorological Field Methods in Environmental Threats Analysis**
Module code	W2-IZ-S1-226
Number of the ECTS credits	1
Language of instruction	Polish
Purpose and description of the content of education	The classes emphasize the practical skills of making meteorological measurements and observations related to the analysis of the natural environment in the field. They familiarize themselves with modern techniques and measuring devices in the field of meteorological measurements. They teach mutual relations and links between different climatic scales in relation to geohazards. They teach how to analyze and draw correct conclusions from measurements and meteorological observations in the field of forecasting phenomena related to geohazards. The classes also familiarize students with the activities of state institutions responsible for identifying and warning against geohazards.
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)
U01	student conducts observations and performs meteorological measurements in the field in the field of geohazards	U04 W08	3 2
U02	student can plan and carry out experiments, interpret the results and draw conclusions	U03 W08	3 2
W01	in the interpretation of phenomena and processes related to meteorological hazards, he relies on empirical foundations, fully understanding the importance of mathematical and statistical methods	W01 W08	3 3
W02	tudent knows the basic methods, techniques, tools and materials used in solving simple engineering tasks in the field of environmental engineering aimed at meteorological hazards	W03 W08	3 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*
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*
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-IZ-S1-226_fs_1	field practice	36	course work	U01, U02, W01, W02	a03, a05, b07, c07, d01, 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?**
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
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
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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Meteorological Hazards**
Module code	W2-IZ-S1-204
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	As part of the module, the student learns about the most important meteorological hazards, as well as their impact on life and selected areas of human activity. He learns the basic methods and research tools to describe the causes and effects of meteorological hazards. Using various sources of information about the environment, the student acquires the ability to recognize meteorological threats in spatial and temporal terms. He learns the basic ways of applying environmental engineering to prevent meteorological hazards.
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)
U01	is able to use available sources of information on meteorological hazards, including electronic sources, and has the ability to correctly draw conclusions based on data from various sources	U02 U09	3 2
U02	he is able to develop a specification for tasks in the field of environmental engineering aimed at geohazards of a practical meteorological nature	U04 U10	3 2
W01	in the interpretation of phenomena and processes related to meteorological hazards, he relies on empirical foundations, fully understanding the importance of mathematical and statistical methods	W01 W08	3 2
W02	he knows the basic techniques and research tools used in meteorology related to geohazards to describe the causes and effects of geohazards	W03 W08	3 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*
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*
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*
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-IZ-S1-204_fs_1	lecture	15	course work	W01, W02	a01, a03, b07
W2-IZ-S1-204_fs_2	laboratory classes	15	course work	U01, U02	a03, b07, c07, d01, e01, 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*	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	No

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

7.	**General information about the module**
Module name	**Meteorological, Hydrological and Hydrochemical Methods in Geohazard Analysis**
Module code	W2-IZ-S1-209
Number of the ECTS credits	4
Language of instruction	Polish
Purpose and description of the content of education	Students will learn basic survey methods used in geohazard analysis. He/she knows and can use basic instruments for hydrometric and meteorological measurements. He/she is able to statistically process data obtained from measurements and draw correct conclusions.
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)
W01	knows the basic instruments for hydrometric measurements	U09 W01 W02 W03 W08	2 3 3 5 4
W02	knows the basic instruments for meteorological measurements	W01 W02 W09	3 3 2
W03	can plan and carry out hydro - meteorological measurements	U09 W02 W03 W09	2 3 3 3
W04	can statistically process the data obtained from the measurements	U09 U10 W02	2 3 3

		W03	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*
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*
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*
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*
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*

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-IZ-S1-209_fs_1	lecture	15	exam	W01, W02, W03	a01, a05, b01, b02, c01, d02, d03, e01, e06, e09, f01
W2-IZ-S1-209_fs_2	laboratory classes	15	course work	W03, W04	a05, c01, d03, e01, e09, 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*	Yes
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*	Yes
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)*	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
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*	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

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

7.	**General information about the module**
Module name	**Meteorology and Climatology**
Module code	W2-IZ-S1-153
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	The student acquires advanced meteorological and climatic knowledge to understand the fundamental processes in the atmosphere, including those leading to the occurrence of geohazards. The student can explain these processes. The student can use meteorological instruments to conduct weather measurements and observations. The student knows the construction and principles of operation of meteorological instruments. The student knows and can apply basic statistical methods for data analysis and obtaining data for meteorological and climatic studies from various sources.
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)
U01	the student is able to use available electronic and other sources of meteorological and climatic information, including geohazards, and can correctly draw conclusions based on data from various sources	U02	5
U02	the student applies basic research techniques and tools in meteorology and climatology, as well as basic statistical methods, algorithms and IT techniques to describe phenomena and data analysis	U04	5
W01	the student understands basic meteorological phenomena and processes, including geohazards	W01	5
W02	the student knows the basic techniques and research tools used in meteorology and climatology to describe the conditions of occurrence, causes and effects of geohazards	W03	3
W06	the student has basic knowledge about the life cycle of objects, devices and technical systems used in meteorology and climatology	W08	5

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*

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*

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-IZ-S1-153_fs_1	lecture	15	exam	W01, W02	a01
W2-IZ-S1-153_fs_2	laboratory classes	15	course work	U01, U02, W01, W02, W06	d01, e01

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

7.	**General information about the module**
Module name	**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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Module in the "Creative Expression and Critical Thinking" area**
Module code	MO-2023-SS-ETKM
Number of the ECTS credits	3
Language of instruction	
Purpose and description of the content of education	Underlying the area of “Critical Thinking and Creative Expression” is the conviction that it is necessary to interest students in various intellectual traditions and forms of creative practice making it possible to approach a given problem from many perspectives. It is crucial to develop critical thinking skills, in particular with regard to information present in various forms of communication (popular, popular science, specialist publications, traditional and so-called new media, or artistic activities based on scientific research). Equally important is work in the area of cultural awareness and expression aimed at creative expression of ideas, experiences and emotions through various means of expression: music, theater, literature and visual arts. Driving the process of self-creation is the need to be creative and the need for creative expression, stemming from a deeply rooted human tendency to be inventive while drawing from the values found in art, literature, music, fine arts, values defining the culture of the nation, existing in national traditions, in historical memory and in folk culture.
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 critical thinking and creative expression in connection with the leading discipline of the degree programme.	MOB.2023_U01	3
U_02	Communicates the results of his/her work in the field of critical thinking and creative expression 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 pertaining to critical thinking and creative expression.	MOB.2023_W01	3
W_02	Understands the connection between issues related to critical thinking and creative expression 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*	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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Module in the "Digital World" area**
Module code	MO-2023-SS-CS
Number of the ECTS credits	3
Language of instruction	
Purpose and description of the content of education	Apart from the real world, the digital world is of course another area constantly present in modern people’s lives. The two human environments – the natural and the cultural one – have been joined by a third one, i.e. the digital environment. Modern digital technologies create new opportunities, but their constant development may, in addition to new opportunities, also create new threats. The modules proposed within the “Digital World” area provide an opportunity to learn about the crucial, current technological and social aspects of the digital world and to build competences for conscious, creative and safe functioning in this/her world. The modules of the Digital World area are divided into two sub-areas. Crucial for the first one, dubbed “Digital technologies”, are the issues pertaining to technologies; this/her sub-area will allow students to expand their digital competences in the field of programming as well as data processing and analysis. Essential for the second sub-area, dubbed “Digital society”, is a reflection on the impact of the development of digital technologies, including artificial intelligence, on the way we function as individuals and as entire societies. The purpose of the module content in this/her sub-area is to develop students' skills of navigating the digital world in creatively and safely, while maintaining personal autonomy and self-awareness.
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	Shows openness to science-based solutions to cognitive and practical problems and is ready to fulfill social obligations.	MOB.2023_K01	3
U_01	Asks questions, analyzes research problems, and finds solutions to them, making use of knowledge, skills and experience gained in the field of digital technologies and issues pertaining to the digital society in conjunction with the leading discipline of the degree programme.	MOB.2023_U01	3
U_02	Communicates the results of his/her work pertaining to the key technological and social aspects of the digital world 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 pertaining to key technological and social aspects of the digital world.	MOB.2023_W01	3
W_02	Understands the connection between key technological and social aspects of the digital world and the leading discipline	MOB.2023_W01	3

	of the degree programme.		

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	No

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

7.	**General information about the module**
Module name	**Module in the "Health and Personal Development" area**
Module code	MO-2023-SS-ZRO
Number of the ECTS credits	3
Language of instruction	
Purpose and description of the content of education	The area of “Health and Personal Development” opens university education to the perspective of the well-being of an individual (i.e., a student, who is a person entering adulthood). The area focuses on such categories as maintaining physical, mental and social health, the level of satisfaction with various spheres of one’s life and the development of "soft" skills (dealing with stress, communicating with others or the conscious shaping and managing one’s life). The modules offered within the “Health” sub-area are meant to equip students with the ability to recognize and assess their own health (including their mental health) and to find appropriate means of promoting it. The point of departure of the module is the presentation of modern knowledge that distinguishes evidence-based medicine from common beliefs. The modules in the “Personal Development” sub-area direct students towards methods of the practical maintenance of one’s well-being (including mental well-being). They supply competences for building one’s personal potential in the modern world in a way which is active and effective as well as conscious and prudent. The main concern is realizing and recognizing one's own preferences, possibilities and limits, as well as the awareness of agency and responsibility for the balance between health, happiness and development. Having attended the module, the individual will be in a position to combine his/her own development with taking care of his/her mental and physical condition and general well-being in a balanced way.
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 the concept of an individual’s well-being, including their health and personal development, in conjunction with the leading discipline of the degree programme.	MOB.2023_U01	3
U_02	Communicates the results of his/her work regarding the concept of an individual’s well-being, including their health and personal development, 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 the concept of an individual’s well-being, including their health and personal development.	MOB.2023_W01	3

W_02	Understands the connection between the issues pertaining to the concept of an individual’s well-being, including their health and personal development, 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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Module in the "Natural Environment and Technologies" area**
Module code	MO-2023-SS-SNT
Number of the ECTS credits	3
Language of instruction	
Purpose and description of the content of education	The “Natural Environment and Technologies” area pertains to human interaction with the material environment, both the natural one and the one heavily modified by technology. This is the environment where people live, which they are subject to, and which they change in many ways. Understanding the Anthropocene requires an understanding of how biological systems function (from cells to ecosystems, to modern environmental threats, climate issues, natural resources, and many other natural issues) as well as an understanding of the rudiments of technical and technological knowledge. It is crucial to know and understand how technological development, especially in the areas of energy, green technologies, modern materials or everyday life (e.g. food production) can change the nature of human impact and support the way we care for the environment. The ways in which the human impact on the environment is regulated include using legal tools, such as nature protection law or energy law, as well as EU regulations, Sustainable Development Goals or the European Green Deal.
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	Shows openness to science-based solutions to cognitive and practical problems and is ready to meet social obligations.	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 the human interaction with the material environment – both natural and technologically modified, in conjunction with the leading discipline of the degree programme.	MOB.2023_U01	3
U_02	Communicates the results of his/her work pertaining to the human interaction with the material environment – both natural and technologically modified, 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 human interaction with the material environment – both natural and technologically modified.	MOB.2023_W01	3
W_02	Understands the connection between issues pertaining to human interaction with the material environment – both natural and technologically modified, 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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Module in the "The Limits of Science" area**
Module code	MO-2023-SS-GN
Number of the ECTS credits	3
Language of instruction	
Purpose and description of the content of education	Scientific pursuits and the ways people function in the world are geared towards getting to know the reality and acquiring knowledge. All of this/her is within the purview of the “Limits of Science” area. It endeavours to indicate the difference between science and pseudoscience, the pitfalls and benefits of popularizing knowledge, to address the issue of how knowledge is obtained in various research communities. What is the difference between the natural sciences and humanities? What happens on the way from a hypothesis to testing a theory? What methods do the different sciences have at their disposal? Can humanities be scientific and how much literature is there in physics? The “Limits of Science” area strives to indicate practical ways of navigating the world of science. It strives to describe how to distinguish valuable knowledge from information noise, to introduce students to the arcana of recognizing and applying research methods and to develop the panorama of concepts related to the classification of knowledge and cognition, to present the history and the directions of human inquiry. An important role of the area is to indicate the methods of interpreting scientific texts and the research results contained within them, and to develop the ability to present scientific content in an effective and accessible way.
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 the issues falling under the scope of limits of science , in conjunction with the leading discipline of the degree programme.	MOB.2023_U01	3
U_02	Communicates the results of his/her work on the issues falling under the scope of limits of science 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 typical to scientific enquiry and practicing science.	MOB.2023_W01	3
W_02	Understands the connection between the issues falling under the scope of limits of science and the leading discipline of	MOB.2023_W01	3

	the degree programme.		

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	No

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

7.	**General information about the module**
Module name	**Monitoring of the natural environment**
Module code	W2-IZ-S1-305
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	The course aims to gain knowledge on the methods of monitoring present or possible environmental hazards. The student will gain knowledge about the principles of the construction of geohazard monitoring systems. The student will learn the methods of using data obtained from the monitoring (observation) of geohazards and will define the role of monitoring in environmental management and spatial planning, crisis management, and reducing human and material losses. The student will get acquainted with the actual legal acts and activities of the State Environment Monitoring.
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)
U01	student can use his knowledge, formulate and solve complex and unusual problems and perform tasks in various conditions	U01	5
U03	student can use appropriate methods and tools, including electronic sources, and has the ability to correctly draw conclusions based on data from various sources	U03	5
U04	student appropriately selects and applies research methods and tools in the field of science including geohazards, independently conducts observations and measurements in the field or laboratory, and applies statistical and IT techniques to describe phenomena and data analysis	U04	5
U13	student is able to solve practical engineering tasks requiring the use of standards, norms and technologies appropriate for actions counteracting geohazards	U13	5
W01	student has advanced knowledge on geohazard sciences, knows the terminology used in these sciences and understands the complex conditions of phenomena constituting geohazards	W01	5
W02	student knows selected facts, objects and phenomena, as well as methods and theories concerning them, explaining the complex relationships between them	W02	5
W03	student knows research techniques and tools used in science related to geohazards, including statistical and IT tools to	W03	4

	describe and interpret geohazardous phenomena		

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*
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*
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*
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*
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*

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-IZ-S1-305_fs_1	lecture	15	exam	W01, W02, W03	a01, b03, b07, c07, f02
W2-IZ-S1-305_fs_2	laboratory classes	15	course work	U01, U03, U04, U13	b07, b09, c07, d03, e08, 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
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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**MSc seminar I**
Module code	W2-IZ-S1-309
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	The student acquires the skills of preparing a scientific paper at the level of an engineering paper. He learns how to plan and implement the following stages of preparing a scientific paper: obtaining data and literature, effective selection of data and literature, proper use of information (including the principles of Anti-plagiarism), formulation of the purpose of a scientific paper. Depending on the specialty pursued by the student and the topic of the engineering paper: the selection of appropriate methods for solving a specific problem or making a compilation on the basis of existing literature.
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	understands the need for lifelong learning, demonstrates the need to constantly update directional knowledge and improve professional and personal competencies	K01 U08	5 5
K02	able to appropriately identify priorities for accomplishing a task defined by oneself or others	K02	5
U01	he is able to use available sources of information on geohazards, including electronic sources, and has the ability to make correct inferences based on data from various sources	W01	5
U02	able to prepare a well-documented study of geohazards and make an oral presentation of specific issues in geohazards both in Polish and English	U02	5
U03	uses scientific language in the discourses undertaken with specialists in the selected discipline of geographical sciences	U05	5
U04	understands literature on the sciences involving geohazards in Polish; reads uncomplicated scientific texts in English with understanding	U06	5
W01	has the required knowledge of industrial property protection and copyright law	W06	3

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

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-IZ-S1-309_fs_1	seminar	30	course work	K01, K02, U01, U02, U03, U04, W01	b04, b05

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*	Yes
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*	Yes
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)*	Yes
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
a05	Preparation for classes	Production/preparation of tools, materials or documentation necessary for class participation *developing, preparing and assessing the usefulness of tools and materials (e.g. aids, scenarios, research tools, equipment, etc.) to be employed in class or as an aid when preparing for classes*	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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**MSc seminar II**
Module code	W2-IZ-S1-356
Number of the ECTS credits	4
Language of instruction	Polish
Purpose and description of the content of education	The student acquires the skills of preparing a scientific paper at the level of an engineering thesis. He learns how to plan and implement the following stages of preparing a scientific paper: obtaining data and literature, effective selection of data and literature, proper use of information (including the principles of Anti-plagiarism), formulation of the purpose of a scientific paper. Depending on the specialty pursued by the student and the topic of the engineering paper: the selection of appropriate methods for solving a specific problem or making a compilation on the basis of existing literature.
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	understands the need for lifelong learning, demonstrates the need to constantly update directional knowledge and improve professional and personal competencies	K01	5
K02	correctly identifies and resolves dilemmas related to the profession	K04	5
U01	is able to use available sources of information on geohazards, including electronic sources, and has the ability to correctly infer data from various sources	W02	5
U02	able to prepare a well-documented study of geohazards and make an oral presentation of specific issues in geohazards both in Polish and English	U05	5
U03	uses scientific language in the discourses undertaken with specialists in the selected discipline of geographical sciences	U05 U06	4 3
W01	has the required knowledge of industrial property protection and copyright law	W06	3

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

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-IZ-S1-356_fs_1	seminar	30	course work	K01, K02, U01, U02, U03, W01	b04, b05

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*	Yes
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*	Yes
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)*	Yes
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
a05	Preparation for classes	Production/preparation of tools, materials or documentation necessary for class participation *developing, preparing and assessing the usefulness of tools and materials (e.g. aids, scenarios, research tools, equipment, etc.) to be employed in class or as an aid when preparing for classes*	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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**MSc seminar III**
Module code	W2-IZ-S1-407
Number of the ECTS credits	8
Language of instruction	Polish
Purpose and description of the content of education	The student acquires the skills of preparing a scientific paper at the level of an engineering paper. He learns how to plan and implement the following stages of preparing a scientific paper: obtaining data and literature, effective selection of data and literature, proper use of information (including the principles of Anti-plagiarism), formulation of the purpose of a scientific paper. Depending on the specialty pursued by the student and the topic of the engineering paper: the selection of appropriate methods for solving a specific problem or making a compilation on the basis of existing literature.
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)
U01	is able to use available sources of information on geohazards, including electronic sources, and has the ability to correctly infer data from various sources	U02	5
U02	able to prepare a well-documented study of geohazards and make an oral presentation of specific issues in geohazards both in Polish and English	U05	5
U03	uses scientific language in the discourses undertaken with specialists in the selected discipline of geographical sciences	U03 U04	3 2
U04	understands the need for lifelong learning, demonstrates the need to constantly update directional knowledge and improve professional and personal competencies	U08	5
W01	has the required knowledge of industrial property protection and copyright law	W06	3

9. Methods of conducting classes

Code	Category	Name (description)
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*

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-IZ-S1-407_fs_1	seminar	30	course work	U01, U02, U03, U04, W01	b04, b05

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*	Yes
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*	Yes
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)*	Yes
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
a05	Preparation for classes	Production/preparation of tools, materials or documentation necessary for class participation *developing, preparing and assessing the usefulness of tools and materials (e.g. aids, scenarios, research tools, equipment, etc.) to be employed in class or as an aid when preparing for classes*	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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Natural Environment Geochemistry**
Module code	W2-IZ-S1-151
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	The main objective of the Natural Environment Geochemistry module is to study the mechanisms of element circulation in the outer layers of the Earth, interactions between biotic and abiotic elements of the environment, and environmental geochemical changes in the lithosphere, atmosphere, and hydrosphere. Assessment of the effects of anthropogenic pollution - local, regional, and global problems (potentially toxic elements, particulate pollutants, and selected organic pollutants).
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	he is ready to assess his knowledge critically, demonstrating the need to update his field knowledge and constantly improve professional competencies	K01	4
U01	can use appropriate sources of information in the geochemistry and toxicology of selected elements, knows the pros and cons of interpreting test results. Can use proper measurement and analytical techniques and correctly draw conclusions based on information from various sources	U02 U03	4 4
W01	he has advanced knowledge in environmental geochemistry and knows the geochemical processes in the lithosphere. He knows research methods in environmental geochemistry and factors determining the geochemical circulation of toxins	W01 W02	5 5

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*
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*
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*
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-IZ-S1-151_fs_1	lecture	15	course work	K01, W01	b01, c07, f02
W2-IZ-S1-151_fs_2	laboratory classes	15	course work	K01, U01	c07, d03, e01, 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
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
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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Natural hazards related to mining exploitation**
Module code	W2-IZ-S1-310
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	The study aims to gain knowledge in the field of natural geohazards occurring during exploitations and to recognize techniques for their mitigation. The module concerns: - mining exploitation, - stress distributions around excavations, - methods of assessing the degree of seismic hazard in a mine, - mining tremors and rockburst, - rockburst prevention, - impact of vibrations on the surface, - continuous and discontinuous deformations occurring on the surface.
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)
K1	is ready to undertake engineering activities and take responsibility for decisions made in the field of geohazard analysis in mining	K04	4
U1	can use the knowledge, formulate and solve complex and unusual problems and perform calculations to analyse geohazard problems in mining	U01	4
U2	can use analytical, simulation and experimental methods to solve engineering tasks aimed at assessing geohazards in mining	U09	4
U3	can use the appropriate methods and tools for the analysis of geohazards in mines and has the ability to correctly draw conclusions based on mining data	U03	4
W1	has advanced knowledge in the field of science dealing with geohazards in mining, knows the terminology used in these sciences and understands the complex conditions of geohazardous phenomena	W01	5
W2	knows the research techniques and tools used in the study of geohazards in mining, including statistical and IT tools to	W03	5

	describe and interpret geohazard phenomena		

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*
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*
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-IZ-S1-310_fs_1	lecture	15	course work	K1, U3, W1, W2	a01, b01, c07, f02
W2-IZ-S1-310_fs_2	laboratory classes	15	course work	K1, U1, U2, U3	d01, e01, 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	Yes

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

7.	**General information about the module**
Module name	**Open University Module**
Module code	OMU-2023-SS-01-OG
Number of the ECTS credits	3
Language of instruction	
Purpose and description of the content of education	The aim of the module is to extend the students' knowledge to include specialist content that goes beyond their degree programme and to inspire them to search for information on their own. The issues addressed are on the one hand meant to arouse curiosity, and, on the other hand, to indicate the usefulness of interdisciplinary knowledge in professional life as well as in social relations and interactions. They will be connected with current research results or with specialist professional experience. The module offers diverse forms of classes, involving in both innovative and professional ways of conveying knowledge, as well as interactive methods, inspiring students to actively participate in classes. The interdisciplinary assumptions of the module allow for the classes being taught by teachers representing various scientific disciplines, resulting in a multi-faceted presentation of the issues. In addition, the module can be taught in foreign languages. The student selects the subject matter of the classes from the submitted proposals.
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)
01	The student understands the relationship between humanities, social sciences, natural sciences, exact mathematical sciences, technical sciences and performing, visual and other arts.	OMU.2023_U01 OMU.2023_W01	3 3
02	The student is able to combine information from various fields of knowledge, creating a coherent vision of an interdisciplinary issue.	OMU.2023_U01 OMU.2023_W01	3 3
03	The student is able to search for necessary information in various types of sources and is able to critically select them.	OMU.2023_U01 OMU.2023_W01	3 3
04	The student is able to move freely in the area of concepts pertaining to the issues discussed within the module, presented in detail in the relevant syllabuses.	OMU.2023_U01 OMU.2023_W01	3 3
05	The student develops the need and the habit of accessing source information which goes beyond the content typical to the studied degree programme.	OMU.2023_K01 OMU.2023_U01	2 2

		OMU.2023_W01	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*
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	01, 02, 03, 04, 05	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*	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
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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Optional module with elective courses for seminar path III**
Module code	W2-IZ-S1-023
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	The module is designed to enable students to understand the complexity of phenomena and processes leading to changes in the natural environment from a global and regional perspective. A set of issues will allow to systematize knowledge of the diversity of phenomena and related consequences in the sphere of inanimate nature and their implications for the ecosystem.
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)
W01	has knowledge of the basic problems of geohazards and knows the relationship of the sciences covering geohazards with other natural sciences	W01	5
W02	has knowledge of the basic conceptual categories and terminology of geohazards and has knowledge of the development of geohazard sciences and the research methods used in them	W01	5
W03	he is able to use available sources of information on geohazards, including electronic sources, and has the ability to make correct inferences based on data from various sources	W02	5

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-IZ-S1-023_fs_1	lecture	20	course work	W01, W02, W03	a02

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

7.	**General information about the module**
Module name	**Optional module with elective courses for seminar path I**
Module code	W2-IZ-S1-017
Number of the ECTS credits	4
Language of instruction	Polish
Purpose and description of the content of education	The module allows the student to understand the phenomena and processes causing the evolution of the natural world and their location in geological time, and points out the tools for dating natural phenomena taking place in the past. It indicates the importance of the interrelationships between them and places in geological time the key points of the evolution of the natural world. The knowledge gained will allow the student to gain an overall view of the Earth as a system undergoing change and the components of this change, not in isolation from the other natural components, but as one interpenetrating and mutually stimulating phenomenon.
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)
W01	ma wiedzę w zakresie podstawowych problemów dotyczących geozagrożeń oraz zna powiązania nauk obejmujących problematykę geozagrożeń z innymi naukami przyrodniczych	W01	5
W02	in interpreting geohazard phenomena and processes, he relies on empirical foundations, fully understanding the importance of mathematical and statistical methods	W05	5
W03	has knowledge of the basic conceptual categories and terminology of geohazards and has knowledge of the development of geohazard sciences and the research methods used in them	W01 W03	5 4
W04	he is able to use available sources of information on geohazards, including electronic sources, and has the ability to make correct inferences based on data from various sources	W01 W02	3 5

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-IZ-S1-017_fs_1	lecture	90	course work	W01, W02, W03, W04	a02

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

7.	**General information about the module**
Module name	**Optional module with elective courses for seminar path II**
Module code	W2-IZ-S1-020
Number of the ECTS credits	5
Language of instruction	Polish
Purpose and description of the content of education	The module introduces the student to specific methods of forecasting geohazards and reconstructing phenomena that may be the cause of geohazards. The student is introduced to the principles of selecting methods for the study of local natural phenomena and examples of their application, including non-standard methods developed for local threats. The module provides the student with the opportunity to learn the specifics of geomorphological and geological processes, the effects of which can be potentially dangerous to human health and life, as well as to the economy. The module allows the student to understand the specificity and complexity of the causes of catastrophic phenomena with consideration of local and temporal conditions using examples from Poland, Europe and the world. As part of the module, the student pursues elective courses.
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)
W01	has knowledge of the basic problems of geohazards and knows the relationship of the sciences covering geohazards with other natural sciences	W01	5
W02	has knowledge of the basic conceptual categories and terminology of geohazards and has knowledge of the development of geohazard sciences and the research methods used in them	W01 W02	5 3
W03	understands the relationship between the achievements of sciences involving geohazards and the possibilities of their use in socio-economic life, taking into account the postulate of sustainable development	W05	5
W04	can apply appropriate methods and tools, including electronic sources, and has the ability to make correct inferences based on data from various sources	W03	5

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-IZ-S1-020_fs_1	lecture	90	course work	W01, W02, W03, W04	a02

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

7.	**General information about the module**
Module name	**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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Physical Geography Field Research**
Module code	W2-IZ-S1-157
Number of the ECTS credits	1
Language of instruction	Polish
Purpose and description of the content of education	The module concerns natural phenomena in physical geography: geomorphology, meteorology, hydrology, soil science, and biogeography, with particular emphasis on aspects related to the recognition of geohazards. The student observes and evaluates the relationship between various elements of the environment and learns to describe and prepare documentation of field research. As part of the module, the student can use basic research tools in fieldwork in physical geography research, learn the rules of using thematic maps and performing simple analyses, and use basic measuring instruments.
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)
U01	the student can use available sources of information on geohazards, including electronic sources, and has the ability to draw conclusions based on data from various sources correctly	U01	5
U02	the student conducts observations and performs simple measurements in the field of physical geography, taking into account geohazards	U11	5
W01	the student understands the basic phenomena and natural processes with a focus on geohazards	W01	3
W02	the student knows the basic techniques and research tools used in physical geography to describe the causes and effects of geohazards	W02	4

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*

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-IZ-S1-157_fs_1	field practice	36	course work	U01, U02, W01, W02	c06

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

7.	**General information about the module**
Module name	**Professional Practice**
Module code	W2-IZ-S1-354
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	Apprenticeships familiarize students with the functioning of a selected organizational unit, which may be e.g. a business entity, a government or local government public institution, a research and development unit or another organizational and legal unit that enables students to gain practical skills and experience in performing work on a specific position. Professional practice allows you to practically apply knowledge in the field of environmental hazards engineering at various workstations or participate in research or implementation works carried out by specialized institutions.
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	correctly identifies and resolves dilemmas related to the practice of the profession	K02	5
K02	he understands the need for lifelong learning, demonstrates the need to constantly update his knowledge and improve professional and personal competences	K01	4
K03	he is responsible for the safety of his own and others' work, knows how to act in emergency situations	K05	5
U01	depending on the situation, he is able to work and perform the task independently as well as cooperate and work in a group	U07	5
W01	he knows the general principles of creating and developing forms of individual entrepreneurship, using knowledge in the field of science including geohazards	W07	4

9. Methods of conducting classes

Code	Category	Name (description)
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*

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-IZ-S1-354_fs_1	internship	90	course work	K01, K02, K03, U01, W01	e05, 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?
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
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*	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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Remote sensing in geohazard analysis**
Module code	W2-IZ-S1-307
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	As part of the module, the student will acquire skills and knowledge in geohazard analysis based on remote sensing and photogrammetric data, as well as the use of geographic information systems.
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)
U01	be able to use available sources of information on geohazards, including cartographic, electronic sources, and have the ability to make correct inferences from data from different sources	U02	4
U02	applies basic research techniques and tools in geohazards science, including remote sensing and photogrammetry to identify phenomena and analyse data. Carries out research tasks or expert reports on geohazards under the guidance of a supervisor	U04	3
U03	is able - when solving engineering tasks - to take measurements, interpret the results obtained and draw conclusions using remote sensing methods and geographical information systems	U04	2
U04	is able - when formulating and solving engineering tasks in the field of geohazards - to perceive their systemic and non-technical aspects	U10	5

9. Methods of conducting classes

Code	Category	Name (description)
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-IZ-S1-307_fs_1	laboratory classes	15	course work	U01, U02, U03, U04	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*	Yes
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)*	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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Soil Science and Soil Geography**
Module code	W2-IZ-S1-165
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	The objective of the module is to provide the student with fundamental knowledge and skills in soil science. The student acquires knowledge about the soil as a component of the geographical environment. The student learns about soil-forming factors and processes, soil composition and basic properties, as well as morphological features and principles of soil classification and also acquires knowledge about the characteristics of the soil cover in Poland and soil degradation. The student learns the methodology of basic laboratory analyzes and learns to interpret soil maps.
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	students critically evaluate their knowledge, and are ready to supplement and improve the acquired knowledge and skills within soil science	K01	5
K02	students are able to work independently and in a team and are responsible for the reliability of the research results and their interpretation	K02	5
U01	students understand the literature within soil science. Can use basic theoretical knowledge and available sources of information, including electronic sources, and acquire soil data to analyze specific properties of soils and soil-forming processes, demonstrating the ability to make correct conclusions. Students use soil science terminology	U01	5
U02	students conduct observations and take simple soil measurements in the laboratory, using basic techniques and research tools within soil science	U02	5
U03	students can use soil maps and interpret them	U03	5
W01	students have basic knowledge of soil and the nature of soil science. Know the basic concepts and terminology used for the description and study of soils. Understand the basic soil-forming processes. Students know the principles of description and interpretation of a soil profile. Students know the types of soils in Poland. Students know soil degradation processes	W01	5

W02	students know the methods and tools, including techniques for obtaining environmental data, and have knowledge of basic research techniques and tools used within soil science to describe the processes and the relationships between them	W02	5
W03	in the interpretation of soil data and soil-forming processes, students rely on empirical foundations, understand the meaning and apply basic research methods	W03	5

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*
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-IZ-S1-165_fs_1	lecture	15	exam	W01, W02, W03	a01, c07
W2-IZ-S1-165_fs_2	laboratory classes	15	course work	K01, K02, U01, U02, U03, W01, W02, W03	e01

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

7.	**General information about the module**
Module name	**Spatial planning as a tool of the geohazard results limitation**
Module code	W2-IZ-S1-141
Number of the ECTS credits	5
Language of instruction	Polish
Purpose and description of the content of education	As part of the module, the student gets theoretical knowledge in the field of spatial planning at various levels (municipal, regional and national), enabling counteracting the occurrence and effects of geohazards. The student also acquires knowledge in the field of applicable legal acts and engineering procedures in the field of counteracting the effects of environmental hazards. The student acquires the skills of practical use of the acquired knowledge to analyze selected issues related to spatial planning in geohazardous areas. The student also gets acquainted with the planning documentation, e.g. study of the conditions and directions of spatial development or local spatial development plans (master plan), and also prepares selected documentation, applications, diagnostic studies and cartographic materials.
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)
U01	the student has the ability to prepare analyzes and presentations on the issues of spatial planning as a tool to counteract the effects of geohazards and using various sources of information	U02 U03 U05	4 4 3
U02	the student is able to use basic theoretical knowledge and available sources of information, including electronic sources, to obtain data in order to analyze specific processes and phenomena, demonstrating the ability to correctly infer and correctly interpret phenomena occurring in the environment (social, economic and natural)	U02 U03	4 4
U03	the student performs simple studies and documentation regarding applications or planning documents under the guidance of the teacher	U04 U05 U07	2 3 4
W01	the student knows the effects of negative spatial development of the area and the basic tools and methods of counteracting the negative impact of geohazards used in the spatial planning process	W02 W03 W04	2 4 1

W02	the student understands the relationship between knowledge in the field of natural sciences, socio-economic sciences and spatial management, and the possibilities of their use in spatial planning, taking into account the risk resulting from geohazards	W01 W05	4 3
W03	the student knows current legal acts related to spatial planning, with particular emphasis on areas covered by geohazards	W02 W03 W04	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*
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*
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*
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*
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
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
W2-IZ-S1-141_fs_1	lecture	15	exam	W01, W02, W03	a01, c07, f01
W2-IZ-S1-141_fs_2	laboratory classes	30	course work	U01, U02, U03, W02, W03	a03, a05, b07, b10, c07, d02, e01, 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*	Yes
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
a05	Preparation for classes	Production/preparation of tools, materials or documentation necessary for class participation *developing, preparing and assessing the usefulness of tools and materials (e.g. aids, scenarios, research tools, equipment, etc.) to be employed in class or as an aid when preparing for classes*	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*	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*	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	Yes

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

7.	General information about the module
Module name	**Statistical methods in geohazard analysis**
Module code	W2-IZ-S1-302
Number of the ECTS credits	1
Language of instruction	Polish
Purpose and description of the content of education	As part of the module, the student will learn statistical analysis methods (including the use of modern computer software) for dealing with geohazards issues
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)
U01	applies basic research techniques and tools in geosciences and basic statistical methods, algorithms and computer techniques to describe phenomena and analyse data	U03	4
U02	be able - when solving engineering tasks - to plan and carry out statistical calculations (including using computer software), interpret the results obtained and draw conclusions about geohazards	U01	4
U03	is able - when formulating and solving engineering tasks in the field of geohazards - to perceive their systemic and non-technical aspects	U10	5
U04	can - when solving practical tasks in environmental engineering directed at geohazards - use appropriate standards, norms and technologies	U09	4

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-IZ-S1-302_fs_1	laboratory classes	15	course work	U01, U02, U03, U04	e01

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

7.	**General information about the module**
Module name	**Sustainable Development and Geohazards**
Module code	W2-IZ-S1-014
Number of the ECTS credits	3
Language of instruction	Polish
Purpose and description of the content of education	The course aims to learn about the assumptions of sustainable development. In particular, the objectives of sustainable development and the various problems humans face in implementing them. The current role of sustainable development in counteracting the occurrence of geohazards and explaining the causes of geohazards in global, continental, regional or local terms.
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)
KS01	understands sustainable development in the context of social and climate change	K01 W04 W05	5 5 5
U01	able in a cause-effect analysis on the occurrence of geohazards - to see their causes in 'unsustainable development'	U01 U02 U03 W01 W02 W03 W04 W05	5 4 3 2 5 1 5 5
W01	knows the origins and definition of Sustainable Development. Understands the fundamental, problematic issues surrounding the idea of sustainability	K01 U08 W01	1 1 3

		W02 W03 W04 W05	3 2 5 5
W02	knows and correctly applies basic conceptual categories and terminology relating to geohazards	K01 W01 W02 W03 W04	1 5 3 1 5

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*
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*

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.*
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*
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-IZ-S1-014_fs_1	lecture	15	course work	KS01, U01, W01, W02	a01, b01, b02, b04, b07, c02, c07, d02, e09, 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?
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*	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
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*	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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Unconventional and Alternative Energy Sources**
Module code	W2-IZ-S1-218
Number of the ECTS credits	2
Language of instruction	Polish
Purpose and description of the content of education	The aim of the course is to discuss all alternative and unconventional energy sources and the pros and cons of their use. The following topics will be discussed: solar energy, wind energy, flowing water energy, sea and ocean energy, geothermal energy, energy related to the use of biomass, and bigass. Issues related to nuclear energy and its development will also be discussed. The issues related to the development of unconventional energy sources will be discussed in relation to Poland and other countries of the world.
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)
U01	the student is able to indicate the pros and cons of energy production from individual alternative and unconventional energy sources, taking into account socio-economic and natural conditions	K01 U01 U02 U03 W02	5 3 1 1 5
W01	the student knows the history of the basic concepts of non-conventional and alternative energy sources and divisions regarding energy generation sources	K01 W01 W02 W04 W05	2 2 1 1 2
W02	the student knows the specificity of energy production within the so-called unconventional energy sources, is able to explain the need to generate energy from renewable sources	K06 U03 W01	1 2 1

		W02 W05	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*
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*
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*
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*
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
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
W2-IZ-S1-218_fs_1	lecture	15	course work	U01, W01, W02	a01, a02, a03, a05, b01, b02, b04, b10, c07, d01, 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?
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*	Yes
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
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.*	Yes
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*	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	Analysis of the corrective feedback provided by the academic teacher on the results of the	Yes

	learning outcomes	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*	
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**	**Environmental Hazard Engineering**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Water Supply and Sewage Networks**
Module code	W2-IZ-S1-018
Number of the ECTS credits	1
Language of instruction	Polish
Purpose and description of the content of education	Intakes of surface, underground and infiltration waters; collection of sewage from internal installations and the area (used water and rainwater; water supply and sewage pumping stations) (types, diagrams of solutions, basic design rules, guidelines for pump selection, pump start-up, hydraulic analysis of pump system operation); water supply and sewage tanks (tasks, types, solution diagrams, capacity calculation methods, equipment, general construction guidelines for water supply and sewage networks (tasks, types, hydraulic calculations, design rules, water supply wells and galleries, channel muds, connection and branching chambers, overflows storm chambers, cascade chambers, sewage siphons, separators, outlets of channels to natural receivers - tasks, types, principle of operation, solution diagrams, basics of designing selected objects.
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)
W01	familiarize students with the construction, function and principle of operation of basic water and sewage facilities and equipment	U10 U11 W04	3 3 2
W02	has knowledge of the interaction of water supply and sewage systems	W09	4
W03	he knows the basics of designing and operating water and sewage facilities and equipment	K02 W08	2 3

9. Methods of conducting classes

Code	Category	Name (description)
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-IZ-S1-018_fs_1	laboratory classes	15	course work	W01, W02, W03	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*	Yes
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)*	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.