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.