

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		5
		U01		3
		U02		1
		U03		1
		W02		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		2
		W01		2
		W02		1
		W04		1
		W05		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		1
		U03		2
		W01		1

		W02	1
		W05	2

9. Methods of conducting classes			
Code	Category	Name (description)	
a01	Lecture methods / expository methods	Formal lecture/ course-related lecture <i>a systematic course of study involving a synthetic presentation of an academic discipline; its implementation assumes a passive reception of the information provided</i>	
a02	Lecture methods / expository methods	Monographic lecture <i>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</i>	
a03	Lecture methods / expository methods	Description <i>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</i>	
a05	Lecture methods / expository methods	Explanation/clarification <i>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</i>	
b01	Problem-solving methods	Problem-based lecture <i>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</i>	
b02	Problem-solving methods	Lecture-discussion <i>transmission of content involving interaction with the lecture audience; discussion of lecture-related issues is one of its elements or constitutes its follow-up</i>	
b04	Problem-solving methods	Activating method – discussion / debate <i>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</i>	
b10	Problem-solving methods	SWOT analysis <i>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</i>	
c07	Demonstration methods	Screen presentation <i>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</i>	
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 <i>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</i>	
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 <i>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</i>	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>.