

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

7. General information about the module	
Module name	Renewable Energy Sources
Module code	W2-GS-S1-063
Number of the ECTS credits	1
Language of instruction	Polish
Purpose and description of the content of education	Odnawialne źródła energii (OZE) to kurs dla osób, które interesują się wyzwaniami energetycznymi przyszłości. Kurs przybliży studentom poszczególne rodzaje OZE, ich możliwości oraz ograniczenia. Uczestnicy kursu zapoznają się z fizycznymi podstawami OZE, co wpływa na ich pełniejsze zrozumienie tych źródeł oraz ich stabilności, przewidywalności oraz wydajności w zależności od uwarunkowań środowiskowych. Na kursie porównamy OZE ze źródłami konwencjonalnymi takimi jak węgiel, gaz, ropa i atom, ze szczególnym uwzględnieniem roli OZE w polityce energetycznej w Polsce, wybranych krajach oraz w ujęciu globalnym. Studenci w ramach ćwiczeń opracowują zadane zagadnienia i prezentują je na zajęciach, co pozwala im poszerzyć kluczowe umiejętności i kompetencje w zakresie pozyskania, obróbki, prezentacji danych oraz efektywnego komunikowania wyników i też dotyczących OZE.
List of modules that must be completed before starting this module (if necessary)	not applicable

8. Learning outcomes of the module			
Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
W2-GS-S1-063_1	studenci mają okazję zapoznać się z podstawowymi pojęciami użytecznymi w dyskusji na temat energii, jej pochodzeniem, zapotrzebowaniem na energię w skali gospodarstwa domowego, kraju, kontynentu i planety.	1GS_K1 1GS_U4 1GS_W1 1GS_W6	1 1 1 1
W2-GS-S1-063_2	studenci poznają dostępne obecnie odnawialne źródła energii (OZE), dowiadują się również, jakie są fizyczne mechanizmy stojące za tymi źródłami przez to rozpoznają lepiej ich potencjał oraz ograniczenia.	1GS_K1 1GS_K3 1GS_U1 1GS_U4 1GS_W1 1GS_W3	1 1 1 1 1 1
W2-GS-	studenci porównują OZE ze źródłami konwencjonalnymi (np. węgiel, ropa, gaz, atom).	1GS_K1	1

S1-063_3		1GS_K3 1GS_U4 1GS_W1 1GS_W3	1 1 1 1
W2-GS-S1-063_4	studenci opracowują zagadnienia dotyczące OZE (samodzielnie i/lub w zespołach) a następnie prezentują swoje wyniki przed grupą. Studenci nabierają umiejętności i doświadczenia w gromadzeniu danych, ich obróbce, prezentacji oraz skutecznym komunikowaniu tez i wniosków swoich prac.	1GS_K1 1GS_K4 1GS_U10 1GS_U6 1GS_U7 1GS_U9	1 1 1 1 1 1

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>
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>
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>
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>
c02	Demonstration methods	Video show <i>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.</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

		<i>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</i>
d03	Programmed learning methods	Working with another teaching tool <i>e.g. using websites in any way or according to the rules set by the teacher; or making use of other subject-specific tools</i>

10. Forms of teaching

Code	Name	Number of hours	Assessment of the learning outcomes of the module	Learning outcomes of the module	Methods of conducting classes
W2-GS-S1-063_I_1	laboratory classes	20	course work	W2-GS-S1-063_1, W2-GS-S1-063_2, W2-GS-S1-063_3, W2-GS-S1-063_4	a01, a03, b01, b04, c02, c07, 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 <i>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</i>	No
a03	Preparation for classes	Developing practical skills <i>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)</i>	No
c03	Preparation for verification of learning outcomes	Implementation of an individual or group assignment necessary for course/phase/ examination completion <i>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</i>	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 <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>	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>.