

1.	Field of study	Water Management - Aquamatics
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		Basic of hydrogeology
Module code		W2-GW-AQ-S1-010
Number of the ECTS credits		5
Language of instruction		Polish
Purpose and description of the content of education		Na wykładach student poznaje definicje i pojęcia hydrogeologiczne, występowanie wód podziemnych, podstawowe prawa ruchu wód podziemnych, systemy wodonośne, procesy formujące skład chemiczny wód podziemnych, zasoby wód podziemnych, pojęcia związane z kartografią hydrogeologiczną. Efekty kształcenia w zakresie hydrogeologii realizowane w trakcie wykładów i zajęć laboratoryjnych są utożsamiane z podstawową wiedzą pozwalającą na poprawną analizę związków przyczynowo-skutkowych w hydrogeologii. Szczególne znaczenie w kształceniu z zakresu hydrogeologii ma rozpoznawanie i prawidłowe wyjaśnianie wzajemnych relacji i powiązań wód podziemnych z wodami powierzchniowymi. Zarówno wykłady jak i zajęcia laboratoryjne mają służyć nabyciu wiedzy, umiejętności i kompetencji społecznych utożsamianych ze znajomością tzw. warsztatu badań hydrogeologicznych.
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-GW-AQ-S1-010_1	Zna podstawowe metody badawcze w hydrogeologii.	GW-AQ1_U03	4	
		GW-AQ1_W01	4	
W2-GW-AQ-S1-010_2	Rozumie pojęcia związane z wodami podziemnymi.	GW-AQ1_U02	4	
		GW-AQ1_W01	4	
		GW-AQ1_W02	4	
W2-GW-AQ-S1-010_3	Zna podstawowe procesy formujące skład chemiczny wód podziemnych.	GW-AQ1_U02	3	
		GW-AQ1_W01	3	
		GW-AQ1_W02	3	
W2-GW-AQ-S1-010_4	Potrafi ocenić zasoby wód podziemnych.	GW-AQ1_U03	2	
		GW-AQ1_U04	2	

		GW-AQ1_U08	2
		GW-AQ1_W01	2
		GW-AQ1_W03	2
		GW-AQ1_W04	2
W2-GW-AQ-S1-010_5	Posiada podstawową wiedzę i umiejętności w zakresie przygotowywania map hydrogeologicznych.	GW-AQ1_U02	2
		GW-AQ1_W03	2
		GW-AQ1_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>
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>
c06	Demonstration methods	Demonstration-imitation <i>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</i>
e01	Practical methods	Laboratory exercise / experiment <i>[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</i>
e07	Practical methods	Simulation <i>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</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-GW-AQ-010_fs_1	lecture	15	exam	W2-GW-AQ-S1-010_1, W2-GW-AQ-S1-010_2, W2-GW-AQ-S1-010_3	a01
W2-GW-AQ-010_fs_2	laboratory classes	30	course work	W2-GW-AQ-S1-010_4, W2-GW-AQ-S1-010_5	a05, c06, e01, e07

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 <i>reading the literature indicated in the syllabus; reviewing, organizing, analyzing and selecting source materials to be used in class</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
c02	Preparation for verification of learning outcomes	Studying the literature used in and the materials produced in class <i>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</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
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 <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>	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>.