

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		Basics of mathematics and statistics 1
Module code		W2-GW-AQ-S1-005
Number of the ECTS credits		4
Language of instruction		Polish
Purpose and description of the content of education		The module aims to familiarize with the basic concepts and calculation methods in mathematics, and in particular to address the subject of sets, functions and their properties, matrix, differential and integral calculus and statistical methods. After completing the module, the student will be able to solve tasks in the field of higher mathematics and use the knowledge to plan research within the framework of studies. The module conveys knowledge in the field of mathematics and necessary for naturalists. Particular emphasis is placed on the selection of appropriate tools for exact description, improving the skills of analysis and interpretation of calculation results as well as making hypotheses and drawing 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)	
W2-GW-AQ-S1-005_1	Zna podstawowe definicje, wzory, metody stosowane w matematyce i statystyce.	GW-AQ1_W01	3	
W2-GW-AQ-S1-005_2	Zna podstawowe techniki i metody informatyczne i statystyczne stosowane w rozwiązywaniu problemów środowiskowych.	GW-AQ1_W08	3	
W2-GW-AQ-S1-005_3	Potrafi poprawnie przeanalizować uzyskiwane wyniki badań.	GW-AQ1_U04	4	
W2-GW-AQ-S1-005_4	Potrafi dobierać odpowiednią metodę do rozwiązania zadania.	GW-AQ1_U02 GW-AQ1_U03	4 4	
W2-GW-AQ-S1-005_5	Operuje wiedzą z podstaw analizy matematycznej i algebry oraz stosuje je do opisu procesów zachodzących w żywych organizmach.	GW-AQ1_W01 GW-AQ1_W08	3 3	
W2-GW-AQ-S1-005_6	Opracowuje dane, interpretuje i analizuje wyniki obliczeń pod kątem przyjętych modeli, stosowanych w naukach przyrodniczych.	GW-AQ1_W01 GW-AQ1_W08	3 3	

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>
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>
d02	Programmed learning methods	Working with a programmed textbook <i>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.</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_005_fs_1	lecture	15	course work	W2-GW-AQ-S1-005_1, W2-GW-AQ-S1-005_2	a01
W2-GW-AQ_005_fs_2	practical classes	30	course work	W2-GW-AQ-S1-005_3, W2-GW-AQ-S1-005_4, W2-GW-AQ-S1-005_5, W2-GW-AQ-S1-005_6	c06, d02

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 <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
a05	Preparation for classes	Production/preparation of tools, materials or documentation necessary for class participation <i>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</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

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>.