1.	**Field of study**	**Aquamatics - Interdisciplinary Management of Water Environments**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	second-cycle studies
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Blue green infrastructure**
Module code	AQ_018
Number of the ECTS credits	6
Language of instruction	English
Purpose and description of the content of education	The Blue and Green Infrastructure module aims to bring the student closer to the topic of solving the problems faced by cities in connection with climate change, i.e. periodic droughts on the one hand and torrential rains causing floods and local flooding on the other. During the lectures, the importance of urban ecosystems in the context of water management, a systemic approach to green areas and waters in the city, tools and strategies in planning BZI as well as an overview of technical solutions and examples of good practice will be presented. As part of laboratory classes, students will attempt to assess the existing systems of green areas and waters, select the right solutions depending on spatial and natural conditions, and get acquainted in detail with the technical solutions of BGI elements and design selected elements.
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)
01	Possession of advanced knowledge in the field of natural sciences and environmental engineering, regarding the importance of green systems in the city and technical solutions used in the design of BGI.	AQ2_W01	4
02	Having in-depth knowledge of the principles of water management through the prism of natural, economic, administrative, ethical and legal conditions, knowledge of strategic tools and BGI planning instruments	AQ2_W01 AQ2_W03	4 3
03	Knowledge and understanding of advanced IT techniques supporting research activities in the aspect of water and environmental sciences, being aware of the scope and limitations of their use, using programs to design BZI technical solutions	AQ2_W04 AQ2_W07	3 3
04	Independent selection of appropriate methods and tools used in planning and technical BZI solutions, selection of appropriate sources of information, ability to use large data resources, ordering and analyzing them, and formulating correct conclusions based on them.	AQ2_U02 AQ2_U04	4 2
05	Critical analysis of the functioning of the existing solutions of greenery and water systems in the context of rainwater management.	AQ2_U06	3
06	showing caution and criticism in the assessment of existing and planned BGI elements, and in the event of difficulties,	AQ2_K01	3

	the ability to organize a team of experts to solve the problem, understanding the importance of water knowledge in solving complex cognitive and practical problems related to water management in the city, in accordance with the principles of sustainable development	AQ2_K02	3

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*
b10	Problem-solving methods	SWOT analysis *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*
e08	Practical methods	Practice-as-research *also conducted as fieldwork; an activity aimed at confronting the acquired theory with practice through its practical application; students situate themselves in the reality they observe, study and transform through the prism of the theory; the method of practical classes is dominated by the application of knowledge to solving practical tasks*

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
01	lecture	15	exam	01, 02, 03	b01
02	laboratory classes	45	course work	04, 05, 06	b07, b10, e08

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*	No
c02	Preparation for verification of learning outcomes	Studying the literature used in and the materials produced in class *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*	No
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*	No

		phase/element of the verification of the learning outcomes assigned to the course	

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.