1.	**Field of study**	**Biotechnology**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2022/2023 (winter term), 2023/2024 (winter term), 2024/2025 (winter term)
4.	Level of qualifications/degree	second-cycle studies
5.	Degree profile	general academic
6.	Mode of study	full-time

Module: Chemical and biochemical analysis of water quality

Module code: 2BT_21A

1. Number of the ECTS credits: 2

2. Learning outcomes of the module

code	description	learning outcomes of the programme	level of competence (scale 1-5)
2BT_21_1	Student knows on the advanced level mathematical and statistical methods allowing to data description and analysis connected with water quality	2BT_W01_P	4
2BT_21_2	Students defines the basic concepts and processes connected with water quality analysis	2BT_W02_P 2BT_W03_P	3 3
2BT_21_3	Student explains theoretical basis of experimental methods, specifies and knows the most important techniques usage in water analysis	2BT_W04_P	5
2BT_21_4	Student uses advanced methods and techniques of experimental biology and biotechnology	2BT_U01_P	4
2BT_21_5	Student gains and chooses proper documentation connected with analysis of water quality	2BT_U02_P	4
2BT_21_6	Student presents short communication on the basis of his own results according with proper methodology in polish and english	2BT_U04_P 2BT_U05_P	3 3
2BT_21_7	Student performs without help simple physical, chemical and biological measurements and makes observation	2BT_U03_P	3
2BT_21_8	Student solves problems in the group connected with analysis of water quality	2BT_K03_P	4

3. Module description

Description	The module provides broadened knowledge about chemical and biochemical analysis of water quality. The course focuses also on biochemical processes occur in the water environment which influence on water quality. The module shows advanced methods of water quality analysis, especially enzymatic bioindicators.
Prerequisites	Basic knowledge of chemistry, biochemistry, mathematics, physic and statistic.

4. Assessment of the learning outcomes of the module			
code	**type**	**description**	**learning outcomes of the module**
2BT_21_w_1	Coursework	according to the Syllabus	2BT_21_1, 2BT_21_2, 2BT_21_3, 2BT_21_4, 2BT_21_5, 2BT_21_6, 2BT_21_7, 2BT_21_8

5. Forms of teaching						
code	**form of teaching**			**required hours of student's own work**		**assessment of the learning outcomes of the module**
	type	**description (including teaching methods)**	**number of hours**	**description**	**number of hours**	
2BT_21_fs_1	laboratory classes	Without help work in the analytical laboratory under the supervision of lecturer, performing experiments according to the instructions given to students, analysis of the results	30	Preparation to the classes using recommended literature.	20	2BT_21_w_1