1.	**Field of study**	**Biotechnology**
2.	Academic year of entry	2015/2016 (winter term)
3.	Level of qualifications/degree	second-cycle studies
4.	Degree profile	general academic
5.	Mode of study	full-time

Module: Chemical and biochemical analysis of water quality

Module code: 2BT_21

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	4
2BT_21_2	Students defines the basic concepts and processes connected with water quality analysis	2BT_W02 2BT_W07	3 3
2BT_21_3	Student explains theoretical basis of experimental methods, specifies and knows the most important techniques usage in water analysis	2BT_W03	5
2BT_21_4	Student uses advanced methods and techniques of experimental biology and biotechnology	2BT_U01	4
2BT_21_5	Student gains and chooses proper documentation connected with analysis of water quality	2BT_U06 2BT_U10	4 4
2BT_21_6	Student presents short communication on the basis of his own results according with proper methodology in polish and english	2BT_U12	3
2BT_21_7	Student performs without help simple physical, chemical and biological measurements and makes observation	2BT_U07 2BT_U09	3 3
2BT_21_8	Student solves problems in the group connected with analysis of water quality	2BT_K03 2BT_K05	4 3

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	Continuous assessment of practical skills	Evaluation of following the rules of laboratory work by a student, evaluation of planning of the experiment, the ability to perform experiments according to the protocol, analyses of the results, drawing conclusions	2BT_21_2, 2BT_21_3, 2BT_21_4, 2BT_21_5, 2BT_21_7, 2BT_21_8
2BT_21_w_2	Laboratory report	Preparation of written laboratory report presenting the results and discussion of laboratory experiments.	2BT_21_1, 2BT_21_5, 2BT_21_6

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, 2BT_21_w_2
2BT_21_fs_2	practical classes	Wycieczka do stacji hodowli roślin w celu zaznajomienia się z prowadzeniem doświadczeń polowych w programach hodowli zbóż Opracowanie i prezentacja programu hodowlanego, wykorzystującego metody biotechnologiczne, dla wybranego gatunku roślin (praca zespołowa	20	Przyswojenie wiedzy z wykładów i wizyty w stacji hodowli, lektura uzupełniająca Analiza zadanego do rozpatrzenia problemu i jego opracowanie poprzez przygotowanie prezentacji	10	2BT_21_w_2