1.	Field of study	Biology
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2021/2022 (winter term), 2022/2023 (winter term)
4.	Level of qualifications/degree	second-cycle studies
5.	Degree profile	general academic
6.	Mode of study	full-time

Module: Histochemical and immunohistochemical techniques

Module code: 2BL_65oa

1. Number of the ECTS credits: 4

2. Learning outcomes of the module

code	description	learning outcomes of the programme	level of competence (scale 1-5)
2BL_65o_1	Good knowledge concerning histochemical techniques used in plant and animal tissue analysis.	2BL_U01_P 2BL_U04_P 2BL_W01_P 2BL_W07_P	4 4 4 4
2BL_65o_2	Knowledge of the advanced techniques in tissue analysis.	2BL_U01_P 2BL_W04_P	4 4
2BL_65o_3	Classification and collection of data during carrying the histo- and immunohistochemical reactions.	2BL_U01_P 2BL_U03_P	4 3
2BL_65o_4	Use the advanced techniques in plant and animal tissue analysis.	2BL_U01_P 2BL_U03_P	4 4
2BL_65o_5	Abilities to carry out histo- and immunohistochemical staining.	2BL_U04_P 2BL_U06_P	3 3
2BL_65o_6	Handling experimental observation and data interpretation of obtained data and reactions.	2BL_U02_P 2BL_U06_P	3 3
2BL_65o_7	Present reasoned explanation of phenomena and problems, concerned tissue analysis.	2BL_K01_P 2BL_U06_P 2BL_W02_P	4 4 4

2BL_65o_8	Skills in practical use of presented histochemical techniques.	2BL_U03_P 2BL_W04_P	4 4

3. Module description	
Description	Detailed classification of histo- and immunohistological methods used in laboratories; introduction to terminology, characteristic of methods and the theoretical principles of methods including principles of fixation, dehydratation, embedding and sectioning for plant and animal tissues; skills in carrying out histo- and immunohistological reactions, recognition of analysed structures; improvement in interpretation of obtained results; student get the advanced knowledge in fluorescence and transmission electron microscopy techniques
Prerequisites	Knowledge of plant and animal histology, cell biology

4. Assessment of the learning outcomes of the module

code	type	description	learning outcomes of the module
2BL_65o_w1	credit for a grade	according to the rules set out in the syllabus	2BL_65o_1, 2BL_65o_2, 2BL_65o_3, 2BL_65o_4, 2BL_65o_5, 2BL_65o_6, 2BL_65o_7, 2BL_65o_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	
2BL_65o_fs_1	lecture	Lecture chosen problems with the use of audiovisual methods; computer presentation illustrating the issues discussed.	10	Work with the literature indicated by the teacher.	10	2BL_65o_w1
2BL_65o_fs_2	laboratory classes	Work under supervision of teacher – carrying out histochemical and immunohistochemical reactions to analyse plant and animal tissues following carefully a sequence of instruction provides by teacher; microscopic observation of specimens produced during classes (notes, drawings), discussion. Laboratory with the use of bright field and fluorescence microscopy, and transmission electron microscopy.	50	Knowledge with understanding of the topics solved during laboratory; work with the literature indicated by the teacher.	30	2BL_65o_w1