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

Code of the learning outcome of the programme	**Learning outcomes** The graduate:	Codes of the second-order PRK characteristics to which the learning outcome of the programme is related
	KNOWLEDGE	
1BT_W01	has advanced knowledge in mathematics and statistics as well as physics and chemistry, necessary for understanding the laws of nature and describing life and biotechnological processes	2018_P6S_WG
1BT_W02	has an advanced understanding of the relationships and interrelationships between physical, chemical and biological processes in nature and their application in biotechnology	2018_P6S_WG
1BT_W03	has advanced knowledge of the structure of organisms at the level of cells, tissues and organs/organs, reproduces and analyses the complex functional relationships between them and the possibility of their use in biotechnology	2018_P6S_WG
1BT_W04	describes and interprets biodiversity and presents its significance for biotechnology	2018_P6S_WG
1BT_W05	explains in an advanced way the rules of inheritance using genetic and molecular description; knows the tools of molecular biology	2018_P6S_WG
1BT_W06	knows and understands to an advanced degree the most important techniques and methods used in biotechnology	2018_P6S_WG
1BT_W07	Knows and classifies bioinformatics techniques and tools used to collect and analyse data in molecular biology and biotechnology	2018_P6S_WK
1BT_W08	presents knowledge of the products and processes used in biotechnology which have an impact on the quality of life, the development of civilisation and the environment	2018_P6S_WG
1BT_W09	understands and evaluates the importance of experimental work in biotechnology research	2018_P6S_WG
1BT_W10	is familiar with the legal and ethical basis for designing and carrying out genetic modifications on biological material and with the biotechnological use of research material	2018_P6S_WK
1BT_W11	explains the rules, methods and techniques for the use of biotechnological tools, including organisms, in environmental protection	2018_P6S_WG
1BT_W12	has knowledge of the principles of creating and developing forms of individual entrepreneurship and understands the principles of research funding; recognises and presents the principles of industrial property protection and copyright and is able to use patent information	2018_P6S_WK
1BT_W13	is familiar with the principles of health and safety in the laboratory and ergonomics	2018_P6S_WK
MOB.2023_W01	has advanced knowledge of selected scientific or scholarly theories and methods, is familiar with the issues specific to the chosen academic discipline and understands its connection with the leading discipline of the degree programme	2018_P6S_WG
MOB.2023_W02_P	understands the relationship between entrepreneurship-related issues and the leading discipline of the degree programme, exhibits an entrepreneurial mindset	2018_P6S_KO, 2018_P6S_WK
MOB.2023_W03_VP	understands the relationship between legal issues – especially those pertaining to civil rights and obligations and their implementation – and the leading discipline of the degree programme, in particular the basic concepts and provisions pertaining to the protection of industrial protection and copyright law	2018_P6S_WK
OMU.2023_W01	has advanced knowledge of selected scientific theories and methods and is familiar with the issues specific to the selected academic discipline in the context of other disciplines	2018_P6S_WG

SKILLS		
1BT_U01	selects and uses available sources of information, including electronic sources and, to an advanced degree, synthesises data from different sources and draws conclusions from them	2018_P6S_UU, 2018_P6S_UW
1BT_U02	can obtain and characterise biological material used in biotechnology research	2018_P6S_UW
1BT_U03	uses methods and techniques applied in biotechnology laboratories; applies mathematical and statistical as well as physical and computer methods to describe and analyse data, and is able to use computer software packages to the extent that they can be applied in the discipline studied and in everyday life	2018_P6S_UW
1BT_U04	independently plans and carries out in the field or laboratory physical, chemical and biological measurements related to the field of study and makes appropriate observations	2018_P6S_UW
1BT_U05	performs research tasks and expertise in the field of biotechnology under the guidance of a mentor	2018_P6S_UW
1BT_U06	demonstrates the ability to communicate in English at B2 level of the Common European Framework of Reference for Languages and to retrieve information from English-language texts	2018_P6S_UK
1BT_U07	is able to use specialist terminology in science and life sciences, uses specialist vocabulary in English for biotechnology texts, prepares presentations, scientific papers, writes simple professional texts, also in English	2018_P6S_UK
1BT_U08	when participating in a debate, seminar, discussion with a diverse range of audiences, is able to present, evaluate and discuss different opinions and positions	2018_P6S_UK
1BT_U09	demonstrates the ability to work independently and to work and communicate as part of a team	2018_P6S_UO
1BT_U10	is able to use market research to assess the demand for biotechnology-derived products	2018_P6S_UW
1BT_U11	perceives the links and interdependencies between biotechnology and other areas of biological and natural sciences and has the ability to pose and analyse problems on the basis of acquired content from the humanities, social sciences, law, information technology.	2018_P6S_UO
1BT_U12	independently plans his own development in his chosen field	2018_P6S_UU
KJ.2023_U	clearly and comprehensibly communicates with others in a foreign language at the B2 level of the Common European Framework of Reference for Languages, making use of his/her knowledge and terminology	2018_P6S_UK
MOB.2023_U01	asks questions, analyzes research problems and finds solutions to them based on the knowledge, skills and experience he/she has gained within the chosen academic discipline in conjunction with the leading discipline of the degree programme; communicates the results of his/her work in a way which is clear and understandable not only to specialists	2018_P6S_UK, 2018_P6S_UW
OMU.2023_U01	has advanced skills in asking research questions, analyzing problems or providing practical solutions to them based on the knowledge, experience and skills gained within the chosen academic discipline in the context of other disciplines	2018_P6S_UW
SOCIAL COMPETENCES		
1BT_K01	is ready to demonstrate a creative attitude in his/her professional work, is able to think and act in an entrepreneurial manner taking into account the norms of health and safety, ergonomics, intellectual property protection and observance of social norms	2018_P6S_KO
1BT_K02	understands the need for an interdisciplinary approach to solving problems, integrating knowledge from different disciplines and practising self-education to deepen acquired knowledge	2018_P6S_KR
1BT_K03	critically appraises the knowledge he possesses and understands its relevance to solving problems relevant to life sciences and biotechnology achievements	2018_P6S_KK
1BT_K04	is ready to apply the principles of ethical behaviour in his/her life and work	2018_P6S_KR
1BT_K05	demonstrates the need to keep knowledge of biotechnology up to date, understands the need to communicate new developments in biotechnology to the public and can communicate this information in an understandable way	2018_P6S_KK, 2018_P6S_KO
MOB.2023_K01	is ready to meet social obligations, co-organize activities for the benefit of the community and is open to scientific solutions to cognitive and practical problems	2018_P6S_KK, 2018_P6S_KO
OMU.2023_K01	acknowledges and makes use of knowledge from different disciplines and is ready to change opinion in the light of scientifically proven arguments	2018_P6S_KK