Programme: BIOTECHNOLOGY
Level of studies: 2nd degree studies
Polish Qualifications Framework PRK level: levels 7
Programme profile: general-academic profile
Field of science/arts: fileld of exact sciences and natural sciences
Discipline/Disciplines i: biological sciences - leading discipline, theological sciences, sociological sciences, learning about management and quality

Learning outcomes for general university courses (foreign language classes, physical education, entrepreneurship, university mission courses) are specified in the relevant resolutions of the Senate

Symbol of the programme learning outcome	**Programme learning outcomes**	Reference to universal first stage descriptors – PRK levels 6-8[ii]	Reference to second stage descriptors - PRK levels 6-8[iii]
	Knowledge: Graduate knows and understands	**Descriptor symbol**	**Descriptor symbol**
K_W01	knows the specific terminology used in biotechnology, understands and is able to define complex phenomena and processes occurring in living organisms	P7U_W1	P7S_WG1
K_W02	has advanced knowledge of biochemistry, microbiology and biology necessary for practical use in biotechnological processes used in various branches of industry	P7U_W1	P7S_WK2
K_W03	knows biotechnology methods used in environmental protection	P7U_W1; P7U_W2	P7S_WG2; P7S_WG1
K_W04	has deepen knowledge in terms of statistics giving the possibility to explain and interprete natural phenomena especially relevant for biotechnology as well as has knowledge of specialist computer tools	P7U_W1	P7S_WG1
K_W05	has knowledge of the principles of planning research using biotechnological research techniques and tools	P7U_W1	P7S_WG1; P7S_WG2
K_W06	has deepen knowledge of the benefits and risks associated with the use of GMOs	P7U_W1; P7U_W2	P7S_WG1; P7S_WG2; P7S_WK1; P7S_WK2
K_W07	knows the fundamental principles o H&S and ergonomics	P7U_W2	P7S_WK2

K_W08	has knowledge on systemic solutions of quality assurance at the stage of development, production and quality control of biotechnological product	P7U_W1; P7U_W2	P7S_WK2; P7S_WK3
K_W09	has knowledge of forms and procedures of the protection of intellectual and industrial property in biotechnology, knows the legal and ethical conditioning for biotechnology	P7U_W1; P7U_W2	P7S_WK2; P7S_WK3
K_W10	knows the ways of obtaining the National and European research funds and application projects in the field of biotechnology	P7U_W2	P7S_WK2; P7S_WK3
K_W11	knows the general rules of the creation, operation and development of individual entrepreneurship in range of biotechnology	P7U_W2	P7S_WK2; P7S_WK3
	Skills: a graduate can	**Descriptor symbol**	**Descriptor symbol**
K_U01	applies advanced techniques and research tools in the life sciences, particularly in biotechnology	P7U_U1	P7S_UW1; P7S_UW3
K_U02	proficiently uses literaturę in the field of natural sciences in the language as courses are provided and another modern language, shows knowledge in specialised vocabulary in the field of biotechnology, uses modern foreign language at level B2+	P7U_U1; P7U_U3	P7S_UW1; P7S_UK1; P7S_UK3
K_U03	is able to critically select the available information, including those from the electronic sources and based on them to formulate reasonable judgments	P7U_U1	P7S_UW3; P7S_UW1
K_U04	uses statistic methods to interprete natural processes and for analysis and verification of experimental results	P7U_U1	P7S_UW1; P7S_UW3
K_U05	displays the ability to prepare oral presentations and communicate with diverse audiences using various media, initiates and conducts a debate on specialised topics	P7U_U3	P7S_UW1; P7S_UK1; P7S_UK2
K_U06	on the basis of his own research he has the ability to write a work both in the language in which classes are conducted and other modern language	P7U_U1; P7U_U3	P7S_UW1; P7S_UW3; P7S_UK1; P7S_UK3
K_U07	can design and carry out the experiment or expertise under the guidance of tutor	P7U_U1	P7S_UW1; P7S_UW3
K_U08	demonstrates the ability to write the examination procedure and specifying applicable documents	P7U_U1	P7S_UW1; P7S_UW3; P7S_UK1; P7S_UO2
K_U09	applies in practice the principles of work in the aseptic conditions	P7U_U1	P7S_UW1
K_U10	applies intellectual property protection procedures and is able to use the resources of patent information	P7U_U1	P7S_UW1
K_U11	can indicate the branches of economy in which the knowledge and/or skills acquired during his studies can be utilised	P7U_U1; P7U_U2	P7S_UW1; P7S_UU1
K_U12	can evaluate the environmental threats related with applied technology	P7U_U1	P7S_UW1
K_U13	analyzes the biotechnology market in range of products and services	P7U_U1	P7S_UW1

K_U14	collects and interprets experimental data and on that basis formulates appropriate conclusions	P7U_U1	P7S_UW1
K_U15	shows responsibility for the evaluation of threats arising from applied by himself research techniques and the creation of conditions for the safely work in the laboratory	P7U_U1	P7S_UW1; P7S_UO1; P7S_UO2
K_U16	regularly updates the knowledge in natural sciences and knows its practical application, understands the need to follow regularly the scientific literature as well as to familiarize himfelf with scientific journals to deepen his knowledge	P7U_U2	P7S_UU1
K_U17	has deepened awareness of level of his knowledge and skills, understands the need for continuous personal and professional development and is open to modern technologies used in biotechnology and guides others in this regard	P7U_U2	P7S_UU1
K_U18	when planning a scientific experiment he/she can properly determine the priorities for the implementation of the task, can interact and work in a team undertaking different roles in it	P7U_U1; P7U_U2	P7S_UO1; P7S_UO2
	Social competence: a graduate is ready to	**Descriptor symbol**	**Descriptor symbol**
K_K01	is aware of the meaning, value, and need to analyse the environment	P7U_K1	P7S_KK1; P7S_KO1; P7S_KO2; P7S_KR1
K_K02	understands the benefits and risks of the biotechnological products use	P7U_K1; P7U_K2	P7S_KO1; P7S_KO2
K_K03	is taking care on entrusted laboratory equipment, is able to gauge danger resulting from applied research methods	P7U_K1; P7U_K3	P7S_KK2; P7S_KO3; P7S_KR1
K_K04	correctly identifies and resolves dilemmas associated with the profession and is aware of the need for ethical conduct during planning and carrying out research experiments	P7U_K1; P7U_K2	P7S_KK1; P7S_KO1; P7S_KR1
K_K05	acts in accordance with the principles of occupational health and safety	P7U_K1; P7U_K3	P7S_KK2; P7S_KR1
K_K06	is ready to think and act in an entrepreneurial manner on the market of biotechnology products and services	P7U_K2	P7S_KO3

[i] In the case of programmes assigned to more than one discipline a leading discipline has to be specified together with the percentage share of the ECTS points assigned to each discipline in the total number of the ECTS points necessary to complete the programme. A leading discipline hat to account for more than 50% of ECTS points.

[ii] Universal first stage descriptors for PRK levels 6-8 – Act of 22 December 2015 on the Integrated Qualifications System (Journal of Law of 2016, item 64).

[iii] Second stage descriptors for PRK levels 6-8 typical for qualifications awarded by higher education institutions – Regulation of MNiSW of 14 November 2018 r. - part I.

Uniwersytecka Komisja ds. Kształcenia
pozytywnie zaopiniowała
dnia 2019 -05- 23

PROREKTOR
Katolickiego Uniwersytetu Lubelskiego
Jana Pawła II
dr hab. Iwona Niewiadomska, prof. KUL

Senat KUL zatwierdził
dnia 2019 -05- 30