

Field of study: Doctoral studies			
Level of study: Third cycle			
Area(s) of education with determination of the percentage share of outcomes in each of the following areas: Polish Qualifications Framework (PQF) level: 8			
Symbols of major outcomes	MAJOR LEARNING OUTCOMES ⁱ	Reference to	
		PQF first-level generic descriptor	PQF second-level descriptor - general
1	2	3	4
	KNOWLEDGE: THE GRADUATE KNOWS AND UNDERSTANDS	Code of description component	Code of description component
K_W01	Main development trends in scientific disciplines important for the doctoral degree programme	P8U_W	P8S_WG
K_W02	Global output in the field of chemical sciences that allows selected issues to be analysed as well as research problems to be formulated and solved	P8U_W	P8S_WG
K_W03	The theoretical foundations as well as general and selected issues in the specialization in which the doctoral thesis is written	P8U_W	P8S_WG
K_W04	Scientific research methodology relevant to chemical sciences, including methods and techniques characteristic of the specific specialization	P8U_W	P8S_WG
K_W05	The interdisciplinary approach that allows chemical sciences to be integrated with other branches of knowledge	P8U_W	P8S_WG
K_W06	Methods and techniques for conducting teaching classes	P8U_W	P8S_WG
K_W07	Methods for evaluating scientific publications, research projects and studies as well as the principles of organizing and financing scientific research	P8U_W	P8S_WG
K_W08	Legal, economic, and social implications related to research activities	P8U_W	P8S_WK
K_W09	The system of ethical standards applicable in research and teaching work in higher education	P8U_W	P8S_WK
K_W10	Fundamental dilemmas of modern civilisation	P8U_W	P8S_WK
	SKILLS: THE GRADUATE CAN	Code of description component	Code of description component
K_U01	Perform analyses and syntheses of scientific output in order to identify and solve research problems in chemical and related sciences	P8U_U	P8S_UW
K_U02	Define the purpose and object of research, formulate the research hypothesis within the specialization in which the doctoral thesis is written	P8U_U	P8S_UW
K_U03	Independently search for information in literature, also in foreign literature, and based on that formulate issues that serve to further deepen his/her knowledge	P8U_U	P8S_UW
K_U04	Plan and conduct scientific research aimed at solving scientific problems associated with both the selected specialization and related specializations as well as verify research results and formulate conclusions from experiments and calculations conducted	P8U_U	P8S_UW
K_U05	Integrate the knowledge acquired within his/her specialization with the knowledge from other, not only related disciplines	P8U_U	P8S_UW
K_U06	Transfer research results to the economic and social sphere	P8U_U	P8S_UW
K_U07	Disseminate research results in oral and written form, prepare oral communications in a native and foreign language as well as scientific papers	P8U_U	P8S_UK

K_U08	Use a foreign language at a level that enables participation in the international scientific and professional community	P8U_U	P8S_UK
K_U09	Initiate a debate and participate in scientific discourse	P8U_U	P8S_UK
K_U10	Plan and implement individual and team research or creative projects, also within the international community	P8U_U	P8S_UO
K_U11	Undertake intellectual development activities, including independent planning and organisation of knowledge acquisition, and expand his/her competencies	P8U_U	P8U_UU
K_U12	Plan teaching classes, workshop, and training within the field represented by the graduate and conduct them with first- and second-degree students	P8U_U	P8S_UU
K_U13	Use modern methods and techniques for conducting teaching classes	P8U_U	P8S_UU
SOCIAL COMPETENCIES: THE GRADUATE IS READY TO		Code of description component	Code of description component
K_K01	Use the knowledge in chemical sciences and related disciplines to identify, formulate, and solve research problems as well as to perform research tasks	P8U_K	P8S_KK
K_K02	Perform research tasks and develop research methods, techniques, and tools in order to solve research tasks that have been set	P8U_K	P8S_KK
K_K03	Conduct team research within the selected specialization	P8U_K	P8S_KK
K_K04	Conduct scientific research independently or in a team under research projects, including international ones	P8U_K	P8S_KK
K_K05	Enhance professional and personal competencies that allow independent scientific activities to be carried out	P8U_K	P8S_KK
K_K06	Fulfil social obligations and initiate actions for the public good	P8U_K	P8S_KO
K_K07	Think and act in an entrepreneurial way, create new ideas as well as seek innovative solutions and undertake challenges	P8U_K	P8S_KO
K_K08	Act ethically at each stage of scientific development	P8U_K	P8S_KR
K_K09	Respect the principles of public ownership of scientific research results, including intellectual property protection rules	P8U_K	P8S_KR

¹ The description of the intended learning outcomes for the relevant field of study includes:

- 1) all first-level generic descriptors defined in the Act of 22 December 2015 on the *Integrated Qualifications System (IQS)* (*Dz.U. (Journal of Laws)* of 2016, item 64 and 1010) appropriate for a specific level of the Polish Qualifications Framework;
- 2) all second-level (general) descriptors defined in the Regulation of the Minister of Science and Higher Education of 26 September 2016 *on second-level descriptors of the Polish Qualifications Framework typical for qualifications obtained in higher education after obtaining a qualification at level 4 - level 6- 8 (Part I)*;

Note: Annex No. 1 to the Resolution 307.7aa/2017 of the Council of the Faculty of Chemistry at the Maria Skłodowska-Curie University in Lublin, dated 22 May 2017.