

Field of study: Chemistry				
Level of study: First cycle				
Area(s) of education with determination of the percentage share of outcomes in each of the following areas: exact sciences				
Profile: General academic				
Polish Qualifications Framework (PQF) level: 6				
Symbols of major outcomes	MAJOR LEARNING OUTCOMES ⁱ	Reference to		
		PQF first-level generic descriptor	PQF second-level descriptor - general	PQF second-level descriptor for the area of exact sciences
1	2	3	4	5
	KNOWLEDGE: THE GRADUATE KNOWS AND UNDERSTANDS	Code of description component	Code of description component	Code of description component
K_W01	Selected issues in mathematics that allow the graduate to use mathematical methods in chemistry, understands the importance of mathematics in solving problems related to his/her degree specialization	P6U_W	P6S_WG	P6S_WG
K_W02	Fundamental dilemmas of modern civilisation	P6U_W	P6S_WG	P6S_WG
K_W03	Selected issues in physics that allow the graduate to correctly interpret physical phenomena and processes that occur and to solve problems in this area	P6U_W	P6S_WG	P6S_WG
K_W04	Selected issues in biological and natural sciences that allow the graduate to describe and interpret phenomena and processes that occur in animate nature	P6U_W	P6S_WG	P6S_WG
K_W05	Selected issues within his/her degree specialization, has expanded knowledge of selected branches of chemistry that allows the graduate to use proper terminology and nomenclature as well as to describe phenomena typical of the specific specialization	P6U_W	P6S_WG	P6S_WG
K_W06	Within his/her degree specialization, issues related to synthesis, purification, analysis, investigation of properties, determination of the structure, and methods of modification of selected chemical compounds and materials	P6U_W	P6S_WG	P6S_WG
K_W07	Principles of basic research techniques and tools relevant for chemical sciences, in particular principles and procedures typical of his/her degree specialization	P6U_W	P6S_WG	P6S_WG
K_W08	The fundamentals of design and operation of scientific instruments typical of the selected specialization	P6U_W	P6S_WG	P6S_WG
K_W09	The fundamentals of computational methods and software	P6U_W	P6S_WG	P6S_WG
K_W10	Occupational safety and health rules and rules for rational use of chemicals as well as complies with procedures in this respect	P6U_W	P6S_WG	P6S_WG
K_W11	Basic economic, legal, and ethical implications related to scientific, teaching, and implementation activities	P6U_W	P6S_WK	P6S_WK
K_W12	Basic terms and rules related to industrial property and copyright protection as well as can use patent information resources	P6U_W	P6S_WK	P6S_WK
	SKILLS: THE GRADUATE CAN	Code of description component	Code of description component	Code of description component
K_U01	Use the acquired knowledge to solve different problems typical of his/her degree specialization	P6U_U	PS6-UW	PS6-UW
K_U02	Use advanced information and communication techniques in acquiring knowledge typical of his/her degree specialization	P6U_U	PS6-UW	PS6-UW

K_U03	Perform basic operations in a chemical laboratory, both working independently and working in a group, from proper planning through the performance of individual stages to interpretation of obtained results	P6U_U	PS6-UW	PS6-UW
K_U04	Link the knowledge of basic chemical subjects with the knowledge of subjects typical of the specific specialization	P6U_U	PS6-UW	PS6-UW
K_U05	Communicate with peers and justify his/her position in a debate	P6U_U	PS6-UK	PS6-UK
K_U06	Use a foreign language at B2 level of the Common European Framework of Reference for Languages	P6U_U	PS6-UK	PS6-UK
K_U07	Plan and organize lifelong learning	P6U_U	PS6-UO	PS6-UO
K_U08	Plan and implement the process of self-education	P6U_U	PS6-UU	PS6-UU
K_U09	Independently plan and organise work and team work	P6U_U	PS6-UO	PS6-UO
SOCIAL COMPETENCIES: THE GRADUATE IS READY TO		Code of description component	Code of description component	Code of description component
K_K01	Assess his/her knowledge and understands the need to continue learning	P6U-K	P6S_KK	P6S_KK
K_K02	Make independent decisions and assess his/her actions and his/her group's actions as well as assume responsibilities for the consequences of such actions	P6U-K	P6S_KK	P6S_KK
K_K03	Recognise the importance of knowledge in solving cognitive and practical issues	P6U-K	P6S_KK	P6S_KK
K_K04	Fulfil social obligations and initiate actions for the public good	P6U-K	P6S_KO	P6S_KO
K_K05	Think and act in an entrepreneurial way	P6U-K	P6S_KO	P6S_KO
K_K06	Exercise care for the output of the profession of chemist and act ethically in all areas associated with the practice of this profession	P6U-K	P6S_KR	P6S_KR

¹ The description of the intended learning outcomes for the relevant field of study, level and profile of education 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)*;
- 3) selected learning outcomes relevant to the area or areas of education to which the field of study for a qualification at a given level of the Polish Qualifications Framework has been assigned, which are contained 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 II - appropriate for a given area/areas of education, level, and profile)*.