

Study programme

Part A) of the study programme *

Learning outcomes

Faculty offering the field of study:	Faculty of Chemistry
Field of study:	Cosmetic Chemistry
Level of study:	Second-cycle studies
Level of the Polish Qualification Framework:	Level 7
Profile:	General academic
Professional degree awarded to the graduate:	Magister
Allocation of the field of study within academic or artistic discipline(s), to which learning outcomes for a given field of study refer:	Disciplines: Chemical Sciences (100%) Major discipline: Chemical Sciences
Symbol	Upon completion the graduate achieves the learning outcomes specified below:
KNOWLEDGE	
K_W01	The graduate has extended knowledge of fundamental branches of chemistry, its development and significance for the development of science and natural sciences as well as for the knowledge of the world and human development.
K_W02	The graduate has in-depth knowledge of cosmetic chemistry or household chemicals.
K_W03	The graduate has knowledge of synthesis and properties of organic and inorganic compounds, biologically active compounds and their identification.
K_W04	The graduate has theoretical and practical knowledge of physico-chemistry of colloids.
K_W05	The graduate knows relations between a chemical compound and a technological process resulting in generating this compound, together with the product quality control and waste management.
K_W06	The graduate knows terms and concepts allowing to determine molecular symmetry and the crystallographic system.
K_W07	The graduate knows the principles of proper experiment planning and verification of results' reliability. The graduate has knowledge of statistical methods necessary to analyse experimental data.
K_W08	The graduate knows theoretical bases for the operation of chemical research and industrial equipment.
K_W09	The graduate knows the structure of the skin and skin appendages, and skin treatment regime.
K_W10	The graduate knows the structure, terminology, properties, metabolism and structure design of active compounds.
K_W11	The graduate has knowledge of the basics of biotechnology of enzymes and cosmetics.

K_W12	The graduate knows synthetic and natural UV filters and photosensitive compounds.
K_W13	The graduate knows and understands theoretical grounds of various analytical methods and their application in interpreting measurement results.
K_W14	The graduate knows occupational health and safety regulations to the extent allowing unassisted work on research or measurement.
K_W15	The graduate knows basic groups of active agents used in special-purpose cosmetics, their structure, metabolism as well as synthesis and measurement methods.
K_W16	The graduates is familiar with possibilities and opportunities provided by the application of computational chemistry and databases to support and interpret experiments.
K_W17	The graduate knows the basics of marketing and promotion of cosmetics.
SKILLS	
K_U01	The graduate is able to use extended knowledge of fundamental branches of chemistry and to use it creatively in cosmetic chemistry or household chemicals.
K_U02	The graduate uses knowledge of chemistry to evaluate the possibilities of completing a technological process, including the selection of raw materials, production monitoring and waste management.
K_U03	The graduate is able to select conditions for the synthesis and transformation of a natural compound, to select methods of its isolation from a natural source, to analyse it and assess its quality.
K_U04	The graduate is able to work on Polish and international standards in order to measure selected physical and chemical properties of chemical substances.
K_U05	The graduate is able to seek and find information in scientific journals and popular science magazines as well as chemical databases in Polish and English. The graduate formulates research problems in chemistry and seeks solutions to them. The graduate presents the results of their work in the form of written reports in Polish and in a foreign language, and as a paper prepared without any assistance.
K_U06	The graduate is able to recognise the symmetry of molecules, crystal structures, and is able to use experimental techniques to identify substances and determine crystal structure parameters.
K_U07	The graduate is able to plan and carry out an experiment and to critically analyse results. The graduate is able to use an exemplary software package for statistical experiment analysis.
K_U08	The graduate is able to plan, find in the field literature, anticipate potential trends, carry out and verify a method of synthesis, composition testing and properties of a new chemical compound.
K_U09	The graduate is able to use a selected set of analytical methods, to critically evaluate analytical results and to discuss measurement errors.
K_U10	The graduate is able to explain properties of an active substance on the basis of its structure and active mechanism, to classify it appropriately and to plan modification options.
K_U11	The graduate uses computational chemistry programs and databases to support and interpret experiments.

K_U12	The graduate is able to identify environmental threats and problems resulting from ill-planned and wrongly carried out chemical processes and suggests alternative solutions compliant with rules of green chemistry.
K_U13	The graduate is able to develop a preliminary marketing plan and promotion plan for a product to be launched onto the market and to carry out a company's SWOT analysis.
SOCIAL COMPETENCES	
K_K01	The graduate knows the limitations of their knowledge and understands the need for life-long learning. The graduate is able to undertake actions on their own to expand and broaden their knowledge of chemistry.
K_K02	The graduate can cooperate in a team (assuming various roles) and to creatively solve problems pertaining to research and chemical synthesis.
K_K03	The graduate is aware of the possibilities of practical application and significance of chemical compounds and new materials for economy as well as of potential threats related to their usage. The graduate is able to identify and solve related dilemmas.
K_K04	The graduate knows legal, business, environmental and social aspects related to the production of chemical substances, use of bioenergy as well as industrial and municipal waste management. The graduate is aware of the responsibility for research and experiments undertaken.
K_K05	The graduate is aware of the significance of professionalism, of appreciating intellectual honesty and observing professional ethics, both in their own actions and the actions of other persons.
K_K06	The graduate is able to formulate and present opinions on fundamental chemical issues in cosmetic chemistry or household chemicals and the advances in these fields.