

Subject card

Subject name and code	Cosmetics chemistry, PG_00081943						
Field of study	Chemistry						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2027/2028		
Education level	Bachelor's studies		Subject group		Obligatory subject group in the field of study Optional subject group Subject group related to scientific research in the field of study		
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	2		Language of instruction		Polish		
Semester of study	4		ECTS credits		2.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Faculty of Chemistry -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Beata Grobelna				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	0.0	0.0	30
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	30		0.0		0.0	30
Subject objectives	- familiarizing students with cosmetic terminology and nomenclature. - familiarizing students with the properties of raw materials for the production of cosmetics. - developing the ability to use chemical knowledge to assess the possibility of producing selected cosmetics on an industrial scale and selecting optimal raw materials to obtain a specific product						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[CHEML3_U01] Identifies, analyses and solves problems in the field of broadly understood chemistry on the basis of the acquired knowledge.		makes her own color cosmetics (lipsticks, mascaras, powder, roses), for washing the body, hair and oral care,		[SU5] implementation of a problem task		
	[CHEML3_K01] Identifies the level of her/his own knowledge and skills and the need for continuous learning and personal development.		maintains an environmentally friendly attitude during production cosmetics and demonstrates the idea of mutual relations between man and the environment,		[SK1] oral statement/conversation/discussion		
	[CHEML3_K08] Formulates opinions in the field of science with caution and criticism in their expression.		takes care when handling raw materials for production and analysis cosmetic products,		[SK1] oral statement/conversation/discussion		
	[CHEML3_W05] Has basic knowledge of the chemical specialisation studied.		recognizes and compares the most important properties of ingredients in cosmetic products		[SW4] test/exam - oral or written		

Subject contents	Emulsion structure, properties, stages of emulsion formation, stability and instability of the emulsion system. Natural and synthetic emulsifiers, selection and operation of emulsifier, HLB emulsifier. Cosmetic emulsions: chemical characterization of raw materials, INCI nomenclature, formulation. Active ingredients in cosmetics: vitamins, liposomes, proteins, peptides, lipids, ceramides, substances of origin plant. UV filters (physical and chemical). Antimicrobial compounds (preservatives, deodorants, antiperspirants). Antioxidants: characteristics of compounds, action of antioxidants in cosmetic products. Fragrance compounds: natural and synthetic, isolation, formulation. Surface-active compounds (soaps, detergents, shampoos), their characteristics and biodegradation. Chemistry of color cosmetics: (hair dyes, blushes, powders, mascaras, lipsticks), characteristics of basic raw materials and production stages. Means used in oral hygiene (toothpastes, mouthwashes, powders and bleaches). Classification of all discussed article components cosmetics was based on functional groups or chemical systems present in the structure of the connections.		
Prerequisites and co-requisites	A. Formal requirements completed general and inorganic chemistry course. B. Entry requirements identifies and recognizes basic organic and inorganic compounds, applies basic formulas of stoichiometry and concentration of solutions to chemical calculations, independently performs simple chemical experiments		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Test - open questions	51.0%	100.0%
Recommended reading	Basic literature	1. Zarys Chemii Kosmetycznej Wiesław Malinka 2. Zarys Chemii i Technologii Kosmetyków Janina Marcinkiewicz-Salmonowiczowa 3. Chemia piękna Marcin Molski 4. Technologia kosmetyków Władysław Brud, Ryszard Glinka 5. Receptura kosmetyczna Ryszard Glinka 6. "Chemia kosmetyczna" Alina Sionkowska	
	Supplementary literature	Kosmetologia i farmakologia skóry M.C.Martin	
	eResources addresses		
Example issues/ example questions/ tasks being completed	1. List the ingredients of bath salts. 2. Design a tonic for oily skin. 3. How do UV (physical) filters work? Name 2 compounds that are UV filters.		
Work placement	Not applicable		

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