



Subject card

Subject name and code	SCIENTIFIC VALIDATION OF COSMETICS, PG_00064320						
Field of study	Chemical Technology						
Date of commencement of studies	February 2027		Academic year of realisation of subject		2026/2027		
Education level	second-cycle studies		Subject group		Optional subject group Specialty subject group Subject group related to scientific research in the field of study		
Mode of study	Full-time studies		Mode of delivery		blended-learning		
Year of study	1		Language of instruction		Polish		
Semester of study	1		ECTS credits		2.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Biotechnology and Microbiology -> Faculty of Chemistry -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Patrycja Szumała				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	0.0	15.0	30
	E-learning hours included: 15.0						
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		5.0		15.0	50
Subject objectives	The aim of the course is to introduce students to scientific research that verifies the effect or lack of effect of selected cosmetic ingredients and products, their production and the legal requirements that are imposed on such ingredients and products.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_K01] critically evaluates the content of cognitive and practical problems		understands the social and economic aspects of using cosmetics and demonstrates responsibility in evaluating and verifying information about them.		[SK5] Assessment of ability to solve problems that arise in practice		
	[K7_U06] applies computer, statistical and specialised database methods to solve scientific and technological problems in technology and related fields		is able to find information from scientific databases confirming the effectiveness or lack of effectiveness of cosmetic ingredients.		[SU2] Assessment of ability to analyse information		
	[K7_W04] recognises scientific, technological, organisational and economic opportunities and constraints in technology and related fields		has the knowledge to explain the mechanisms of action of cosmetics and knows the methods used to evaluate their effectiveness.		[SW3] Assessment of knowledge contained in written work and projects		
Subject contents	Course content – lecture						
	Issues related to the structure of the skin, which affects the penetration of cosmetic ingredients into the skin; controversial ingredients (e.g. preservatives, dyes, UV filters, surfactants). Raising awareness and scientific verification of the actual significance of ingredients with the prefix "bio" or "organic", etc., in cosmetics, their actual origin and effect on the human body. Legal regulations inhibiting/limiting the possibilities of using selected ingredients.						
	Course content – seminar						
	Presentations aimed at verifying, based on scientific data, many commonly repeated claims about the effects and composition of cosmetics, e.g. the irritating effects of surfactants, contamination with microplastics or heavy metals, the possibility of using nanoparticles, anti-aging effects, etc.						
Prerequisites and co-requisites	Basic knowledge of chemistry and biology.						

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Seminar - presentation	100.0%	40.0%
	Lectures - written test	60.0%	60.0%
Recommended reading	Basic literature	Martini C., Kosmetologia i farmakologia skóry, Wydawnictwo Lekarskie PZWL, Warszawa, 2007 Barel A., Paye M., Maibach H., Handbook of Cosmetic Science and Technology, wyd. III, Londyn, Informa Health Care, 2009 and other cosmetic monographs	
	Supplementary literature	Meryem Uckaya, Fatih Uckaya, Nazan Demir, Yasar Demir; Evaluation of the efficiency and safety in cosmetic products, International Journal of Pharmaceutics 499 (2016) 295300. Huang, Catherine K, and Timothy A Miller. The truth about over-the-counter topical anti-aging products: a comprehensive review. Aesthetic surgery journal vol. 27,4 (2007): 402-12 and other scientific publications about cosmetic ingredients	
	eResources addresses		
	Example issues/ example questions/ tasks being completed	Present scientific data on the degree of collagen penetration into the skin.	
Practical activities within the subject	Not applicable		

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