University of Gdańsk

Subject card

Subject name and code	Phytocosmetics, PG_00183828		
Field of study	Fitokosmetyki (Ćw. laboratoryjne)		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
Education level	Master'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	1	Language of instruction	Polish
Semester of study	2	ECTS credits	1.0
Learning profile	academic	Assessment form	credit
Conducting unit	Laboratory of Structural Research of Biopolymers -> Department of Organic Chemistry -> Faculty of Chemistry -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. Emilia Sikorska	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	0.0	20.0	0.0	0.0	20

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	20	1.0	4.0	25

Subject objectives

Learning Objectives:

- To learn methods for obtaining active ingredients of plant origin (essential oils, hydrolates, extracts, and oils).
- To master the principles of operating distillation, extraction, and pressing equipment.
- To acquire skills in formulating cosmetics based on natural plant ingredients.
- To assess the quality and stability of the obtained cosmetic products.
- To develop teamwork skills and the ability to independently prepare laboratory documentation.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[CHEMMU2_K01] Knows the limitations of her/his own knowledge; understands the need for further education and can inspire other people to do so.	The student is aware of the limitations of their own knowledge and is able to consult professional literature when interpreting results.	[SK5] realizacja zadania problemowego [SK8] obserwacja samodzielnej lub zespołowej pracy studenta
[CHEMMU2_U02] Critically assesses the results of conducted, performed observations and theoretical calculations and discusses errors.	The student critically evaluates the results of conducted experiments, is able to identify sources of error, and determines the impact of experimental parameters on the final outcome.	[SU1] wypowiedź ustna/rozmowa/ dyskusja [SU3] opracowanie tekstowe/ praca pisemna
[CHEMMU2_W10] Uses knowledge of the principles of operation of the basic scientific and research apparatus used in chemistry.	The student understands the principles of operation and the proper use of basic laboratory equipment employed for the extraction and analysis of plant raw materials.	[SW5] realizacja zadania problemowego
[CHEMMU2_W12] Knows the principles of occupational health and safety to the extent that allows independent work on a research and/or measurement position.	The student is familiar with health and safety regulations applicable when working with organic solvents and plant materials, and is able to select appropriate personal protective equipment and follow material safety data sheets (MSDS).	[SW5] realizacja zadania problemowego
[CHEMMU2_K02] Is able to undertake a variety of roles in the team, including supervisory ones.	The student works effectively in a team, sharing responsibilities and ensuring the safety of colleagues.	[SK5] realizacja zadania problemowego [SK6] demonstracja umiejętności praktycznych [SK8] obserwacja samodzielnej lub zespołowej pracy studenta
[CHEMMU2_U04] Applies acquired knowledge of chemistry and related scientific disciplines.	The student applies chemical and biochemical knowledge to design the process of obtaining plant ingredients and developing simple phytocosmetic formulations.	[SU1] wypowiedź ustna/rozmowa/ dyskusja [SU3] opracowanie tekstowe/ praca pisemna [SU5] realizacja zadania problemowego [SU6] demonstracja umiejętności praktycznych [SU8] obserwacja samodzielnej lub zespołowej pracy studenta
[CHEMMU2_K06] Undertakes research tasks consciously and responsibly, understanding the social aspects of the practical application of the acquired knowledge and skills and the responsibility related to it.	The student performs laboratory experiments responsibly, adhering to research ethics and minimizing chemical waste in accordance with the principles of sustainable development.	[SK5] realizacja zadania problemowego [SK6] demonstracja umiejętności praktycznych [SK8] obserwacja samodzielnej lub zespołowej pracy studenta

Subject contents

Extraction of essential oils and hydrolates from aromatic plants (e.g., mint, rosemary, thyme, orange peel, and lemon peel) using steam distillation. Extraction of active compounds from plant materials using liquid-phase solvents. Obtaining oils from plant materials (e.g., avocado, grape seed, flax seed) using pressing or solvent extraction methods.Use of the extracted plant ingredients in cosmetic formulations, such as: natural plant-based soap produced through saponification of plant fats, facial toner formulated with plant hydrolates and extracts, body scrub containing natural plant materials, emulsion etc.

Prerequisites and co-requisites

Basic knowledge of organic chemistry and biochemistry.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Student's own work	51.0%	50.0%
Reports	51.0%	50.0%

Recommended reading

Basic literature

Materials Provided by the Instructor:

- Instructions for laboratory exercises
- Lecture notes
- Recommended scientific literature and reference articles

	Supplementary literature	• Danuta Sobolewska, Irma Podolak, Dagmara Wróbel-Biedrawa, Fitokosmetyki, PZWL 2025. • Eliza Lamer-Zarawska, Cezary Chwała, Antoni Gwardys, Rośliny w kosmetyce i kosmetologii przeciwstarzeniowej, PZWL 2011
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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