


KAPITAŁ LUDZKI
 NARODOWA STRATEGIA SPÓJNOŚCI

 Projekt współfinansowany przez
 Unię Europejską w ramach
 Europejskiego Funduszu
 Społecznego

UNIA EUROPEJSKA
 EUROPEJSKI
 FUNDUSZ SPOŁECZNY


Course title		ECTS code	
Cosmetics chemistry		13.3.0488	
Name of unit administrating study			
Faculty of Chemistry			
Studies			
faculty	field of study	type	pierwszego stopnia
Wydział Chemii	Chemia	form	stacjonarne
		specjalty	chemia kosmetyków
		specialization	wszystkie
Teaching staff			
dr hab. Beata Grobelna, profesor uczelni; mgr Elżbieta Adamska			
Forms of classes, the realization and number of hours		ECTS credits	
Forms of classes		4	
Laboratory classes, Lecture		classes - 60 h	
The realization of activities		tutorial classes – 5 h	
classroom instruction		student's own work – 35 h	
Number of hours		Total: 100 h - 4 ECTS	
Lecture: 30 hours, Laboratory classes: 30 hours			
The academic cycle			
2023/2024 summer semester			
Type of course		Language of instruction	
obligatory		polish	
Teaching methods		Form and method of assessment and basic criteria for evaluation or examination requirements	
- conducting experiments - multimedia-based lecture		Final evaluation	
		Graded credit	
		Assessment methods	
		- written test with open questions - graded course credit based on individual grades obtained during the semester	
		The basic criteria for evaluation	
		The scale of grades in accordance with the applicable UG Regulations • positive evaluation of the written exam consisting of 10-15 open questions covering the issues mentioned in the lecture content and laboratory exercises, • positive assessment of 6 entrance collections covering the subject of performed experiments as part of laboratory exercises, preparation of the experimental part included in the curriculum and elaboration of results obtained in the experimental part (report).	
Method of verifying required learning outcomes			
Required courses and introductory requirements			
A. Formal requirements			
completed general and inorganic chemistry course			
B. Prerequisites			
identifies and recognizes basic organic and inorganic compounds, applies basic formulas from stoichiometry and concentrations of solutions for chemical calculations, performs simple chemical experiments.			
Aims of education			

- development the ability to independently perform cosmetic products and to solve problems during the production of cosmetics.
- familiarize students with terminology and cosmetic nomenclature..
- familiarize students with the properties of raw materials for the production of cosmetics.
- development the ability to use chemical knowledge in assessing the production possibilities of selected cosmetics on an industrial scale and the selection of optimal raw materials to obtain a specific product.

Course contents

A. Lecture topics: structure and properties of emulsion, stages of emulsion formation, stability and instability of the emulsion system. Natural and synthetic emulsifiers, selection and operation of the emulsifier, HLB of emulsifier. Cosmetic emulsions: characteristic of raw materials of emulsion, INCI nomenclature, formulation of emulsion. Active ingredients in cosmetics: vitamins, liposomes, proteins, peptides, lipids, ceramides, substances of vegetable origin. UV filters (physical and chemical). Antimicrobial compounds (preservatives, deodorants, antiperspirants). Antioxidants: characterization of compounds, antioxidant effect in a cosmetic product. Fragrance compounds: natural and synthetic, isolation, formulation. Surfactants (soaps, detergents, shampoos), their characteristics and biodegradation. Chemistry of colored cosmetics: (hair dyes, roses, powders, inks, lipsticks) characteristics of basic raw materials and production stages. Means for oral hygiene (toothpastes, mouth rinses, powders and bleaches). The classification of all cosmetic components discussed is based on functional groups or chemical systems present in the connection structure..

B. Laboratory exercises topics: students will use the knowledge gained during the lecture to learn practical skills related to the preparation and technology of manufacturing selected cosmetics.

Bibliography of literature

Literature required to pass the course

- „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

Extracurricular readings

- „Kosmetologia i farmakologia skóry” M.C.Martini,
- „Encyklopedia kosmetyki” Jacek Arct.

The learning outcomes (for the field of study and specialization)

Knowledge

1. identifies and recognizes basic cosmetics,
2. defines emulsion systems,
3. demonstrates knowledge of the selection of the right ingredients for cosmetic products
4. uses the INCI (International Nomenclature Chemical Ingredients) terminology,
5. locates active ingredients in cosmetic products,
6. distinguishes basic types of UV filters,
7. explains the effect of preservatives,
8. characterizes compounds with antioxidant activity,
9. lists compounds with aromatic properties
10. classifies the ingredients of cosmetic products to particular groups of chemical compounds
11. classifies compounds with harmful effects on the human body,
12. recognizes and compares the most important properties of ingredients in cosmetic products.

Skills

1. independently performs cosmetic emulsions,
2. independently searches for information in the cosmetics literature,
3. uses basic formulas of stoichiometry and concentration of solutions to calculate the right amounts of raw materials for the production of cosmetics,
4. recognizes the basic equipment for the production of cosmetic products and uses it to obtain selected cosmetic products,
5. predicts the results of the conducted syntheses,
6. independently performs color cosmetics (lipsticks, mascaras, powder), for body washing, hair and for oral care,
7. evaluates the pH of cosmetic products,

Social competence

1. works according to the Principles of Green Chemistry during the production of cosmetics and household chemicals,

- | | |
|--|---|
| | <ul style="list-style-type: none">- works independently and in a team,- works carefully in dealing with raw materials for the production and analysis of cosmetic products,- maintains an environmentally friendly attitude during the production of cosmetics and shows the ideas of mutual relations between man and the environment, |
|--|---|

Contact

beata.gobelna@ug.edu.pl