



UNIWERSYTET
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W POZNANIU

Herbs used in cosmetics

Educational subject description sheet

Basic information

Study programme Chemia (General Chemistry) Speciality - Organizational unit Faculty of Chemistry Study level First-cycle programme Study form Full-time Education profile General academic		Didactic cycle 2023/24 Subject code 02CENS.18KU.01832.23 Lecture languages English Course type Elective Block Complementary major subjects	
Subject coordinator	Agata Wawrzyńczak		
Lecturer	Agata Wawrzyńczak		
Period Semester 4	Activities and hours • Lecture: 15, Graded credit; including sub-activities: ◦ Asynchronous lecture: 15		Number of ECTS points 1

Goals

Code	Goal
C1	To get acquainted with the most important plant raw materials used in the process of obtaining cosmetic products.
C2	To get acquainted with the chemical composition and cosmetic effects of selected plant raw materials.
C3	To familiarize students with the procedures for obtaining chemical substances from plant raw materials.
C4	To get acquainted with procedures for qualitative and quantitative analysis of chemical substances obtained from plant raw materials.
C5	To present standards for the purity and processing conditions of plant raw materials.

Entry requirements

No prerequisites required.

Subject learning outcomes

Code	Outcomes in terms of	Learning outcomes	Examination methods
Knowledge - Student:			
W1	knows and understands the core properties of the various groups of chemicals extracted from herbal raw materials.	CEN_K1_W04, CEN_K1_W08, CEN_K1_W12	Test, Assignment paper
W2	knows and understands the ways to process plant raw materials for the cosmetic industry.	CEN_K1_W14, CEN_K1_W16	Test
W3	knows and understands the principles of analytical techniques and instrumental methods for extracting chemicals from plant raw materials and determining their qualitative and quantitative composition.	CEN_K1_W14, CEN_K1_W15	Test
W4	knows and can define the standards for the conditions of collection, processing, and storage of herbal raw materials.	CEN_K1_W04, CEN_K1_W11, CEN_K1_W13	Test
Skills - Student:			
U1	can present and explain the cosmetic effects of plant raw materials used in cosmetics.	CEN_K1_U02, CEN_K1_U21, CEN_K1_U25	Assignment paper
U2	is able to select analytical techniques and instrumental methods for the needs of the cosmetic industry, in particular for the extraction of chemical substances from plant raw materials and determination of their chemical composition.	CEN_K1_U16, CEN_K1_U17	Test
U3	is able to recognize and name the various elements of plants that are used in the cosmetic industry.	CEN_K1_U02, CEN_K1_U21	Test
Social competences - Student:			
K1	is able to share the acquired knowledge in an accessible manner.	CEN_K1_K02	Assignment paper
K2	is ready to ask questions and lead discussions to gain a deeper understanding of a given topic.	CEN_K1_K06	Assignment paper

Code	Outcomes in terms of	Learning outcomes	Examination methods
K3	is aware of the consequences of using plant raw materials in the cosmetics industry.	CEN_K1_K04	Assignment paper

Study content

No.	Course content	Subject learning outcomes	Activities
1.	Plant raw materials and their extraction for the cosmetic industry (types of plant raw materials, methods of their obtaining, stabilization and storage of herbs).	W2, U3, K3	Lecture, Asynchronous lecture
2.	Processing and standardization of plant raw materials for the needs of the cosmetic industry.	W2, W4, U2	Lecture, Asynchronous lecture
3.	Analytical techniques and instrumental methods used for obtaining and assessing the quality of ingredients of cosmetic products obtained from plant raw materials.	W1, W3, U2, K2	Lecture, Asynchronous lecture
4.	Cosmetic effects of selected chemicals of plant origin and the possibility of their use in cosmetic products.	W1, U1, K1, K2, K3	Lecture, Asynchronous lecture

Additional information

Activities	Teaching and learning methods and activities
Lecture	Lecture with a multimedia presentation of selected issues, Discussion, Work with text, Audio and/or video demonstrations, e-learning

Activities	Credit conditions
Lecture	<p>To pass the course a student must participate in the following activities:</p> <ul style="list-style-type: none"> • Read the teaching materials posted on the e-learning platform (optional materials are described as "additional materials"). • Answer control questions posted in the learning materials. • Solve two tests (within the applicable deadlines). • Prepare an assignment paper. <p>Each activity available in the course is awarded a certain number of points:</p> <ul style="list-style-type: none"> • Control questions in the teaching materials - 10 points. • Test 1 - 10 points • Test 2 - 15 points • Assignment paper - 60 points <p>Additional points (maximum 5) can be earned by initiating discussions and participating in thematic discussions held on the forum within the e-learning platform.</p> <p>A total of 95 points can be earned throughout the course, and the final grade will depend on the number of points accumulated at the end of the course. A minimum of 52.25 points are required to pass, which is 55 % of the total number of points possible in the course.</p> <p>The grading scale is as follows:</p> <ul style="list-style-type: none"> • 95.00 - 85.50 -> excellent (5.0 / A) • 85.49 - 80.75 -> very good (4.5 / B) • 80.74 - 71.25 -> good (4.0 / C) • 71.24 - 61.75 -> satisfactory (3.5 / D) • 61.74 - 52.25 -> satisfactory (3.0 / E) • 52.24 - 00.00 -> failing (2.0 / F)

Literature

Obligatory

1. Materials provided by the lecturer.
2. M.B.P.P. Oliveira, F. Rodrigues (Eds.), Plant Extracts in Skin Care Products, MDPI, Basel, Switzerland, 2018.

Optional

1. H.A.E. Benson, M.S. Roberts, V. Rodrigues Leite-Silva, K. Walters (Eds.), Cosmetic Formulation: Principles and Practice, CRC Press, Boca Raton, FL, USA, 2021.
2. N. Lall (Ed.), Medicinal Plants for Cosmetics, Health and Diseases, CRC Press, Boca Raton, FL, USA, 2022.
3. D. Janeš, N. Kočevár Glavač (Eds.), Modern Cosmetics. Ingredients of Natural Origin - A Scientific View, Širimo dobro besedo, d.o.o., Velenje, Slovenia, 2018.
4. F. Patri, V. Silano, Plants in cosmetics: Plants and plant preparations used as ingredients for cosmetic products. Volume 1, Council of Europe Publishing, 2001.
5. R. Anton, F. Patri, V. Silano, Plants in cosmetics: Plants and plant preparations used as ingredients for cosmetic products. Volume 2, Council of Europe Publishing, 2002.
6. Plants in cosmetics: Potentially harmful components. Volume 3, Council of Europe Publishing, 2006.
7. B. Burlando, L. Verotta, L. Cornara, E. Bottini-Massa, Herbal Principles in Cosmetics: Properties and Mechanisms of Action, CRC Press, Boca Raton, FL, USA, 2010.
8. Current scientific publications in journals such as: Polish Journal of Cosmetology; International Journal of Cosmetic Science; Journal of Cosmetic Science; Cosmetics.

Calculation of ECTS points

Activities	Activity hours*
Lecture	15
Preparation for classes	3
Reading the indicated literature	2
Paper preparation	10
Student workload	Hours 30
Number of ECTS points	ECTS 1

* academic hour = 45 minutes

Efekty uczenia się dla kierunku

Kod	Treść
CEN_K1_K02	The graduate is ready to understand the importance of presenting selected developments in chemistry in an accessible manner
CEN_K1_K04	The graduate is ready to understand the importance and consequences of the professional activity of a chemist and its impact on the environment and the associated responsibility for decisions taken
CEN_K1_K06	The graduate is ready to formulate precise questions to deepen his/her own understanding of a topic or to find missing pieces of reasoning
CEN_K1_U02	The graduate can present the knowledge acquired in an accessible manner
CEN_K1_U16	The graduate can apply analytical techniques to explain basic chemical and physicochemical phenomena
CEN_K1_U17	The graduate can select instrumental analysis methods to investigate specific chemical and physicochemical phenomena
CEN_K1_U21	The graduate can independently obtain information from both Polish and foreign literature, physicochemical tables and other available sources
CEN_K1_U25	The graduate can create a presentation of a specific chemical or physicochemical problem and propose a solution to it
CEN_K1_W04	The graduate knows and understands fundamental knowledge of natural sciences
CEN_K1_W08	The graduate knows and understands the chemical properties of substances according to their structure/composition
CEN_K1_W11	The graduate knows and understands the chemical aspects of biological processes
CEN_K1_W12	The graduate knows and understands chemical compounds, including those discovered recently
CEN_K1_W13	The graduate knows and understands processes and relationships in the environment
CEN_K1_W14	The graduate knows and understands the basic laboratory and analytical techniques
CEN_K1_W15	The graduate knows and understands the basic methods of instrumental analysis
CEN_K1_W16	The graduate knows and understands the basic processes of chemical technology