

DESCRIPTION OF THE COURSE OF STUDY

Course code	1012.7.KOS2.B/C25.FiCHMBWK	
Name of the course in	Polish	Chemiczne i fizyczne metody badania właściwości kosmetyków
	English	Chemical and physical methods of cosmetics properties analysis

1. LOCATION OF THE COURSE OF STUDY WITHIN THE SYSTEM OF STUDIES

1.1. Field of study	Cosmetology
1.2. Mode of study	Full-time studies
1.3. Level of study	Master's degree
1.4. Profile of study*	Practical
1.5. Person/s preparing the course description	dr Monika Michalak, dr Dariusz Widel
1.6. Contact	dariusz.widel@ujk.edu.pl

2. GENERAL CHARACTERISTICS OF THE COURSE OF STUDY

2.1. Language of instruction	English
2.2. Prerequisites*	Fundamentals of chemistry

3. DETAILED CHARACTERISTICS OF THE COURSE OF STUDY

3.1. Form of classes	Lectures, classes	
3.2. Place of classes	Teaching rooms of the UJK	
3.3. Form of assessment	Credit with grade	
3.4. Teaching methods	Information lecture, discussion. Explanation, panel discussion, analysis	
3.5. Bibliography	Required reading	1. B. Stanisz, I. Muszalska: Metody badania jakości surowców i produktów kosmetycznych. Podręcznik do ćwiczeń dla studentów kosmetologii. UM, Poznań, 2009. 2. A. Marzec: Chemia kosmetyków: surowce, półprodukty, preparatyka wyrobów. Wydawnictwo „Dom Organizatora”, Toruń, 2009.
	Further reading	1. Szczepaniak W., Metody instrumentalne w analizie chemicznej..Wydawnictwo PWN, Warszawa 2008

4. OBJECTIVES, SYLLABUS CONTENT AND INTENDED LEARNING OUTCOMES

<p>4.1. Course objectives (including form of classes)</p> <p>Lecture</p> <p><i>C1.</i> Introducing students with chemical compounds used for cosmetics production <i>C2.</i> Introducing students to physical methods of basic cosmetic properties characterization <i>C3.</i> Introducing students to analytical methods of cosmetics analysis</p> <p>Laboratories</p> <p><i>C1.</i> Introducing students to apparatus and equipment used for physical and chemical analyses of cosmetics <i>C2.</i> Introducing students to selected methods of sample preparation <i>C3.</i> Determination of basic physical properties of cosmetics: pH, viscosity, surface tension, <i>C4.</i> Determination of acetone in nail polish removers by gas chromatography with flame-ionization detection (GC-FID), determination of selected organic compounds in cosmetic preparations by gas chromatography coupled to mass spectrometry (GC-MS)</p>
<p>4.2. Detailed syllabus (including form of classes)</p> <p>Lecture/ Laboratories</p> <p>1. General characterization of chemical compounds used for cosmetics production. 2. Basic physical methods of cosmetics analysis: viscosity, surface tension, spectrophotometry. 3. Selected analytical methods of cosmetics investigation: gas chromatography (GC), liquid chromatography (LC), mass spectrometry (MS), capillary electrophoresis (CE). 4. Selected methods of extraction used in analysis of cosmetics: solid phase extraction (SPE), solid phase microextraction (SPME), microextraction to porous sorbent (MEPS), magnetic solid phase extraction (MSPE)</p>

4.3 Intended learning outcomes

Code	A student, who passed the course	Relation to learning outcomes
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within the scope of KNOWLEDGE:		
W01	Student can evaluate a cosmetic preparation, its ingredients and action.	KOS2P_W10
W02	the student has in-depth knowledge of the chemical purity of cosmetics and methods used in quality control	KOS2P_W10
within the scope of ABILITIES:		
U01	Student alone or in a research team is able to prepare and present the characteristics of a cosmetic preparation in terms of its physicochemical properties.	KOS2P_U01
U02	Student is able to correctly perform the qualitative analysis of the cosmetic and active ingredients of the product.	KOS2P_U06
U03	Student is able to correctly perform the quantitative analysis of cosmetics with the use of classical and instrumental methods.	KOS2P_U06
within the scope of SOCIAL COMPETENCE:		
K01	Student is aware of the need to systematically obtain information from reliable sources on research methods in cosmetics.	KOS2P_K03
K02	Student uses the acquired knowledge in professional work in the field of the usefulness of cosmetic products and their quality control.	KOS2P_K03

4.4. Methods of assessment of the intended learning outcomes																					
Teaching outcomes (code)	Method of assessment (+/-)																				
	Exam oral/written*			Test*			Project*			Effort in class*			Self-study*			Group work*			Others* e.g. standardized test used in e-learning		
	Form of classes			Form of classes			Form of classes			Form of classes			Form of classes			Form of classes			Form of classes		
	L	C	...	L	C	...	L	C	...	L	C	...	L	C	...	L	C	...	L	C	...
W01	+	-		-	-						-	-									
W02	+	-		-	-						-	-									
U01	-	-		-	+						-	+									
U02	-	-		-	+						-	+									
U03	-	-		-	+						-	+									
K01	-	-		-	-						-	+									
K02	-	-		-	+						-	-									

*delete as appropriate

4.5. Criteria of assessment of the intended learning outcomes		
Form of classes	Grade	Criterion of assessment
lecture	3	61%-68% successfully passed the exam. Learning programme content on the basic level, replies chaotic, leading questions necessary
	3,5	69%-76% successfully passed the exam. Learning programme content on the basic level, answers systematized, requires assistance from the teacher
	4	77%-84% successfully passed the exam. Learning programme content on the basic level, answers systematized, independent. Solving of problems in typical situations.
	4,5	85%-92% successfully passed the exam. The scope of presented knowledge exceeds the basic level based on the supplementary literature provided. Solving of problems in new complex situations.
	5	93%-100% successfully passed the exam. The scope of presented knowledge exceeds the basic level based on independently acquired scientific sources of information
classes	3	Class attendance in accordance with the study regulations. 61-68% successfully passed the exam. Mastering the content of the curriculum at the basic level.
	3,5	Presence at classes in accordance with the regulations of studies. 69-76% of successfully passed the exam. Mastering the content of the curriculum at the basic level.
	4	Presence at classes in accordance with the regulations of studies. 77-84% of successfully passed the exam. Mastering the content of the curriculum at the basic level.
	4,5	Presence at classes in accordance with the regulations of studies. 85-92% successfully passed the exam. The scope of the presented knowledge goes beyond the basic level based on the supplementary literature provided.

5	Presence at classes in accordance with the regulations of studies. 93-100% of successfully passed the exam. The scope of the presented knowledge goes beyond the basic level based on self-acquired scientific sources of information.
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5. BALANCE OF ECTS CREDITS – STUDENT’S WORK INPUT

Category	Student's workload	
	Full-time studies	Extramural studies
<i>NUMBER OF HOURS WITH THE DIRECT PARTICIPATION OF THE TEACHER /CONTACT HOURS/</i>	40	25
<i>Participation in lectures</i>	15	10
<i>Participation in laboratories</i>	25	15
<i>INDEPENDENT WORK OF THE STUDENT/NON-CONTACT HOURS/</i>	35	50
<i>Preparation for the lecture</i>	10	15
<i>Preparation for the laboratories</i>	25	35
<i>TOTAL NUMBER OF HOURS</i>	75	75
ECTS credits for the course of study	3	3

**delete as appropriate*

Accepted for execution (date and legible signatures of the teachers running the course in the given academic year)

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