

Study Program: Pharmaceutical engineering		
Course Unit Title: Active cosmetics and cosmeceuticals		
Course Unit Code: DFI03		
Name of Lecturer(s): Assoc. Prof. Lidija Petrović, PhD; Ass. Prof. Jadranka Fraj, PhD		
Type and Level of Studies: Master Academic Degree		
Course Status (compulsory/elective): Elective		
Semester (winter/summer): Winter		
Language of instruction: English		
Mode of course unit delivery (face-to-face/distance learning): Face-to-face		
Number of ECTS Allocated: 7		
Prerequisites: None		
Course Aims: Introduce students to new forms of cosmetic preparations and active substances that enable additional, active action on the biochemical processes of the skin.		
Learning Outcomes: Training for independent creation of new forms of cosmetic preparations enriched with cosmetically active substances with specific physiological activity.		
Syllabus: Theory Cosmetic active substances, pathway and mechanism of their action, and application. Influence on the physiological processes in the skin and their purpose. Contemporary forms of cosmetic preparations, properties and methods of production. Carriers of cosmetically active substances, liposomes. Method of administration, release mechanisms and the action of incorporated active substances. Interactions with different components that are part of the modern formulations of cosmetic preparations. Skin interaction, irritation and allergic reactions. Stability test and performance evaluation of individual forms of the preparation. Practice Experimental exercises in the field of selecting a cosmetically active substance and incorporating it into various carriers- liposomes, emulsion carriers, gels. Product quality assessment (stability, rheological properties and effect on the skin).		
Required Reading: 1. Goddard, E. D.-Gruber, James V., Principles of Polymer Science and Technology in Cosmetics and Personal Care, 1999. http://web.a.ebscohost.com/ehost/detail/detail?vid=0&sid=e8cb600c-5784-47f7-b629-aa47ccdeda24%40sessionmgr4009&bdata=JnNpdGU9ZWlhvc3QtbGl2ZQ%3d%3d#db=e000xww&AN=12609 2. Aaron Tabor and Robert M. Blair (ed.), Nutritional Cosmetics, 2009. http://www.sciencedirect.com/science/book/9780815520290 3. P. Elsner, H. I. Maibach, Cosmeceuticals and Active Cosmetics, Taylor & Francis Group, 2005.		
Weekly Contact Hours:	Lectures: 3	Practical work: 3
Teaching Methods:		

Interactive lectures or consultations, depending on the number of students.

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	Final exam	points
Active class participation	5	written exam	-
Practical work	5	oral exam	60
Preliminary exam(s)	30	
Seminar(s)	-		

The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.