

<b>Study Programme:</b> Pharmaceutical engineering		
<b>Course Unit Title:</b> Pharmaceutical packaging materials		
<b>Course Unit Code:</b> DFI07		
<b>Name of Lecturer(s):</b> Associate Professor Senka Popović		
<b>Type and Level of Studies:</b> Master Academic Studies		
<b>Course Status (compulsory/elective):</b> Elective		
<b>Semester (winter/summer):</b> summer		
<b>Language of instruction:</b> English		
<b>Mode of course unit delivery (face-to-face/distance learning):</b> Face-to-face		
<b>Number of ECTS Allocated:</b> 7		
<b>Prerequisites:</b> None		
<b>Course Aims:</b> The aim of the course is to introduce students to the achievements in the field of production theory and application of packaging materials and packaging for the packaging of pharmaceutical products, with a special emphasis on the modern packing processes and specific packaging conditions.		
<b>Learning Outcomes:</b> Students should be familiar with the latest trends in the field of packaging materials and packaging. It will also be familiarized with the application of the most up-to-date packaging conditions for pharmaceuticals product.		
<b>Syllabus:</b> <i>Theory</i> Study of the characteristics of traditional and new mono and combined packaging materials, types and forms of packaging, practical application for different packaging technologies. Study of barrier and structural properties of polymeric packaging materials. Getting acquainted with modern packaging materials and packaging for packaging pharmaceutical products - biodegradable packaging, edible, active and intelligent. <i>Practice</i> Introduction to the basic characteristics of various packaging materials and packaging and their proper application in the process of packing pharmaceutical products. Characterization of basic and specific properties of traditional and new packaging materials, classical and modern methods of analysis. Demonstrate the degradability of packaging materials using modern equipment and current methods.		
<b>Required Reading:</b> 1. D.A. Dean: Pharmaceutical Packaging Technology, 2000. 2. Ahvenainen, R. (2003).: Novel Packaging Techniques, VTT Biotechnology, Finland 3. Parry, R.T. (1993).: Principles and Applications of Modified Atmosphere Packaging, Blackie Academic & Professional, Glasgow, UK 4. Lazić, V., Novaković, D., Ambalaža i životna sredina, Tehnološki fakultet Novi Sad, Novi Sad, 2010. 5. Popović, S., Hromiš, N., Lazić, V., Kontrola kvaliteta ambalaže i pakovanja: praktikum sa radnom sveskom [Elektronski izvor], Tehnološki fakultet Novi Sad, Novi Sad, 2022.		
<b>Weekly Contact Hours:</b>	<b>Lectures:</b> 3	<b>Practical work:</b> 3
<b>Teaching Methods:</b>		

Interactive lectures, consultations in a group of students or individually, depending on the number of students, laboratory work - independent or in smaller groups.

**Knowledge Assessment (maximum of 100 points):**

<b>Pre-exam obligations</b>	points	<b>Final exam</b>	points
Active class participation	5	written exam	
Practical work	15	oral exam	30
Preliminary exam(s)	30	.....	
Seminar(s)	20		

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