

Course Unit Descriptor

Study Programme: Bachelor Academic Studies in Biochemistry		
Course Unit Title: Chemistry of Pharmaceutical Products		
Course Unit Code: IB-404		
Name of Lecturer(s): Associate Professor Ivana Kovačević		
Type and Level of Studies: Bachelor of Science Degree		
Course Status (compulsory/elective): elective		
Semester (winter/summer): summer		
Language of instruction: English		
Mode of course unit delivery (face-to-face/distance learning): Face-to-face		
Number of ECTS Allocated: 6		
Prerequisites: none		
Course Aims: Understanding the commercial pharmacologically active molecules using modern methods of organic chemistry and their structural characterization. Introduce students to the biological mechanism of action of the selected drugs and water-soluble vitamins.		
Learning Outcomes: Overcome the necessary knowledge on methods of synthesis, pharmacological effects and mechanism of biological action of selected drugs.		
Syllabus: <i>Theory</i> Chemical synthesis, pharmacological effects and mechanisms of biological action following types of drugs: drugs that act on the heart, antibacterial drugs, antidepressants, drugs for the treatment of gastric ulcers and allergic conditions. Important objectives of this course relate to the introduction of basic representative water-soluble naturally available vitamins in terms of their structure, physical-chemical properties and biological roles. In addition, part of the course is dedicated to the introduction of synthetic techniques suitable for work on a large scale. Also part of this course is devoted to acquiring knowledge about the factors that influence the resistance to drugs. One of the important tasks of this course is to introduce students to the structure and purity determination of synthesized compounds using NMR techniques. Introducing the main principles and features of this technique is planned to train students for rapid identification of the basic structural characteristics. <i>Practice</i> Chemical processing and purification of intermediates in the multi-step synthesis of biologically active molecules, and their spectroscopic characterization.		
Required Reading: 1. Claridge, T.D.W. <i>High-Resolution NMR Techniques in Organic Chemistry</i> , Second Edition, Tetrahedron Organic Chemistry, Vol. 27. Elsevier, 2009. 2. Saunders, J. <i>Top Drugs: Top Synthetic Routes</i> , Oxford, University Press, , 2001.		
Weekly Contact Hours: 5 (75)	Lectures: 3 (45)	Practical work: 2 (30)
Teaching Methods: Lectures, laboratory work		
Knowledge Assessment (maximum of 100 points): 100		

Pre-exam obligations	points	Final exam	points
Active class participation	10	written exam	80
Practical work	10	oral exam	
Preliminary exam(s)		
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.