

<b>Study Programme:</b> Bachelor Academic Studies in Biochemistry ; Bachelor Academic Studies in Chemistry		
<b>Course Unit Title:</b> Chemistry of Natural Products		
<b>Course Unit Code:</b> H-302		
<b>Name of Lecturer(s):</b> Associate Professor Bojana Srećo-Zelenović		
<b>Type and Level of Studies:</b> Bachelor of Science Degree		
<b>Course Status (compulsory/elective):</b> compulsory		
<b>Semester (winter/summer):</b> winter		
<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> 8		
<b>Prerequisites:</b> none		
<b>Course Aims:</b> A chemistry-based teaching programme encompassing following types of natural products: polyketides, phenylpropanoids, terpenoids, steroids and alkaloids. Special attention is given to the compounds of medicinal importance and semi-synthetic derivatives originating from natural products.		
<b>Learning Outcomes:</b> Overcome the necessary knowledge on methods of isolation, biosynthesis and synthesis of selected classes of natural products. Acquaintance with significant chemical properties and biological activities of interest for those natural products.		
<b>Syllabus:</b> <i>Theory</i> Secondary metabolism: The building blocks and mechanisms for the construction of the skeleton. Structural modifications: C-alkylation reactions, spontaneous reactions, oxidations and reductions. The shikimate pathway: aromatic amino acids and phenylpropanoids. Secondary metabolites of mixed origin: Flavonoids, anthocyanes. The acetate pathway: Polyketides, prostaglandins and leukotrienes. The mevalonate pathway: Terpenoids and steroids. Alkaloids: Tropane alkaloids, cinchona alkaloids, phenyl alkaloids, steroidal alkaloids, opium alkaloids, piperidine and pyridine alkaloids. <i>Practice</i> Isolation, purification and reactivity of apigenin, biochanin A, naringin, anethole, carvone, limonene, lycopene, karotenases, ergosterol, Nasonov pheromone, camphor, cholesterol, vitamin D <sub>2</sub> , bile acids, piperine, caffeine and other natural products in accordance with theoretical instruction.		
<b>Required Reading:</b> 1. Rahman, A. <i>Studies in Natural Products Chemistry</i> , Elsevier, 2012. 2. Dewick, P.M. <i>Medicinal Natural Products</i> , John Wiley & Sons, Ltd.2002.		
<b>Weekly Contact Hours:</b> 7 (105)	<b>Lectures:</b> 4 (60)	<b>Practical work:</b> 3 (45)

**Teaching Methods:**

Lectures, laboratory work

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

<b>Pre-exam obligations</b>	points	<b>Final exam</b>	points
Active class participation	10	written exam	70
Practical work	10	oral exam	
Preliminary exam(s)		.....	
Seminar(s)	10		

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