

Table 5.2 Course specification

Type and level of studies: Bachelor of Science Degree				
Course name: Chemistry of Natural Products				
Course status: compulsory				
Number of ECTS credits: 8				
Requirement: none				
Course aim 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.				
Course outcome 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.				
Course content <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: Practical classes, OFT, SRW</i> Isolation, purification and reactivity of apigenin, biochanin A, naringin, anethole, carvone, limonene, lycopene, karotenase, ergosterol, Nasonov pheromone, camphor, cholesterol, vitamin D ₂ , bile acids, piperine, caffeine and other natural products in accordance with theoretical instruction.				
Literature 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				
Number of classes of active teaching				Other classes
Lectures: 4(60)	Practice: 3 (45)	OFT:	SRW:	
Teaching methods Lectures, laboratory work				
Assessment of knowledge (maximum of 100 points)				
Pre-exam obligations	Points	Final exam		points
activity during lecture classes	10	written exam		70
practical teaching	10	oral exam		
colloquia				
seminars	10			