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

Theory

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 pahway: Terpenoids and steroids.
Alkaloids: Tropane alkaloids, cinchona alkaloids, phenyl alkaloids, steroidal alkaloids, opium alkaloids, piperidine and pyridine alkaloids.

Practice: Practical classes, OFT, SRW

Isolation, purification and reactivity of apigenin, biochanin A, naringin, anethole, carvone, limonene, lycopene, karotenas, 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. *Studies in Natural Products Chemistry*, Elsevier, 2012.
2. Dewick, P.M. *Medicinal Natural Products,* 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		