

Study Program: Biology			
Type and level of studies: Bachelor studies			
Course name: Plants Secondary metabolites			
Lecturer: Savić Lj. Gojko			
Status: Compulsory			
ECTS: 7			
Attendance Prerequisites:			
Course aims Providing students with the necessary basis for becoming acquainted with the most important secondary metabolites and their role in relationships between organisms; noticing opportunities for using metabolites to suppress pathogenic organisms, in accordance with the modern tendencies in science.			
Course outcome Acquiring the necessary theoretical knowledge about the secondary metabolites and their role and significance, as well as about the possibilities of their practical application through lectures, seminar papers and term tests.			
Course content <i>Theoretical part</i> Introduction - the concept of secondary metabolism and metabolites, a history of research. The most important synthetic pathways and the basic reactions of secondary metabolites. Glucosides, terpenoids, steroids, phenols and their derivatives, alkaloids, flavonoids, organic acids. Genetic and ecological variability of secondary metabolites in plants. Biological activity of secondary metabolites: as ecobiochemically active substances: ecological interactions between organisms; regulatory effect in the microorganism/herbivore-induced plant response or in reaction to pollinators; plants' defensive response to environmental stress conditions such as allelochemicals: phenolic compounds and terpenoids, inhibitory and positive effects. Physiological properties and application of terpenoids. Allelopathic compounds in higher plants and lichen, autotoxic allelopathic effects. Phytoncides. Marasmines. Antibiotics. Organic acids as specific secondary biomolecules for plants because they are synthesized and accumulated in plants. <i>Practical part</i> Main features of programming and preparation for work. Methodical training and preparing for the practical application of the lesson.			
Literature 1. Марин, П.: Биохемијска и молекуларна систематика биљака, ННК, Београд 2003. 2. Гашић О.: Биохемија биљака, Научна књига, Београд 1992. 3. Грујић-Ињац Б., Лајсић С.: Хемија природних производа, Филозофски факултет, Универзитет у Нишу, 1983.			
Number of active classes			Other classes:
Lectures: 2	Practical classes: 1	Other forms of teaching: 0	
Teaching methods Lectures, laboratory exercises.			
Assessment (maximum 100 points)			
Course assignments	points	Final exam	points
activity during lectures	10	written exam	20
practical classes	20	oral exam	50
Term test/s			
Total	30		70