

Study Program: Biology			
Type and level of studies: Bachelor studies			
Course name: Plant physiology			
Lecturer: Trajković Lj. Radmila			
Status: Compulsory			
ECTS: 7			
Attendance Prerequisites:			
Course aims Introduction to the main mechanisms that support life processes in plants, their connection and dependence on endogenous and exogenous factors. Studying the mineral elements absorption mechanisms, biosynthetic reactions in the process of photosynthesis as well as the processes of growth and development during morphogenesis.			
Course outcome Having acquired the necessary knowledge in this field, the students can understand plant life processes and how plants synthesise organic matter using inorganic compounds and the sun's energy. They know that the plants then use this energy for growth and reproduction, which is of utmost importance for life on Earth.			
Course content <i>Theoretical part:</i> Definition, tasks historical development. Plant cell physiology (types of cell organisation, cellular organelles, the chemical composition of a plant cell. The water regime of plants (importance of water for plant life forms, water in the earth, absorption, movement, long-distance transport, transpiration, stomatal opening and closure mechanism. Mineral nutrition (the soil as a source of minerals, the cycles of elements, macro and micronutrients, the root as an absorption organ, physiological functions of minerals). Photosynthesis (the importance of photosynthesis for the living world, photosynthetic pigments, the mechanism and chemistry of photosynthesis, light and dark phase of photosynthesis). Cellular respiration (the significance and biological meaning of respiration and a permanent circulation of energy in biological systems, anaerobic and aerobic respiration). Growth and development (characteristics, differentiation and totipotency of endogenous and exogenous regulation of growth and development). Stress physiology. Physiology of movement (autonomous and induced movements). <i>Practical part:</i> Exercises, other forms of teaching, students' research work Exercises are performed in the laboratory using modern methods. Measuring the osmotic pressure of the plant sap, measuring transpiration, extracting plant pigments from sap and chloroplasts, determining the intensity of photosynthesis, qualitative analysis of minerals in plants, aquatic plants, alcoholic fermentation, identification of phytohormones, apical dominance, endosperm test, cytokinins – green leaf cuttings test; seed germination. Practical exercises are mainly coordinated with the lecture content.			
Literature 1. Нешковић, М., Коњевић, Р., Тулафић, Љ.(2003): Физиологија биљака, ННК, Београд; 2. Кастори, Р.(1998): Физиологија биљака, Нови Сад; 3. Трајковић, Р., Шунић, Љ.(2002) Практикум из физиологије биљака, Крушевац.			
Number of active classes			Other classes
Lectures: 3	Practical classes: 2	Other forms of teaching:	
Teaching methods Lectures, laboratory exercises, consulting.			
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