

Faculty of Metallurgy and Technology / ENVIRONMENTAL PROTECTION / ENVIRONMENTAL BIOLOGICAL PROCESSES

Course:	ENVIRONMENTAL BIOLOGICAL PROCESSES			
Course ID	Course status	Semester	ECTS credits	Lessons (Lessons+Exercises+Laboratory)
2823	Mandatory	2	6	3+0+2
Programs	ENVIRONMENTAL PROTECTION			
Prerequisites	There are no requirements for registering and listening to the subject			
Aims	Acquaintance of students with the basic structure and functions of living organisms, biodiversity and ecological laws.			
Learning outcomes	After the student passes this exam, he/she will be able to: 1. Finds and explains the connection between structure, function and processes at different levels of organization of the living world (at the level of molecules, cells, organisms, populations, communities, ecosystems) 2. Understands the main cellular processes and recognizes the differences between eukaryotic and prokaryotic organisms 3. Explain terms related to the morphology, anatomy and physiology of living things (from the simplest unicellular to complex multicellular organisms) 4. Get to know the diversity and biodiversity of the living world - recognize and explain the differences between different systematic groups: viruses, bacteria, algae, fungi, lichens, plants and animals 5. Understands and explains the basic ecological connections of plants and animals with the environment 6. Apply the acquired knowledge about the structure and function of organisms in everyday life and predict how changes in the environment and various abiotic factors can affect them.			
Lecturer / Teaching assistant	Miloje Šundić			
Methodology	Lectures, exercises, tests, colloquiums, consultations and exams			
Plan and program of work				
Preparing week	Preparation and registration of the semester			
I week lectures	General characteristics of living organisms.			
I week exercises	Introductory exercise - characteristics of living things			
II week lectures	Cell; structure of prokaryotic and eukaryotic cells			
II week exercises	Structure of plant cells; Plant tissues			
III week lectures	Plant tissues and organs			
III week exercises	Plant tissues and organs			
IV week lectures	Animal tissues and organs			
IV week exercises	Animal cell; animal tissues and organs			
V week lectures	Reproduction, mitosis, meiosis, inheritance, chromosomes, genes			
V week exercises	The genetic basis of the cell. Chromosomes.			
VI week lectures	Physiological processes in the cell: respiration, fermentation, photosynthesis; aerobic, anaerobic.			
VI week exercises	Observing the process of photosynthesis and respiration - exp.			
VII week lectures	COLLOQUIUM I			
VII week exercises	Structure and types of viruses. Bacteriophage.			
VIII week lectures	Viruses - general properties and division			
VIII week exercises	Bacteria and cyanobacteria			
IX week lectures	Division of the living world into kingdoms. Regnum: Monera			
IX week exercises	Autotrophic and heterotrophic Protists			
X week lectures	Division of the living world into kingdoms - Regnum Protista			
X week exercises	Saprophytic and parasitic fungi			
XI week lectures	Division of the living world into kingdoms: Regnum Mycota (Fungi)			
XI week exercises	Mosses, ferns, gymnosperms and crypts			
XII week lectures	Division of the living world into kingdoms - Regnum Plantae			

XII week exercises	Invertebrates - groups					
XIII week lectures	Division of the living world into kingdoms - Regnum Animalia					
XIII week exercises	Aquatic biocenoses - plankton, benthos, nekton					
XIV week lectures	Concept of biotope, biocenosis, ecosystem. Food chains. Technosphere and pollution.					
XIV week exercises	Bioindicator methods for water quality assessment					
XV week lectures	Biological processes in water and soil					
XV week exercises	TEST					
Student workload	2 hours of lectures and 2 hours of exercises					
Per week			Per semester			
6 credits x 40/30=8 hours and 0 minuts 3 sat(a) theoretical classes 2 sat(a) practical classes 0 excercises 3 hour(s) i 0 minuts of independent work, including consultations			Classes and final exam: 8 hour(s) i 0 minuts x 16 =128 hour(s) i 0 minuts Necessary preparation before the beginning of the semester (administration, registration, certification): 8 hour(s) i 0 minuts x 2 =16 hour(s) i 0 minuts Total workload for the subject: 6 x 30=180 hour(s) Additional work for exam preparation in the preparing exam period, including taking the remedial exam from 0 to 30 hours (remaining time from the first two items to the total load for the item) 36 hour(s) i 0 minuts Workload structure: 128 hour(s) i 0 minuts (cources), 16 hour(s) i 0 minuts (preparation), 36 hour(s) i 0 minuts (additional work)			
Student obligations			Students are required to attend classes, complete and certify all exercises, take tests and colloquiums			
Consultations			Tuesday: 12-2pm and by appointment.			
Literature			Radović, I. & Petrov B. 1999. Raznovrsnost života. Prirodno-matematički fakultet, Beograd			
Examination methods			Test: 20 points - 2 colloquiums of 25 points each - 50 points - Final exam: 30 points.			
Special remarks						
Comment						
Grade:	F	E	D	C	B	A
Number of points	less than 50 points	greater than or equal to 50 points and less than 60 points	greater than or equal to 60 points and less than 70 points	greater than or equal to 70 points and less than 80 points	greater than or equal to 80 points and less than 90 points	greater than or equal to 90 points