



УНИВЕРЗИТЕТ У БАЊОЈ ЛУЦИ
UNIVERSITY OF BANJA LUKA
ПРИРОДНО-МАТЕМАТИЧКИ ФАКУЛТЕТ
FACULTY OF NATURAL SCIENCES AND MATHEMATICS



CHEMISTRY DEPARTMENT

FIRST CYCLE OF STUDY

Chemistry/Chemistry Education

Course name	Biochemistry 2			
Course code	Course status	Semester	Hours of instruction	ECTS
1C16HOS1059	required	VIII	3+3	6
Teacher(s)	Prof. Biljana Davidović-Plavšić PhD			

Prerequisite course(s)	Entry requirements
Biochemistry 1	Attended

Course goals
The aim of the course of Biochemistry 2 is to introduce students to the basics of organization, functioning and regulation of biochemical processes in living systems as well as basic metabolic processes and importance of chemistry for living organisms with basic principles of work in biochemical laboratory.

Learning outcomes
The student understands the basics of the functioning of living systems based on knowledge of basic metabolic processes (glycolysis, citric acid cycle, fatty acid oxidation). The student applies methods for isolation and purification of biological material. The student applies knowledge and methods to monitor metabolic processes.

Course content
Introduction to metabolism (anabolism, catabolism). Bioenergy. Glycolysis. Pentose phosphate pathway and gluconeogenesis. Glycogen metabolism. The citric acid cycle. Oxidative phosphorylation. Fat and fatty acid metabolism. Amino acid metabolism and urea cycle. Integration and regulation of metabolism. Expression and transmission of genetic information. Free radicals and antioxidant system of protection. Blood composition - erythrocytes as a model system for investigation of antioxidant metabolism.

<i>Experimental exercises</i>
Methods of isolation, purification and monitoring of metabolic processes in biological material.

Teaching methods
Lectures, computational and laboratory exercises, consultations.

Books and other learning materials
Ljubiša Topisirević, Đorđe Fira, Jelena Lozo: Dynamic biochemistry, University of Belgrade, Faculty of Biology (2010) B. Kukavica, B. Davidović-Plavšić, D. Kojić, J. Purać: Collection of tasks in biochemistry, Faculty of Sciences and Mathematics, University of Banja Luka (2018) Vesna Niketić and Milan Nikolić: Instructions for exercises in biochemistry of proteins and nucleic acids, Faculty of Chemistry, Belgrade (2008)

Course activities and grading method
The colloquium refers to the exercises and is a condition for taking the final exam. Test (1,2) - a written assessment from lectures, during the semester. The final exam consists of a written and an oral exam.

		Colloquium	20
Tests during the semester (1,2)	20	Final exam	60

Additional course notes
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Name of the teacher who prepared this form	Biljana Davidović-Plavšić
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