

Study Programme : BSc in Biology			
Degree level: Bachelor degree			
Course Title: Biochemistry			
Professor: dr Gordana Grubor-Lajsic, dr Danijela Kojić			
Required Course			
Number of ECTS: 8			
Prerequisites: -			
Course Objective: This course focuses on the understanding of molecular organisation and metabolic processes of the cell.			
Course Outcome: After this course students should be able to understand basic chemical processes in the cell as well as to use acquired knowledge in their further studies.			
Course Content: <i>Theoretical part</i> Lectures are organised into following sections: definition of biochemistry – chemical basis of life, the chemistry of five classes of polymeric biomolecules and their monomeric building blocks (carbohydrates, lipids, amino acids, proteins, nucleic acids); introduction to enzymology – classes of enzymes, enzyme specificity and mechanisms of action as well as the regulation of their activity; flow of genetic information - replication, transcription, translation and regulation of gene expression; bioenergetics and basic cellular metabolic processes (respiratory chain and oxidative phosphorylation, catabolism of carbohydrates, amino acids and lipids); cellular signalling and the regulation of metabolism. <i>Practical part</i> Isolation, basic reactions and chemical properties of biomolecules – analytical methods for their detection (electrophoresis, chromatography, optical methods), enzyme kinetics - Michaelis-Menten, optimal temperature and pH for enzyme activity, types of enzyme inhibition as well as detection of major metabolites in urine and blood (keton bodies, cholesterol, bilirubin, creatinin).			
Reading List: Principles of Biochemistry, A.L.Lehninger, D.L.Nelson and M.M.Cox, Worth Publishers, 2004, New York Biochemistry, D.Voet, J.G.Voet, John Wiley & Sons, 1995, New York			
Total hours:			
Lectures: 42	Practicals: 56	Other:	Student research work:
Methods of instruction:			
Assessment (maximum number of points 100)			
Requirements	points	Final exam	points
Active participation in lectures	5	Practical exam	20
Active participation in practicals	5	Oral exam	70
Test(s) or			
Pre-exam testing			
Remark:			