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| **UNIVERSITY OF NIŠ** | | | | | | |
| **Course Unit Descriptor** | | **Faculty** | | |  | |
| **GENERAL INFORMATION** | | | | | | |
| Study program | | | | **Medicine** | | |
| Study Module (if applicable) | | | |  | | |
| Course title | | | | Biochemistry | | |
| Level of study | | | | ☐Bachelor ☐ Master’s ☐ Doctoral  **☐ Academic integrated study** | | |
| Type of course | | | | **☐ Obligatory** ☐ Elective | | |
| Semester | | | | **☐ Autumn ☐Spring** | | |
| Year of study | | | | 2nd | | |
| Number of ECTS allocated | | | | 15 | | |
| Name of lecturer/lecturers | | | | Professor Dusica Pavlovic, MD. PhD, Professor Gordana Kocić MD. PhD, Professor Ivana Stojanovic, MD. PhD, Professor Tatjana Cvetkovic MD. PhD, Professor Tatjana Jevtovic-Stoimenov MD. PhD, Professor Dusan Sokolovic, MD. PhD, Ass Professor Jelena Basic, MD. PhD, Assistant Andrej Veljkovic, MD. PhD Assistant Milena Despotovic, MD. Assistant Branka Djordjevic, MD. | | |
| Teaching mode | | | | ☐**Lectures**  ☐Group tutorials ☐ Individual tutorials  ☐**Laboratory work** ☐ Project work ☐ Seminar  ☐Distance learning ☐ Blended learning ☐ Other | | |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** | | | | | | |
| To provide an introduction to:   * basic knowledge and methods of biomolecule research * mechanisms of action and measurement of activity of enzymes and their significance as biomarkers * basic characteristics of anabolic and catabolic processes in organism * pathways of cell signalling, hormones, and signal molecules * structure of nucleic acids, regulation of gene expression, and biosynthesis of proteins * composition of body fluids and biochemical function of tissues and organs | | | | | | |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** | | | | | | |
| **Enzymes:** General properties of enzymes, chemical structure and mechanism of enzymatic catalysis; **Vitamins:** General properties and significance of vitamins; Vitamin disbalance; **Metabolism of carbohydrates:** General properties, division, and significance of carbohydrates; **Metabolism of fats:** General properties and roles of fat. Digestion and resorption of fats; **Transport of substances and biologic membranes; Metabolism of proteins and amino acids.** General properties and significance of amino acids; **Biologic oxydation.** Organisation of the respiratory chain in the mitochondria; **Simple and complex proteins.** Protein structure; **Nucleoproteids.** DNA organisation: structure of chromosomes and genes, characteristics of genetic code; **Metabolism of purine and pyrimidine nucleotids; Chromoproteids.** Hemoglobin and porphyrine metabolism. Structure of hemoglobin and its significance; hemoglobinopathies; **Metabolism of water and minerals.** Significance and distribution of water within the body (dehydration and hyperhydration); **Hormone biochemistry.** Mechanism of action of hydrosoluble hormones. Secondary messengers; **Biochemistry of tissues and body fluids. Blood.** Plasma proteins (albumins, globulins, fibrinogen). | | | | | | |
| **LANGUAGE OF INSTRUCTION** | | | | | | |
| **☐Serbian (complete course) ☐ English (complete course)**  ☐ Other \_\_\_\_\_\_\_\_\_\_\_\_\_ (complete course)  ☐Serbian with English mentoring ☐Serbian with other mentoring \_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | |
| **ASSESSMENT METHODS AND CRITERIA** | | | | | | |
| **Pre exam duties** | **Points 6** | | **Final exam** | | | **points** |
| **Activity during lectures** | **4** | | **Written examination** | | |  |
| **Practical teaching** | **6** | | **Oral examination** | | | **50** |
| **Teaching colloquia** | **40** | | **OVERALL SUM** | | | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** | | | | | | |