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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  |  |
| **GENERAL INFORMATION** |
| Study program  | **PHARMACY** |
| Study Module (if applicable) |  |
| Course title | **MEDICAL BIOCHEMISTRY** |
| Level of study | [ ] Bachelor [ ]  Master’s [ ]  Doctoral**☐ Academic integrated study** |
| Type of course | [ ]  **Obligatory**  [ ]  Elective |
| Semester  |  [ ]  **Autumn** [ ] Spring |
| Year of study  | 4th |
| Number of ECTS allocated | 8 |
| Name of lecturer/lecturers | Full. Prof. Dusica Pavlovic, Full. Prof. Gordana Kocić, Full. Prof. Tatjana Cvetkovic, Assoc. Prof. Ivana Stojanovic, Assoc. Prof. Tatjana Jevtovic-Stoimenov, Assoc. Prof. Dusan Sokolovic, Ass. Prof. Jelena Basic, Ass. Andrej Veljkovic, Ass. Milena Despotovic, Ass. Branka Djordjevic |
| Teaching mode |  [x] **Lectures**  [ ] Group tutorials [ ]  Individual tutorials [x] **Laboratory work** [ ]  Project work [ ]  Seminar [ ] Distance learning [ ]  Blended learning [ ]  Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *Course aims:** understand the biochemical mechanisms in a disease onset in the context of biochemical basis of metabolic disorders;
* understanding the properties and reactivity of biomolecules at the molecular level;
* investigation and measurement of biochemical changes in human diseases;

*Course outcomes:** recognize specific disease markers and, based on them, is able to interpret the course and prognosis of a disease,
* be able to understand the methods of current genetic, proteins, lipids and carbohydrates analyses in diagnosis and therapy
* develop problem-solving capacity adopting the doctrine of evidence-based medicine
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| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| **Proteins:** Structure, division, and roles; protein life cycle, genomics and proteomics, posttranslational modification, chaperon systems, protein misfolding; Proteins of the blood; Diagnostic significance of tissue and body fluids proteins; **Enzymes:** hyperfermentemia; enzymes in clinical diagnosis and disease prognosis; **Carbohydrates:** Regulation of glycemia, organs involved in glycemia regulation: role of the liver and kidneys; disorders of carbohydrate metabolism, diabetes mellitus type 1 and type 2; therapeutical aspects; **Lipids:** metabolism of lipids in adipose tissue and regulation of synthesis and breakdown (hormones and adipocytokines); congenital metabolic disorders, obesity; blood plasma lipoproteins, separation methods, structure, functional significance; hyperlipoproteinemias; **Water, electrolytes, and acid-base status:** diagnostic significance and regulation methods; **Calcium, phosphorus, magnesium, and iron:** role and diagnostic; **Liver function examination; Kidney function examination;** **Biochemical blood analysis:** Organic and inorganic blood ingredients; blood cells; **Nutritional therapy:** metabolism in starving, biochemical surveillance of nutritional status, total parenteral nutrition, application routes, commercial preparations. |
| **LANGUAGE OF INSTRUCTION** |
| [x] **Serbian (complete course)** [x]  **English (complete course)**  [ ]  Other \_\_\_\_\_\_\_\_\_\_\_\_\_ (complete course)[ ] Serbian with English mentoring [ ] Serbian with other mentoring \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **ASSESSMENT METHODS AND CRITERIA** |
| **Pre exam duties** | **Points** | **Final exam** | **points** |
| **Activity during lectures** |  **5** | **Written examination** |  |
| **Practical teaching** | **10** | **Oral examination** | **50** |
| **Teaching colloquia** | **35** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |