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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Faculty of Medicine |
| **GENERAL INFORMATION** |
| Study program  | **INTEGRATED ACADEMIC STUDIES OF MEDICINE** |
| Study Module (if applicable) |  |
| Course title | Homeostasis of water and electrolytes |
| Level of study | [x] Bachelor [ ]  Master’s [ ]  Doctoral |
| Type of course | [ ]  Obligatory [x]  Elective |
| Semester  |  [ ]  Autumn [x] Spring |
| Year of study  | III |
| Number of ECTS allocated | 4 |
| Name of lecturer/lecturers | Mirjana Radenković, Full ProfessorSlavimir Veljković, Full ProfessorSuzana Branković, Associate ProfessorDragana Veličković, Associate ProfessorMilkica Nešić, Full ProfessorMilan Ćirić, Assistant ProfessorNenad Stojiljković, Assistant ProfessorVoja Pavlović, Assistant ProfessorPavle Ranđelović, Teaching Assistant Marija Gočmanac Ignjatović, Teaching Assistant Sonja Ilić, Teaching Assistant Milica Veljković, Teaching Assistant  |
| 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)** |
| The aim of the course is to introduce the student with the mechanisms which maintain a constant volume and content of extracellular fluid: kidney mechanism, reaction of respiratory and cardiovascular systems, voluntary mechanism, physiological roles of certain electrolytes and (K+, Na+, Ca++) and the effects caused by their imbalance, changes in the functioning of the body caused by changes in EST osmolarity, the effects of pH value changes on the functioning of the central nervous and other systems. The obtained knowledge will enable a medical doctor to: resolve the disorders caused by disturbances of water balance, recognize and treat electrolytic imbalances, recognize and regulate the disorders of electrolytic imbalance recognize and regulate the conditions which disturb the acid-base balance. |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| Theoretical teachingPhysiological balance of daily intake and excretion of water; Osmolarity of extracellular fluid and impact on cellular volume and function;Homeostasis of water and regulation of urine concentration;Regulation of Na homeostasis and extracellular fluid volume;Homeostasis of K and impact on electrical and mechanical activity of muscles;Ca and its impact on excitability and electrical and mechanical activity of cardiac, skeletal and smooth muscles;Interdependence of arterial blood pressure, osmolarity and volume of extracellular fluid;Multisystem integration of hydroelectrolyte balance maintenance (CNS, endocrine system, kidneys, cardiovascular and respiratory system, voluntary control);Acid-base balance and impact of pH changes on the function of CNS;Solutions for parenteral use.Practical teaching Body fluid compartments. Movement of fluids through human organism;Water as a solvent, reactant, and transporter;Significance of water in body temperature regulation, covering and lubrication;Balance of positive and negative charge in a solution;Impact of Ca and K on the excitability of neuromuscular apparatus;Calculation of extracellular fluid volume;Determination of minimal diuresis;Osmosis and parenteral solutions;Determination of acid-base status. |
| **LANGUAGE OF INSTRUCTION** |
| [x] Serbian (complete course) [x]  English (complete course) [ ]  Other \_\_\_\_\_\_\_\_\_\_\_\_\_ (complete course)[x] Serbian with English mentoring [ ] Serbian with other mentoring \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **ASSESSMENT METHODS AND CRITERIA** |
| **Pre exam duties** | **Points** | **Final exam** | **points** |
| **Activity during lectures** | **10** | **Written examination** | **30** |
| **Practical teaching** | **25** | **Oral examination** | **30** |
| **Teaching colloquia** | **5** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |