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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  |  |
| **GENERAL INFORMATION** |
| Study program  | **Medicine** |
| Study Module (if applicable) |  |
| Course title |  |
| Level of study | ☐Bachelor x Master’s ☐ Doctoral |
| Type of course | x Obligatory ☐ Elective |
| Semester  |  x Autumn ☐Spring |
| Year of study  | I |
| Number of ECTS allocated | 7 |
| Name of lecturer/lecturers |

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| Najman J. Stevo | redovni profesor |
| Pajović B. Snežana | redovni profesor |
| Živanov-Čurlis Z. Jelena | vanredni profesor |
| Ranđelović N. Vladimir | redovni profesor |
| Vukelić Nikolić Đ. Marija | docent |
| Jelena S. Matejić | docent |
| Živković M. Jelena | asistent |
| Najdanović G. Jelena | asistent |

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| Teaching mode |  x Lectures ☐Group tutorials ☐ Individual tutorials x Laboratory work ☐ Project work x Seminar ☐Distance learning ☐ Blended learning ☐ Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| Acquisition of knowledge of theoretical principles and practical skills in Molecular and Human GeneticsAfter the completed course, a student should be able to demonstrate: * good command of microscopy techniques
* good command of PC skills, as a learning resource
* to describe and explain the transfer of information from DNA molecules, via RNA, to proteins
* to understand the relationships of cytoplasmic and nuclear processes
* to understand the fundamental laws of heredity and to apply the knowledge in human situation.
* to understand and explain the mechanisms of genetic diversity and to be able to associate genetic with phenotypic changes.
* to apply the acquired knowledge in Molecular and Human Genetics in other biomedical courses.
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| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| *Theoretical teaching*Basics of chemistry: General and inorganic, Organic. Cell: Procaryotic & eucaryotic organization. Cytogenetics: Cell structure, Chromatin and chromosome, Cell cycle, Meiosis, Gametogenesis, Chromosomal abberations. Classical genetics: Mendelian laws of heredity, Correlated inheritance, Inheritance of sex and sex-linked traits, Classical methods in human genetics: genealogic analysis, analysis of twins. Molecular biology: DNA as hereditary material, Transfer of hereditary information in the cell, Regulation of gene expression, Mutations, Genetic recombinations, DNA molecule repair. Human genetics: Developmental genetics, Monogenic and polygenic traits in humans, Chromosomopathies, Oncogenetics, Genetics of human populations, Use of modern technologies and human genetics.*Practical teaching* Use of ITs in biomedicine. Microscope and microscopy. Nucleus. Chromatin. Chromosome. Karyotype. Mitosis. Gametogenesis. Chromosomal abberations. Seminar in cytogenetics. Basic principles of heredity (tasks): mono-, di-, and test of crossbreeding, multiple alleles, polygenic inheritance, correlated inheritance, preparation of chromosomal maps, sex-linked inheritance, genealogic trees.Isolation of DNA (demonstration). Transfer of hereditary information in the cell (tasks). Regulation of gene expression, Mutations, Genetic recombinations (tasks). Seminar in molecular biology. Genetics of human populations (tasks). Technology of rDNA (tasks). Seminar in human genetics. |
| **LANGUAGE OF INSTRUCTION** |
| xSerbian (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** | **10** | **Oral examination** | **40** |
| **Seminars** | **10** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |