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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Faculty of Sciences and MathematicsDepartment of Biology and Ecology |
| **GENERAL INFORMATION** |
| Study program  | Biology |
| Study Module (if applicable) | / |
| Course title | Molecular genetics of microorganisms |
| Level of study | [ ] Bachelor [ ]  Master’s [x]  Doctoral |
| Type of course | [ ]  Obligatory [x]  Elective |
| Semester  |  [x]  Autumn [ ] Spring |
| Year of study  | second |
| Number of ECTS allocated | 12 |
| Name of lecturer/lecturers | Nataša M. Joković |
| Teaching mode |  [x] Lectures [ ] Group tutorials [ ]  Individual tutorials [ ] Laboratory work [ ]  Project work [x]  Seminar [ ] Distance learning [ ]  Blended learning [ ]  Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| Introduction to the structural and functional organization of the microbial genomes, patterns of gene expression and regulation, basic principles of mutagenesis and the application of molecular genetics in biotechnology. |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| The organization of the microbial genomes. Mobile genetic elements in the microbial genome. Molecular mechanisms of microbial gene regulation and expression (transcriptional, translational and posttranslational regulation). The genome, proteome, metabolome. Repair systems and mutagenesis. Genetic analysis of mutants. Transfer of genetic material in microorganisms. Genetics of the phage. Application of molecular genetics in biotechnology. |
| **LANGUAGE OF INSTRUCTION** |
| [x] 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** | **Final exam** | **points** |
| **Activity during lectures** |  | **Written examination** |  |
| **Seminar** | **70** | **Oral examination** | **30** |
| **Teaching colloquia** |  | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |