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|  **UNIVERSITY OF NIŠ** |
| Course Unit Descriptor | Faculty  | Faculty of sciences and mathematics, University of Nis  |
| **GENERAL INFORMATION** |
| Study program  | Biology  |
| Study Module (if applicable) |  |
| Course title | **GENERAL AND MOLECULAR METHODS IN MICROBIOLOGY (BDI102)** |
| Level of study | ☐Bachelor ☐ Master’s ☐ Doctoral |
| Type of course | ☐ Obligatory ☐ Elective |
| Semester  |  ☐ Autumn ☐Spring |
| Year of study  | 1 |
| Number of ECTS allocated | 7 |
| Name of lecturer/lecturers | Sterilization and types of sterilization. Methods for the study of the morphology and ultrastructure of microorganisms. The growth of microorganisms in the laboratory conditions. Isolation of microorganisms from different environments. The cultivation and preservation of microorganisms. General and molecular methods for the identification of microorganisms. Distribution and activity of microorganisms in different ecosystems. Microbiological safety of food and pharmaceutical products. Molecular methods for research of ecosystem. Experimental methods for the study of the metabolism of microorganisms. Experimental methods in the genetics of microorganisms. Sequencing of the genome of the microorganism. Methods of study of the bacteriophage. |
| Teaching mode |  ☐Lectures ☐Group tutorials ☐ Individual tutorials ☐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 students with the basic principles and methods of work in the microbiology laboratory, and with the microbiological, chemical and molecular methods used in the study of microorganisms,- application of acquired knowledge for research in applied microbiology and in development of biotechnology process,- presentation and consideration of the problem of access for their solving,- independetly write of seminar and research paper. |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| - Systematization of knowledge in the field of applied microbiology and biotechnology.- Overview of the main directions and the latest research results in order to implement the microorganisms in biotechnology and environmental protection.- Expending the knowledge for research planning, selection of methods, processing, interpretation and presentation of results. |
| **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** | **Final exam** | **points** |
| **Activity during lectures** | **5** | **Written examination** | **10** |
| **Practical teaching** | **5** | **Oral examination** | **50** |
| **Teaching colloquia** | **30** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |