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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 | | | | **TOXINS OF MICROORGANISMS (BDI306)** | | |
| Level of study | | | | ☐Bachelor ☐ Master’s ☐ Doctoral | | |
| Type of course | | | | ☐ Obligatory ☐ Elective | | |
| Semester | | | | ☐ Autumn ☐Spring | | |
| Year of study | | | | 2 | | |
| Number of ECTS allocated | | | | 12 | | |
| Name of lecturer/lecturers | | | | Theory lessons: Introduction to microbial toxicology. History of toxicology. Toxic agents and their effects. The bacterial endo- and exotoxins and their impact on human health. Algae - producers of toxic compounds in aqueous medium. Mechanisms of action of algal toxins in aqueous medium. Methods and procedures for detection of algal toxins in water. The effect of algal toxins on animals and humans. Algae as test organisms in aquatic toxicology. Primary and secondary metabolites of fungi. Fungi - producers of mycotoxins. Types of mycotoxins (aflatoxin, ochratoxin, trichothecenes, zearalenone and others): producers, biosynthesis, chemical structure, toxic effects on animals and humans. The presence and role of mycotoxins in food. Mycotoxicoses.  Practical lessons: methodology for study of microbial toxins and their role in nature. Planning, selection of methods, processing, interpretation and presentation of results. | | |
| Teaching mode | | | | ☐Lectures ☐Group tutorials ☐ Individual tutorials  ☐Laboratory work ☐ Project work ☐ Seminar  ☐Distance learning ☐ Blended learning ☐ Other | | |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** | | | | | | |
| - systematising of fundamental knowledge of the toxins of microorganisms (bacterial, algal and myco-toxins);  - introduction to methods and procedures for the detection of toxins from different groups of microorganisms;  - application the acquired knowledge in biotechnology and environmental protection. | | | | | | |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** | | | | | | |
|  understanding of primary and secondary metabolism of microorganisms, production and the role of toxins in the food industry, medicine and environmental protection.   independently work in the field of microbiology toxicology: experimental work, data analysis and interpretation, writing a paper and presentation. | | | | | | |
| **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** | | | **20** |
| **Practical teaching** | **5** | | **Oral examination** | | | **40** |
| **Teaching colloquia** | **30** | | **OVERALL SUM** | | | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** | | | | | | |