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| **UNIVERSITY OF NIŠ** | | | | | | |
| **Course Unit Descriptor** | | **Faculty** | | | Faculty of Occupational Safety in Niš | |
| **GENERAL INFORMATION** | | | | | | |
| Study program | | | | Environmental Engineering | | |
| Study Module (if applicable) | | | | / | | |
| Course title | | | | Biochemical and Biotechnological Principles | | |
| Level of study | | | | ☐Bachelor ☒ Master’s ☐ Doctoral | | |
| Type of course | | | | ☐ Obligatory ☒ Elective | | |
| Semester | | | | ☐ Autumn ☒Spring | | |
| Year of study | | | | 1st | | |
| Number of ECTS allocated | | | | 4 | | |
| Name of lecturer/lecturers | | | | Marina Stojanović | | |
| Teaching mode | | | | ☒Lectures ☐Group tutorials ☐ Individual tutorials  ☒Laboratory work ☐ Project work ☐ Seminar  ☐Distance learning ☐ Blended learning ☒ Other | | |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** | | | | | | |
| *Acquiring basic knowledge about mechanisms and laws of interaction of living systems with their environment, harmful effects of the environment on living systems, and methods of biochemical engineering for the purpose of environmental quality management. After the course students will be able to monitor and interpret the impact of certain occupational and environmental factors on living systems and to use the acquired knowledge to apply biotechnological methods in environmental protection.* | | | | | | |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** | | | | | | |
| Theoretical lessons: General terms on the composition and structure of living beings; Bioelements and biomolecules; Cell and general physiology of tissues and organs; Mechanisms of interaction between organisms and the environment; Effects of environmental factors on cells and organisms; Transfer of harmful materials through living systems; Effects of pollutants on humans and life in general; Basic terms on biotechnology; Branches of biotechnology; Environmental biotechnology – grey biotechnology; Application of biotechnological processes in environmental protection; Fundamental principles of biochemical engineering; Biochemical processes in environmental protection.  Practical lessons: Introduction to the materials and equipment of the biochemistry laboratory and to biomaterials; Basic terms on qualitative and quantitative reactions in biochemistry; Discussion of laboratory data on the harmful effects of the environment on organisms; Audio‐visual presentation of biotechnological procedures; Analysis of examples of environmental improvement by means of biotechnological principles; Visits to other laboratories. | | | | | | |
| **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** | **10** | | **Written examination** | | |  |
| **Practical teaching** | **10 + 10 (term paper)** | | **Oral examination** | | | **40** |
| **Teaching colloquia** | **30 (15 + 15)** | | **OVERALL SUM** | | | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** | | | | | | |