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| Study Programme : BSc in Ecology | | | |
| Degree level: Bachelor degree | | | |
| Course Title: GENERAL MICROBIOLOGY | | | |
| Professor: Dragan Radnovic, Jelica Simeunovic | | | |
| Required/Elective Course: Required Course | | | |
| Number of ECTS: 5 | | | |
| Prerequisites: none | | | |
| Course Objective: Understanding the functional structure and metabolism of microorganisms in order to understand their diversity, importance to man and their role in natural ecosystems. | | | |
| Course Outcome: After successfully completed the pre-examination and examination commitments student can: - Understand the morphology, the basic principles about the microbial growth, the main metabolic pathways and the major strategies of obtaining energy of different groups of organisms. - Differentiate main groups of prokaryotic organisms and viruses - Understand the basic principles of applied microbiology - Correctly apply the basic principles important for work in the microbiological laboratory | | | |
| Course Content: <i>Theoretical part</i> In this course, students learn basic facts about microorganisms through the following lectures: Brief history of microbiology and its relationship with other scientific disciplines; Comparative review of morphology, functional structure and reproduction of prokaryotic organisms; bacteria, cyanobacteria, actinomycetes, viruses; Microbial nutrition, Reproduction, genetics and metabolism; Criteria for classification of microorganisms, review of main a group of prokaryotes; General characteristics of viruses, viroids and prions; Microbial mechanisms of pathogenicity; Nonspecific and specific defenses of the host; Bacteria as causative agents of human diseases, a survey of commonly used antibacterial antibiotics; Brief introduction to the ecology of microorganisms; Basic principles of biotechnology and short review of application of microorganisms in industry and environmental protection. <i>Practical part</i> Laboratory exercises provide students skills and tools that enable them to explore a vast microbial world. They learn how to handle cultures in such a way that they are not contaminated. This involves learning aseptic techniques and practicing preventive safety measures. Working with the microscopes. Practicing preparation and sterilization of microbiological media and cultivation of microorganisms. Understanding the morphology of microorganisms using simple and Gram staining. Determination of number of cultivable bacteria from the water on different microbiological media. Isolation and cultivation of bacteria and determination of their cultural characteristics using different bacteriological media. | | | |
| Reading List: 1. Petrovic O., Knezevic P., J Simeunovic. (2007): Microbiology. Script - WUS Austria, Novi Sad (In Serbian) 2. Simic, D. (1988) Microbiology 1, Naucna knjiga, Beograd. (In Serbian) 3. Gajin S., Matavulj, M., Gantar, M. (1987): Fundamentals of Microbiology, Lower plants and Fungi, Practicum. University of Novi Sad, Faculty of Science, Novi Sad. (In Serbian) 4. Govedarica M. Jarak, M. (1995): General Microbiology. University of Novi Sad, Faculty of Agriculture, Institute of Field and Vegetable Crops, Novi Sad. (in Serbian) | | | |
| Additional reading (in English): Tortora, G., Funke, B., Case, C. (2007): Microbiology. 9 th Edition. Pearson International Edition. ISBN 0321396022 | | | |
| Total hours: | | | |
| Lectures: 3 | Practicals: 2 | Other: - | Student research work: - |
| Methods of instruction: | | | |
| Assessment (maximum number of points 100) | | | |
| Requirements | points | Final exam | points |
| Active participation in lectures | 2 | Practical exam | 22 |
| Active participation in practicals | - | Oral exam | 40 |
| Test(s) or | 36 | | |
| Pre-exam testing | - | | |
| Remark: | | | |