

Study Programme : Biology				
Degree level: Master degree				
Course Title: ENVIRONMENTAL MICROBIOLOGY				
Professor: Dragan Radnović, full prof.				
Required/Elective Course: Elective Course				
Number of ECTS: 8 (eight)				
Prerequisites:				
Course Objective: The aim of this course is to introduce students with: (1) the importance of microorganisms in the environment, (2) the methodologies used for the detection of their activities, (3) as well as the possible effects that microorganisms have on human activities.				
Course Outcome: After successfully completed the pre-examination and examination commitments student should be able to: (i) understand the role of microorganisms in the environment; (2) cultivate and measure activity of microorganisms isolated from different environments.				
Course Content:				
<i>Theoretical part</i> Theoretical classes includes the following units: (a) the importance and historical development of environmental microbiology, (b) an overview of basic microbiological concepts, (v) a description of the different microhabitats in the environment including soil, water, atmospheres and extreme habitats, (g) overview of the methodologies used for detection, enumeration identification of microorganisms and determination of their activities, (d) examination of communication between microorganisms, activities and interactions with the surrounding environment (f) the use of microorganisms for remediation organic and metal contaminants, description of important contaminants of water, soil and food as well as important indicator organisms (e) the role of microorganisms in urban areas ie. correlation of microorganisms and human populations.				
<i>Practical part</i> Laboratory practices include a variety of laboratory techniques for isolation , enumeration and estimation physiological activity of microorganisms isolated from diverse environments.				
Reading List: 1. Čomić, Lj. (1999): Microbial ecology. Faculty of Science, University of Kragujevac, Serbia .ISBN 8681829335. Selected chapters.				
<i>Additional reading</i>				
1. Michael T. Madigan, Thomas D. Brock (2009): Biology of microorganisms. Pearson/Benjamin Cummings - Hardback - 1061 pages -ISBN 0132324601.				
2. Maier, R., Pepper, I., Gerba, G. (2009): Environmental microbiology. Academic Press. ISBN-978-0-12-370519-8;				
4. Madsen, Eugene (2008): Environmental microbiology. Blackwell Publishing Ltd. ISBN-13: 978-1-4051-3647-1.				
Total hours:				
Lectures: 2	Practicals 2:	Other:	Student research work: 5	
Methods of instruction: Lectures are presented using computer based presentations. Practical laboratory work include isolation, determination of number cultivable microorganisms and some of their biochemical activities.				
Assessment (maximum number of points 100)				
Requirements	points	Final exam		points
Active participation in lectures	2	Practical exam		18
Active participation in practicals		Oral exam		40
Test(s) or	40			
Pre-exam testing				

Remark: