
	UNIVERSITY OF EAST SARAJEVO Faculty of Technology					
	<i>Study program: Chemical Engineering and Technology / Environmental Engineering</i>					
	II cycle of studies		Academic year I			
Course title	MICROBIOLOGY OF WATER					
Department	Department of Food Technology - Faculty of Technology					
Course code	Status	Semester	ECTS			
TF-1-2-HIT-02-2-043-1-6-2-2	elective	I	6			
Teacher	Dragan Vujadinović, PhD, Assistant Professor					
Teaching assistant	Vesna Gojković, M.Sc, Senior Assistant					
Number of classes/ teaching workload (per week)		Individual student workload (in hours per semester)			Student workload coefficient S₀	
P	AV	LV	P	AV	LV	S₀
2	0	2	45	0	45	1.50
total teaching load , semester) 2 * 15 + 0 * 15 + 2 * 15 = 60 h			total student workload (in hours, semester) 2 * 15 * 1.50 + 0 * 15 * 1.50 + 2 * 15 * 1.50 = 90 h			
Total course workload (teaching + student): 60 + 90 = 150 hours per semester						
Learning outcomes	<p>Student will demonstrate knowledge / ability to:</p> <ol style="list-style-type: none"> 1. understand the importance of hygiene and the impact of aquatic ecosystems on maintaining human health; 2. distinguishes basic groups and the role of microorganisms in aquatic ecosystems; 3. understand the ways of contamination with the most important pathogens and know the ways to control the most important pathogens in water; 4. correctly applies the basic principles of work in the microbiological laboratory; 5. acquire knowledge about microorganisms as living components of aquatic ecosystems; 6. knows the basic technological procedures for prevention and control of the presence of microorganisms in drinking water and wastewater. 					
Conditionality						
Teaching methods	Lectures, auditory exercises, laboratory exercises					
Syllabus outline per week	<ol style="list-style-type: none"> 1. Introduction. Fundamentals of microbiology (metabolism and growth of cultures) 2. Microorganisms in the aquatic ecosystem: archaea, bacteria, protists, fungi, algae, viruses. 3. The role of microorganisms in biogeochemical cycles. 4. Public health and water microbiology. 5. Pathogens and parasites in aquatic environments. 6. Microbiological indicators of fecal contamination. 7. Microbiology of rivers, streams, lakes and marine systems. 8. Microbiological aspects of drinking water. 9. Drinking water disinfection systems. 10. Microbiology of wastewater (atmospheric, communal industrial). 11. BOD5 test, suspended solids, chemical oxygen demand (HPC), nitrogenous substances. 12. Aerobic and anaerobic wastewater treatments. 13. Activated sludge and microbiology of activated sludge. 14. Microbiological treatments of atmospheric and municipal wastewater. 15. Microbiological treatments of industrial wastewater. 					
Obligatory literature						
Author / s	Title of publication, publisher	Year	Pages (from-to)			
Đukić, D.A., Gajin, S., Matavulj, M., Mandić, L.	Water microbiology. Prosveta, Belgrade	2000	1-275			
Sanchias, AV, Allaert, VC, As-Almenar, I. VI., Sala, MN, Torres, GM	Practicum in food microbiology, University of Lleida, Catalonia-Spain, University of Banja Luka, University of Tuzla	2001	1-113			
Đukić AD, Jemcev TV	General and Industrial Microbiology, Stylos, Belgrade	2004	1-167			
Supplementary literature						
Author / s	Publication title, publisher	Year	Pages (from-to)			
McKinney, RE	Environmental Pollution Control Microbiology, Marcel Dekker, Inc., New York	2004	1-453			
Bitton, G.	Wastewater microbiology, Third Edition, John Wiley & Sons, Inc., New Jersey.	2005	1-765			

Mitchell, R., Gu, J.-D.	Environmental Microbiology, Second Edition John Wiley & Sons, Inc., Hoboken, New Jersey.	2010	1-389	
Obligations, assessment methods and grading system	Type of student work evaluation		Points	Percentage
	Pre-examination obligations			
	attendance at lectures / exercises		6	6%
	colloquium 1		20	20%
	colloquium 2		20	20%
	Laboratory exercises		24	24%
	Final exam (oral)		30	30 %
	TOTAL		100	100%
Website	www.tfzv.ues.rs.ba			
Date				