	UNIVERSITY OF EASTERN SARAJEVO Faculty of Technology ***Study program:*** *Chemical Engineering and Technology / Environmental Engineering* I cycle of studies | IV year of study	

Course title	FUNDAMENTALS OF SANITARY MICROBIOLOGY
Department	Department of Food Technology - Faculty of Technology

Course code	**Status**	**Semester**	**ECTS**
TF-1-1-HIT-04-2-078-7-4-2-1	elective	VII	4

Teacher	Dragan Vujadinović, PhD, Assistant Professor
Teaching assistant	Vesna Gojkovir,M.Sc, Assistant Professor

Number of classes/ teaching workload (per week)			**Individual workload (in hours term)**			**Student workload coefficient S_o**
P	**AV**	**LV**	**P**	**AV**	**LV**	**S_o**
2	1	1	45	22.5	22.5	1.50

total workload (in with that a, semester) 2 * 15 + 1 * 15 + 1 * 15 = 60 h	total student workload (in hours, semester) 2 * 15 * 1.50 + 1 * 15 * 1.50 + 1 * 15 * 1.50 = 90 h

Total course workload (teaching + student): 60 + 90 = 150 hours per semester

Learning outcomes	student will demonstrate knowledge / ability to: 1. understand the importance of hygiene and the impact of ecosystems on maintaining human health; 2. distinguishes basic groups and the role of microorganisms in ecosystems; 3. understand the ways of contamination with the most important pathogens and know the ways to control the most important pathogens; 4. correctly applies the basic principles of work in the microbiological laboratory; 5. knowledge of microorganisms as living components of bioprocesses;
Conditionality	
Teaching methods	Lectures, auditory exercises, laboratory exercises
Syllabus outline per week	1. Introduction. Microorganisms in the ecosystem: archaea, bacteria, protists, fungi, algae, viruses. 2. The role of microorganisms in ecological systems - producers, consumers and reducers. Extremophiles. 3. Physiological groups of microorganisms. 4. Influence of ecological factors on the growth of microorganisms - part one. 5. Influence of ecological factors on the growth of microorganisms - second part. 6. Research methods of environmental microbiology. 7. Microbial biofilms. 8. Basics of hygiene and sanitation in the function of protecting human health. 9. Microorganisms in nature: distribution, role. 10. Microbiology of surface water and drinking water. 11. Wastewater microbiology. 12. Air microbiology. 13. Soil microbiology. 14. Biogeochemical cycles of carbon, oxygen, nitrogen, sulfur, phosphorus. 15. Application of microorganisms in environmental protection.

Required 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
Šubarić, D., Babić, J., Ačkar, Đ.	Hygiene and sanitation, PTF, Osijek	2012	1-177
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

	Type of student work evaluation	Points	Percentage
Obligations, assessment methods and grading system	Pre-examination obligations		
	attendance at lectures / exercises	6	6%
	colloquium 1	20	20%
	colloquium 2	20	20%
	Laboratory exercises	14	14%
	Auditory exercises	10	10%
	Final exam (oral)	30	30%
	TOTAL	100	100%
Website	www.tfzv.ues.rs.ba		
Date			