
	UNIVERSITY OF EAST SARAJEVO Faculty of Technology Zvornik					
	Study programme: Chemical Engineering and Technology					
	Cycle I	Year III				
Course title	Food Microbiology I					
Department	Department for Food technology – Faculty of Technology Zvornik					
Course code	Course status	Semester	ECTS			
04-1-101-5	Compulsory	V	5			
Teacher	Dragan Vujadinović, PhD, associate professor					
Teaching assistant	Vesna Gojković Cvjetković, PhD, assistant professor					
Number of hours/ teaching workload (per week)		Individual student workload (in hours per semester)		Student workload coefficient S₀		
Lectures	Auditory exercises	Laboratory exercises	Lectures	Auditory exercises	Laboratory exercises	S₀
2	0	2	45	0	45	1.50
2*15+0*15+2*15=60 hours			(2*15*1.50+0*15*1.50+2*15*1.50)=90 hours			
Total course workload 60 + 90=150 hours per semester						
Learning outcomes	<p>After finishing the course, students will be able to:</p> <ol style="list-style-type: none"> understand the morphology of microorganisms, the basic laws of growth, the main metabolic pathways and the main strategies of obtaining energy of different group of organisms, distinguish basic groups of prokaryotic microorganisms and viruses, demonstrate and utilize the knowledge of basic principles of applied microbiology, correctly apply the basic principles of work in the microbiology laboratory, demonstrate and utilize the knowledge about microorganisms as living components of bioprocesses, which enables a better and more complete application of engineering disciplines in food technology. 					
Prerequisites						
Teaching methods	Lectures, laboratory exercises.					
Syllabus outline per week	<ol style="list-style-type: none"> Brief history of development and relationship of microbiology with other scientific disciplines. Basic characteristic of living things. Structural structure, chemical composition and basic life functions of a microorganism cell. Morphology and size of microorganisms and their biological significance (bacteria, fungi). The influence of external factors on microorganisms (ecology of microorganisms). Physiology of microorganisms (ferments, nutrition, respiration, reproduction, variability, biochemistry and bioenergetics). Basic specificities of bacterial genetics. Systematics of microorganisms: Classification of bacteria, overview of basic groups of bacteria, Systematics of microorganisms: Classification of fungi (molds, yeasts). Microorganisms in nature: distribution, role. Representative groups of microorganisms: Gram positive bacteria, possessing a cell wall. Gram-negative bacteria that possess a cell wall. Eubacteria that do not have a cell wall. Archaeobacteria. Viruses – general characteristics, multiplication, methods of study. Bacteriophages. DNA viruses. RNA viruses. Pathogenicity and virulence of microorganisms: pathogenicity factors, host defense mechanisms. Cultivation of microorganisms, nutrient media. Techniques and ways of conducting microbiological processes. Growth control and suppression. Isolation, preservation and improvement of the characteristics of isolated microorganisms. The role of microorganisms in the food industry. 					
Obligatory reading						
Author	Title, publisher	Year	Pages			

Đukić A.D., Jemcev T.V	Opšta i industrijska mikrobiologija, Stylos, Beograd	2004	1-167	
Šutić, D., Radin D.	Mikrobiologija, Vizartis, Beograd	2001	1-200	
Jarak, M., Govedarica M.	Mikrobiologija, Poljoprivredni fakultet, 2003 1-220 Novi Sad	2003	1-220	
Đukić, A.D., Mandić, L.G., Stanojković, A.B.	Praktikum iz mikrobiologije, Budućnost, Novi Sad	2010	1-153	
Additional reading				
Author	Title, publisher	Year	Pages	
Microbes. Info	https://www.microbes.info/resources/General%20Microbiology	-	-	
Fernandes, R.	Microbiology handbook, Fish and seafood, Leatherhead Food International Ltd and Royal Society of Chemistry, UK	2009	1-270	
Roberts, D., Greenwood, M.	Practical Food Microbiology, third edition, Blackwell Publishing Ltd, USA	2003	1-290	
Obligations, assessment methods and grading system	Type of student evaluation		Grade points	Percentage
	Pre-exam obligations			
	Attendance		6	6 %
	Mid-term test I		20	20 %
	Mid-term test II		20	20 %
	Laboratory exercise		24	24 %
	Final examination			
	Final examination (oral)		30	30 %
Total		100	100 %	
Web page	www.tfzv.ues.rs.ba			
Date	2023			