	UNIVERSITY OF EAST SARAJEVO Faculty of Technology ***Study program:*** *Chemical Engineering and Technology / Food Technology* Cycle I / III year of study	

Course title	FOOD MICROBIOLOGY
Department	Department of Food Technology - Faculty of Technology

Course code Course	**status**	**Semester**	**ECTS**
TF-1-1-HIT-04-1-103-6-7-3-3	obligatory	VI	5

Teacher	Dragan Vujadinović, PhD, Assistant Professor
Teaching assistant	Vesna Gojkovic, MSc, Senior assistant

teaching hours / teaching load (per week)			**Individual workload (in hours per semester)**			**Student workload coefficient So**
P	**AV**	**LV**	**P**	**AV**	**LV**	**S_o**
2	0	2	45	0	45	1.50

total workload (in hours, the term) 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

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

Learning outcomes	Student will show knowledge / abilities to: 1. understands the basic principles of food microbiology; 2. explain how external and internal factors in food and storage affect the survival and growth of microorganisms; 3. understands the occurrence of spoilage of food products of animal and plant origin; 4. distinguishes pathogens from non-pathogenic microorganisms in food by isolation andprocedures identification; 5. identify sources and determine pathogens as well as microorganisms that cause food spoilage; 6. describe methods of protection of foodstuffs from microbiological spoilage; 7. establish corrective procedures for the control of pathogenic microorganisms and microflora of food products.
Conditionality	
Teaching methods	Lectures, laboratory exercises
Syllabus outline per week	1. Introduction and historical development of food microbiology. Sources of microorganisms in food. Characteristics of dominant groups of microorganisms in food: bacteria, viruses, yeasts and molds. 2. Microbial ecology of food. Typical spoilage processes. Determination of microorganisms in foods. 3. Characteristics of pathogenic microorganisms important for food safety *Staphylococcus aureus, Clostridium botulinum, Listeria monocytogenes, E. Coli, Campylobacter sp., Salmonella spp.* and others. 3. Microbiological diseases originating from food: intoxications, mycotoxicosis, toxicoinfections, infections. 4. Suppression of microbiological spoilage - principles and methods of protection. Natural protection of food from microbiological spoilage. 5. Microbiological indicators of food quality and safety, standards. 6. Microbiological spoilage of basic groups of food products. Microbiology of drinking water. 7. Microbiology of fermented foods, milk and dairy products. 9. Microbiology of meat and meat products. 10. Microbiology of poultry, eggs and egg products. Microbiology of fish and seafood. 11. Microbiology of fruits and vegetables. 12. Microbiology of spices, oilseeds and cereals. 13. Microbiology of canned foods. 14. Application of starter cultures in food production. 15. Mycotoxicogenic molds and mycotoxins in food products.

Required literature

Author / s	**Title of publication, publisher**	**Year**	**Pages (from-to)**
Duraković S., Delaš F.,	Modern food microbiology - book one. University	2002	1-450

Stilinović B., Duraković L.	textbook (ed. S. Duraković). Kugler d.o.o., Zagreb.		
Duraković S., Delaš F., Duraković L	Modern food microbiology - book two. University textbook (ed. S. Duraković). Kugler d.o.o., Zagreb.	2002	1-400
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
Additional literature			
Author / s	**Publication title, publisher**	**Year**	**Pages (from-to)**
Microbes. Info	http://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

	Type of student work evaluation	**Points**	**Percentage**
Obligations, forms of knowledge assessment and grading	Pre-examination obligations		
	attendance at lectures / exercises	6	6%
	colloquium 1	20	20%
	colloquium 2	20	20%
	Laboratory exercises	24	24%
	Final exam		
	Final exam (oral)	30	30%
	TOTAL	100	100%
Website	www.tfzv.tfzv.ues.rs.ba		
date			