

COURSE DESCRIPTION CARD

Faculty of Civil Engineering and Environmental Sciences										
Field of study								Degree level and programme type		
Specialization/ diploma path								Study profile	Academic profile	
Course name	Microbiology and mycology in food industry							Course code	IS-FCEE-00202S	
								Course type	Erasmus	
Forms and number of hours of tuition	L	C	LC	P	SW	FW	S	Semester	Summer	
	15		30					No. of ECTS credits	5	
Entry requirements	Basics of biotechnology, Chemistry, Cell biology, Biochemistry									
Course objectives	Knowledge of negative and positive action of microorganisms and fungi in agri-food industry. Developing the ability to work in a microbiological laboratory; proper interpretation of test results.									
Course content	<p>Lecture: Food defects caused by changes carried out by microorganisms. Criteria and methods for assessing microbiological quality and food safety. Basic legal acts in the field of microbiological quality and food safety. Metabolism - energy sources, secondary metabolites, mycotoxins, antibiotics, plant growth regulators.</p> <p>Laboratory classes: Characteristics of microorganisms associated in agri-food industry. The influence of physico-chemical factors on the metabolism and physiology of microorganisms. Microbes and pathogenic metabolites in food. The use of microorganisms as components of industrial cultures. The use of fungi in biocontrol, food and drink production.</p>									
Teaching methods	Lecture - multimedia presentation (lectures with the use of Power Point presentation). Laboratory - laboratory classes for individual students or in small groups and preparation of reports.									
Assessment method	Lectures - written credit, Laboratory - assessment of reports, tests of preparation for exercises									
Symbol of learning outcome	Learning outcomes							Reference to the learning outcomes for the field of study		
LO1	Knows in an advanced degree the issues of microbiology and mycology									
LO2	Knows the issues related to the current state and the latest development trends in microbiology and mycology in the country and in the world.									
LO3	Is able to obtain information from literature, databases and other sources; is able to integrate information obtained,									

	interpret it, draw conclusions and formulate and justify opinions.		
L04	Is able to plan and conduct experiments in microbiology and mycology, select methods and measuring devices, interpret the obtained results and draw correct conclusions.		
L05	Can apply basic analytical techniques in microbiology and mycology.		
Symbol of learning outcome	Methods of assessing the learning outcomes	Type of tuition during which the outcome is assessed	
L01	Colloquium from lectures Colloquium from laboratory Drawing up reports on laboratory exercises	L, LC	
L02	Colloquium from lectures Colloquium from laboratory Drawing up reports on laboratory exercises	L, LC	
L03	Colloquium from lectures Colloquium from laboratory Drawing up reports on laboratory exercises	L, LC	
L04	Colloquium from lectures Colloquium from laboratory Drawing up reports on laboratory exercises	L, LC	
L05	Colloquium from lectures Colloquium from laboratory Drawing up reports on laboratory exercises	L, LC	
Student workload (in hours)		No. of hours	
Calculation	Participation in lectures	15	
	Participation in the laboratory	30	
	Preparation for laboratory exercises	10	
	Preparation of laboratory reports	15	
	Participation in consultations related to exercises and preparation for passing the exercises	15	
	Preparation for and attendance at the examination	10	
	TOTAL:	95	
Quantitative indicators		HOURS	No. of ECTS credits
Student workload – activities that require direct teacher participation		50	2,0
Student workload – practical activities		80	3,0
Basic references	Black JG. (2008). Microbiology: Principles and Explorations. 7th edition. Prentice Hall Vashishta BR and Sinha AK. (2008). Fungi. S. Chand and Company Ltd. Adams MR and Moss MO. (2008). Food Microbiology. New Age International (P) Limited Publishers, New Delhi, India.		
Supplementary	Cappucino J and Sherman N. (2010). Microbiology: A Laboratory Manual. 9th edition.		

references	Pearson Education limited.	
Organisational unit conducting the course	Department of Chemistry, Biology and Biotechnology	Date of issuing the programme
Author of the programme	Dr hab. inż. Elżbieta Wolejko	27.02.2020

L – lecture, C – classes, LC – laboratory classes, P – project, SW – specialization workshop, FW - field work, S – seminar