Polish name of the course:	Mikrobiologia żywności	ECTS	2
English name of the course:	Food Microbiology		
Name of study	Organic Agriculture and Food Production/Ekologiczne rolnictwo i produkcja żywności		

Language: English		Study level: I	
Study status: ☒full-time ☐part-time	Status of the course: ☐ basic ☒ obligatory ☒professional ☐elective	Semester:3	☒winter semester ☐spring semester
description applies from the academic year (year):		2019/2020	Catalog number : **ROL-ER-1S-03Z-07**

Coordinator of the course[5]	**Dr inż. Iwona Gientka**
Teachers :	Dr inż. Iwona Gientka, dr inż. Marek Kieliszek
Conducting unit:	Faculty of Food Science, Department of Biotechnology, Microbiology and Food Quality
Unit ordering classes :	Faculty of Agriculture and Biology
Goals and description of the course:	Students receive basic knowledge of the morphology and physiology of micro-organisms, paying particular attention to the micro-organisms that affect the quality of microbiological and health security of raw materials and agri-food products in the food chain and the significance of microorganisms in food technology and human nutrition. **Goals:** The goals of the course are to extend the students' knowledge about: the characteristic groups of microorganisms causing contamination of raw materials and various types of food products, the impact of factors affecting the microbial food quality, basic characteristics of pathogens transmitted by food and the role of beneficial microorganisms in food fermentations. **Description:** Lectures: 1. Microorganism growth in foods 2. Microbial growth and food spoilage 3. Controlling food spoilage 4. Microbiology of fermented food 5. Microorganisms as food and food amendments 6. Food-borne diseases and characteristic of water- and food-borne pathogens 7. Concepts related to food safety and production process hygiene Laboratory classes: 1. Basic microbiology techniques to evaluate the microbiota of various foods and enumerate indicator microorganisms 2. Microbiological examination of various food materials. 3. Rapid methods of microorganisms identifications (PCR). 4. Methods of elimination of microorganisms from the food environment (preservatives etc.) 5. Beneficial microorganisms and their role in food fermentations (lactic acid bacteria, acetic acid bacteria and yeast)
Didactic forms, number of hours :	W – Lecturers; hours 15 h; LC – laboratory classes; hours 15h
Teaching methods :	Lectures, laboratory experiments,
Formal requirements and initial assumptions :	Basics of biochemistry, Microbiology of soils and plants

Learning outcomes :	Knowledge: W1 – characterizes microflora of various types of food and understands the risks associated with their presence and knows methods of their elimination; analyzes the microbial processes of spoilage of raw materials and food products and analyzes factors affecting the microbial food quality; understands the beneficial microorganisms and their role in food fermentations	Skills: U1 – uses basic and rapid diagnostic methods in the assessment of microbiological quality of raw materials and various types of food	Competence: K1 – team analysis of a defined experiment
The verification way of learning outcomes :	Learning outcomes W1: written exam Learning outcome U1: written tests during lab-lessons Learninig outcomes K1: reports of defined experiments prepared in teams		

Form of documentation achieved learning outcomes:	Written exam in English, practical classes written tests
Elements and weights with the impact on the final grade:	1. Exam 50% 2. Laboratory classes 50%
Place for course:	Lectures room / laboratory room
Basic and complementary literature: 1. Microbiology Sixth Edition. Prescot LM, Harley JP, Klein DA, McGrawHill Higher Education 2. Modern Food Microbiology Seventh Edition, James M. Jay, Martin J. Loessner, David A. Golden, Food Science Text Series, Springer	
Comments	

Quantitative indicators characterizing the module / course:

Estimated total number of student work hours (contact and own work) necessary to achieve the expected learning outcomes – based on this, complete the ECTS field:	30h
The total number of ECTS points that a student obtains in classes requiring direct participation of academic teachers or other persons conducting classes (consultations, cooperation with a supervisor):	2,0 ECTS

Table of compliance of the directional learning outcomes with the effects of the course:

effect category	Learning outcomes for the course:	Reference to effects for the study program for the field of study	The impact of the course on the field effect *)
Knowlegde – W1	characterizes microflora of various types of food and understands the risks associated with their presence and knows methods of their elimination; analyzes the microbial processes of spoilage of raw materials and food products and analyzes factors affecting the microbial food quality; understands the beneficial microorganisms and their role in food fermentations	K1A_W01, K1A_W07, K1A_W13, K1A_U14, K1A_U16K1A_U17	3
Skills – U1	uses basic and rapid diagnostic methods in the assessment of microbiological quality of raw materials and various types of food	K1A_U14, K1A_U17 K_K02, K_K06	3
Copmetence – K1	team analysis of a defined experiment	K_K02	1

*)

3 - advanced and detailed,

2 - significant,

1 - basic,