1.	**Field of study**	**Biotechnology**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2019/2020 (winter term), 2020/2021 (winter term)
4.	Level of qualifications/degree	second-cycle studies
5.	Degree profile	general academic
6.	Mode of study	full-time

Module: Food microbiology and nutritional physiology

Module code: 2BT_E_29

1. Number of the ECTS credits: 4

2. Learning outcomes of the module

code	description	learning outcomes of the programme	level of competence (scale 1-5)
2BT_E_29_1	Student knows and describes the evolution and diversity of animal alimentary tract. Student is able to notice correlations between the alimentary tract endocrine and neural systems and is able to describe the symptoms of homeostasis in nourishing physiology, including appestat.	2BT_E_K01_P 2BT_E_W01_P 2BT_E_W02_P	4 4 4
2BT_E_29_2	Student is able to Defie the nutritional and calorific value of food. Student is able to calculate calorific demand, understands the processing and supplementation processes of food and fodder. Student is able to assess reliably the benefits and potential risk of GMO in food. Knows the codes and descriptions of food additives and recognizes selected examples of “E” codes.	2BT_E_W01_P 2BT_E_W02_P 2BT_E_W03_P	3 4 4
2BT_E_29_3	Student has detailed knowledge about microorganisms present in food products, sees the positive and negative consequences of its occurrence. Student is able to assess the importance of functional foods.	2BT_E_W01_P 2BT_E_W02_P 2BT_E_W03_P	3 3 4
2BT_E_29_4	Demonstrates the knowledge of modern techniques of data collection and research tools used in microbiological food control. Knows and understands the regulations on food production and its control systems, including the techniques used in the microbiological analysis of food and its processed in accordance with the recommendations of the Polish Committee for Standardization. Understands and is able to draw up a scheme of research documentation.	2BT_E_U01_P 2BT_E_U02_P 2BT_E_W02_P	4 4 4
2BT_E_29_5	Student is able to construct correctly balanced diet based on tabula data. Knowi diet-dependent diseases. Student is able to describe selected examples of dietetic treatment in pathological states.	2BT_E_U01_P 2BT_E_U02_P 2BT_E_W02_P	3 3 3
2BT_E_29_6	Responsibly assess the risks resulting from the use of research techniques in microbial laboratory and complies with the conditions of safe operation.	2BT_E_K01_P 2BT_E_K02_P	4 4

2BT_E_29_7	Student is able to assess critically the information and dietetic recommendation propagated in media and is able to find reliable and trustful information, knows the most important nutritional portals.	2BT_E_K01_P 2BT_E_K02_P	4 4

3. Module description	
Description	The aim of the course is to obtain knowledge of food microbiology and widely understood physiology of nutrition. The module allows to gain skills for isolating of microorganisms from food products and their identification, according to the Polish Committee for Standardization. The student learns factors that cause food poisoning, and take note of the HACCP system as a tool for the production of safe food.
Prerequisites	Basic knowledge of microbiology, animal physiology and biochemistry.

4. Assessment of the learning outcomes of the module

code	type	description	learning outcomes of the module
2BT_E_29_w_1	Laboratory report	Student prepares laboratory report which allows for the estimation of the student's knowledge and skills acquired on laboratory classes.	2BT_E_29_2, 2BT_E_29_3, 2BT_E_29_4, 2BT_E_29_5
2BT_E_29_w_2	continuous assessment of practical skills	Practical skills and logical reasoning assessed on all practical classes - evaluation of the student in the use of microbiological methods, laboratory equipment, evaluation of the correctness of the calculations array of experience and skills and interpretation of the results.	2BT_E_29_2, 2BT_E_29_3, 2BT_E_29_4, 2BT_E_29_5, 2BT_E_29_6
2BT_E_29_w_3	Final examination	It encompass the preparation of a short oral presentation (in groups of 2 -, 3-person) on topic chosen by the student in the field of food microbiology and physiology, nutrition and final test which will verify the student’s level of knowledge passed on the lectures.	2BT_E_29_1, 2BT_E_29_2, 2BT_E_29_3, 2BT_E_29_4, 2BT_E_29_5, 2BT_E_29_7

5. Forms of teaching

code	form of teaching			required hours of student's own work		assessment of the learning outcomes of the module
	type	description (including teaching methods)	number of hours	description	number of hours	
2BT_E_29_fs_1	lecture	Lectures on selected topics in the field of food microbiology and physiology of nourishment with audiovisual means - computer presentations illustrating the issues.	10	Expanding knowledge through self-complementary reading scientific articles (including English language) in the field indicated by the teacher.	40	2BT_E_29_w_3
2BT_E_29_fs_2	laboratory classes	Working under the supervision of the lecturer - perform experiments and calculations, discussion and documentation of observations, interpretation of the results. Discussion about the student’s presentation preceded by a lecture.	20	Preparation for the laboratory classes on the basis of literature recommended by the lecturer. Preparation of a multimedia presentation on the topic chosen by the student.	30	2BT_E_29_w_1, 2BT_E_29_w_2