1.	**Field of study**	**Biotechnology**
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2025/2026 (winter term)
4.	Level of qualifications/degree	first-cycle studies
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	**General information about the module**
Module name	**Principles of animal physiology**
Module code	1BT_23_71
Number of the ECTS credits	4
Language of instruction	
Purpose and description of the content of education	The aim of the module is to provide students with knowledge about the functions of the human body and practical skills that allow for the measurement of selected parameters of bodily functions and the correct interpretation of measured values in exercises, as well as those available from various sources. Lectures include an overview of organism functions, with particular emphasis on those that form the basis of further education in biotechnology (reproductive physiology, nutritional physiology) and those that demonstrate the integration of functions at the organism level (nervous system physiology, hormonal regulation physiology, immune system physiology, and homeostasis physiology). Laboratory: teach students how to make physiological observations and measurements, perform necessary calculations, and prepare protocols. An important aspect of the exercises is the use of virtual laboratories, videos, and animations that help to illustrate concepts that are not directly observable. Within the laboratory exercises, students also acquire the ability to independently solve research problems based on acquired knowledge and available sources under the supervision of the exercise instructor, as well as learn how to prepare and present reports (orally or in writing) on the completed project.
List of modules that must be completed before starting this module (if necessary)	not applicable

8. Learning outcomes of the module

Code	Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
K01	Critically utilizes sources of information on organism physiology, including online data. I am able to assess the credibility of information based on its source and utilize the aforementioned information in the process of self-education.	1BT_K03	5
U01	Can acquire and interpret measurement data, taking into account the limitations imposed by the object of study, the instrument, and the mathematical-statistical processing of the results.	1BT_U03	4
U02	Recognizes the connections and relationships between biotechnology and other areas of biological and natural sciences, as well as possesses the ability to pose and analyze problems based on acquired knowledge from the fields of humanities, social sciences, law, and information technology.	1BT_U11	4
W01	Possesses knowledge of basic animal physiology, meaning they can classify and describe - using correct terminology - the phenomena occurring in the bodies of animals and humans, their interrelationships, and their adaptive significance	1BT_W03	5
W02	He/she is able to utilize their knowledge and skills in the fields of chemistry, biochemistry, biophysics, genetics,	1BT_W01	4

	molecular biology, and anatomy for the accurate interpretation of physiological phenomena and their molecular basis.		
W03	Presents knowledge about products and processes used in biotechnology that have an impact on the quality of life, the development of civilization, and the natural environment	1BT_W08	5

9. Methods of conducting classes

Code	Category	Name (description)
a01	Lecture methods / expository methods	Formal lecture/ course-related lecture *a systematic course of study involving a synthetic presentation of an academic discipline; its implementation assumes a passive reception of the information provided*
a03	Lecture methods / expository methods	Description *a description of objects, phenomena, processes or people; it involves specifying the structure and characteristic features of the object, phenomenon, or process being described; it is usually accompanied by a demonstration of the described object or by its models, drawings, tables, charts, etc.; a description may take the form of an explanation, classification, justification or comparison*
a05	Lecture methods / expository methods	Explanation/clarification *explication involving the derivation of a predetermined theorem from other, already known ones, in the number of steps specified by the person teaching the course*
b02	Problem-solving methods	Lecture-discussion *transmission of content involving interaction with the lecture audience; discussion of lecture-related issues is one of its elements or constitutes its follow-up*
c06	Demonstration methods	Demonstration-imitation *a presentation of a model way of performing specific activities accompanied by a commentary; it aims at triggering imitation activities in an individual or in a group of participants observing the activities of the person teaching the course until the right habit is formed through regular exercise; the demonstration-imitation method is combined with a physical practice of activities/behaviours*
c07	Demonstration methods	Screen presentation *a presentation of synthetic image content using computer graphics, e.g., a series of slides or other multimedia forms, usually accompanied by a commentary; typical components of a screen presentation include text organized into bulleted points, charts, images and animations, sometimes sound effects or music; a multimedia illustration of course content presented in the form of a projected image*
d01	Programmed learning methods	Working with a computer *e.g., Webquest; implementation of educational tasks using electronic and digital devices, computer programs and Internet applications; the academic teacher acts as a consultant; students' work is carried out step by step according to the plan laid own by the person teaching the course and following his instructions, and proceeds towards producing the indicated results within the set deadline*
d03	Programmed learning methods	Working with another teaching tool *e.g. using websites in any way or according to the rules set by the teacher; or making use of other subject-specific tools*
e01	Practical methods	Laboratory exercise / experiment *[also conducted as fieldwork] a method of practical application of knowledge; implemented in three stages: the recognition of a problem induced by the task content, the formulation of the problem and the attempt to solve it accompanied by the assessment of the effects; the goal is to acquire skills, abilities and habits, and to consolidate the acquired knowledge so that it becomes operational; the laboratory method assumes greater independence of learners than carrying out an experiment*
e06	Practical methods	Observation

		also conducted as fieldwork; a method of watching phenomena, objects or people in a systematic/planned way in order to gain knowledge about them; perceptual separation of elements of a model action as an element of learning through imitation; a complex system of cognition based on sensory experiences
f02	Methods of self-learning	Individual work with a text *searching for and acquiring new information using textbooks and other written sources (including their digital versions); searching for texts, selecting fragments for analysis/interpretation, using other texts to solve a problem related to the studied issue*

10. Forms of teaching

Code	Name	Number of hours	Assessment of the learning outcomes of the module	Learning outcomes of the module	Methods of conducting classes
01	lecture	15	course work	K01, U02, W01, W02, W03	a01, c07, d01, f02
02	laboratory classes	30	course work	K01, U01, U02, W01, W02, W03	a03, a05, b02, c06, c07, d01, d03, e01, e06, f02

11. The student's work, apart from participation in classes, includes in particular:

Code	Category	Name (description)	Is it part of the BUNA?
a01	Preparation for classes	Search for materials and review activities necessary for class participation *reviewing literature, documentation, tools and materials as well as the specifics of the syllabus and the range of activities indicated in it as required for full participation in classes*	Yes
a02	Preparation for classes	Literature reading / analysis of source materials *reading the literature indicated in the syllabus; reviewing, organizing, analyzing and selecting source materials to be used in class*	Yes
a04	Preparation for classes	Consulting materials complementary to those indicated in the syllabus *agreeing on materials complementary to those indicated in the syllabus, supporting the implementation of tasks resulting from or necessary for class participation*	Yes
b01	Consulting the curriculum and the organization of classes	Getting acquainted with the syllabus content *reading through the syllabus and getting acquainted with its content*	No
c02	Preparation for verification of learning outcomes	Studying the literature used in and the materials produced in class *exploring the studied content, inquiring, considering, assimilating, interpreting it, or organizing knowledge obtained from the literature, documentation, instructions, scenarios, etc., used in class as well as from the notes or other materials/artifacts made in class*	No
c03	Preparation for verification of learning outcomes	Implementation of an individual or group assignment necessary for course/phase/ examination completion *a set of activities aimed at performing an assigned task, to be executed out of class, as an obligatory phase/element of the verification of the learning outcomes assigned to the course*	Yes
e01	Activities complementary to the classes	Undertaking, on one’s own initiative and individually, activities aimed at expanding the scope or depth of the teaching content, also beyond the walls of the University *a set of activities undertaken independently and on the student's own initiative, aimed at expanding the depth and scope of knowledge and skills, their revision and repetition, retention or verification, also activities carried outside the university, e.g., in a culture promoting or educational institution, a laboratory, in the open air, etc.; also self-education*	No

Information on the details of the module implementation in a given academic year can be found in the syllabus available in the USOS system: https://usosweb.us.edu.pl.