al -Farabi Kazakh National University
Faculty of Biology and Biotechnology
Department of Biodiversity and Bioresources

APPROVED
Dean of the Faculty
_____ Kurmanbayeva M.S.
«____» «_____» 2024

EDUCATIONAL AND METHODOLOGICAL COMPLEX OF DISCIPLINE

101559
Anatomy and physiology of humans and animals
Educational program «6B05105 – Genetics»

Course	2
Semester	3
Number of credits	9
Lectures	3
Seminars	3
Laboratory classes	3
IWST	6

Almaty, 2024

The educational and methodological complex of discipline was completed by Zaparina Ye., Senior Lecturer of department of Biodiversity and Bioresources and Ussipbek B.A., Senior Lecturer of department of Biophysics, Biomedicine and Neuroscience

Based on the working curriculum for the educational program «6B05105 – Genetics» of the Faculty of Biology and Biotechnology.

Confirmed and approved at the meeting of the Department of Biodiversity and Bioresources
From «15» «05» 2024, Protocol №22

Head of the Department of Biodiversity and Bioresources — Kegenova G.B.

Head of the Department of Biophysics, Biomedicine and Neuroscience — Kustubaeva A.M.

Confirmed and approved at the meeting of the methodical council of Biology and Biotechnology Faculty

From «28» «05» 2024, Protocol №11

Dean — Kurmanbayeva M.S.

SYLLABUS
Spring semester 2024-2025 academic years
on the educational program 6B05105 – Genetics

ID and name of course	**Independent work of the student (IWS)**	**Number of credits**			**General number of credits**	**Independent work of the student under the guidance of a teacher (IWST)**
		Lectures (L)	**Sem. classes (SC)**	**Prac. classes (PC)**		
101559 Anatomy and physiology of humans and animals	4	3	3	3	9	6

ACADEMIC INFORMATION ABOUT THE COURSE

Learning Format	**Cycle, component**	**Lecture types**	**Types of seminar classes**	**Form and platform final control**
Offline	Core disciplines (CD). University component (UC)	Information with visualization	Laboratory classes	Oral offline form

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ACADEMIC COURSE PRESENTATION

Purpose of the course	**Expected Learning Outcomes (LO) *** As a result of studying the discipline the undergraduate will be able to:	**Indicators of LO achievement (ID)** The undergraduate:
Discipline aims to form the ability to describe the fundamental concepts of anatomy and physiology of humans and animals, the relationship between structure and function, and the mechanisms for maintaining homeostasis of the organism. The following aspects will be considered: physiological mechanisms of vital activity of the human and animal	1. To be able to understand and explain the anatomy and physiology of the body in their unity and interconnection with the environment; the general patterns and specific features of the functioning of various body systems and their individual structural elements.	1.1 to identify knowledge of the structure and function of the body; 1.2 to demonstrate knowledge of anatomy, general patterns, and specific features of the functioning of the body's physiological systems.
		1.3 to know the theoretical, practical and applied significance of the discipline
	2. To be able to describe and justify the anatomical features of physiological systems, the mechanisms of physiological regulation of the body's vegetative functions, and the mechanisms that ensure the interaction of individual body systems and the organism as a whole with the external environment.	2.1 to explain the mechanisms of functioning of the body's physiological systems and their individual structural elements.show the main theoretical aspects of the discipline;
		2.2 to understand the neurohumoral regulation of the body's vegetative functions;
		2.3 to understand the mechanisms that ensure the interaction of individual body systems and the organism as a whole with the external environment.
	3. To be able to apply various experimental research methods to study the anatomical and physiological characteristics of the	3.1 to understand the features of the structure of cells and tissues of various systematic groups of living organisms

body; interaction of regulatory systems, mechanisms for maintaining the constancy of the internal environment of the organism; general biological patterns of the body structure of humans and animals, anthropogenesis.	body; to assess the functional states of physiological systems and the entire organism by interpreting the obtained research	3.2 to work with a microscope, interpret cytological and histological preparations
		3.3 to assess the level of functional activity of physiological systems when identifying pathological processes within them
	4. To be able to evaluate and justify the significance of anatomical and physiological studies for the objective characterization of the functional state of the organism. implement a systematic approach in searching, critically analyzing and synthesizing information on cells and tissues	4.1 to characterize the functional state of the organism based on physiological studies
		4.2 to explain the clinical significance of anatomical and physiological studies.
		4.3 to determine the causes of pathological processes in the organism, the mechanisms of their development, and clinical manifestations.
	5. To synthesize information on anatomy and physiology based on theoretical and methodological principles and techniques for assessing and describing the anatomical and physiological state of the organism.	5.1 to synthesize information about the organism in order to clarify the anatomical-physiological norm or pathological deviations.
		5.2 to describe the state of the organism for assessing the physiological condition.
Prerequisites	Cytology, Histology, and Embryology [101558], Biochemistry [1130]	
Postrequisites	Immunology [51286], Neurobiology [66148]	
Learning Resources	**Literature:** 1. Atlas of Human Anatomy (Netter Basic Science) 7th . -Elsevier Science, 2018. – 672 p. ISBN: 0323393217 2. Anatomy & Physiology. – Textbook Equity Edition, 2013. – Vol. -3. – 540 p. ISBN-10 1938168135 3. Scanlon V.S., T. Sanders Essentials of Anatomy and Physiology, 5th ed. – 2006. – 622 p. 4. Jain A.K. Textbook of Physiology/Arya publishing comp.- 2022.-V.1, 2. 5. Amerman E. Human Anatomy & Physiology/Pearson. -2018. 6. Marieb E. Anatomy & Physiology 7th Edition / Pearson.-2019. 7. Sembulingam, K. Essentials of Medical Physiology [Text] : textbook / K. Sembulingam, 2019. - 1161 p. 8. Jain A. K. Textbook of physiology [Text] : textbook. Vol. 1, 2015. - 646 p. **Research infrastructure** 1. Specialized Anatomical Laboratory 2. Specialized Physiological Laboratory 3. Medical center associated with Professor Darmeenov O. **Professional scientific databases** 1. https://meduniver.com/Medical/Physiology/; 2. Web of science 3. PubMed **Internet resources:** http://elibrary.kaznu.kz/ru/ https://study.com/academy/topic/introduction-to-plant-anatomy.html	
Academic course policy	The academic policy of the course is determined by the Academic Policy and the Policy of Academic Integrity of Al-Farabi Kazakh National University . Documents are available on the main page of IS Univer . **Integration of science and education.** The research work of students, undergraduates and doctoral students is a deepening of the educational process. It is organized directly at the departments, laboratories, scientific and design departments of the university, in student scientific and technical associations. Independent work of students at all levels of education is aimed at developing research skills and competencies based on obtaining new knowledge using modern research and information technologies. A research university teacher integrates the results of scientific activities into the topics of lectures and seminars (practical) classes, laboratory classes and into the tasks of the IWST, IWS, which are reflected in the syllabus and are responsible for the relevance of the topics of training sessions and assignments. **Attendance.** The deadline for each task is indicated in the calendar (schedule) for the implementation of the content of the course. Failure to meet deadlines results in loss of points. **Academic honesty.** Practical/laboratory classes, IWS develop the student's independence, critical thinking, and creativity. Plagiarism, forgery, the use of cheat sheets, cheating at all stages of completing tasks are unacceptable.	

	Compliance with academic honesty during the period of theoretical training and at exams, in addition to the main policies, is regulated by the "Rules for the final control" , "Instructions for the final control of the autumn / spring semester of the current academic year" , "Regulations on checking students' text documents for borrowings". Documents are available on the main page of IS Univer . **Basic principles of inclusive education.** The educational environment of the university is conceived as a safe place where there is always support and equal attitude from the teacher to all students and students to each other, regardless of gender, race / ethnicity, religious beliefs, socio-economic status, physical health of the student, etc. All people need the support and friendship of peers and fellow students. For all students, progress is more about what they can do than what they can't. Diversity enhances all aspects of life. All students, especially those with disabilities, can receive counseling assistance by phone / e- mail 8 702 46 16 800 / zaparina.elena06@gmail.com **ATTENTION!** The deadline for each task is indicated in the calendar (schedule) for the implementation of the content of the course, as well as in the MOOC. Failure to meet deadlines results in loss of points.

INFORMATION ABOUT TEACHING, LEARNING AND ASSESSMENT

Score-rating letter system of assessment of accounting for educational achievements

Grade	Digital equivalent points	points, % content	Assessment according to the traditional system
A	4.0 _	95-100	Great
A-	3.67	90-94	
B+	3.33	85-89	Fine
B	3.0	80-84	
B-	2.67	75-79	
C+	2.33	70-74	
C	2.0	65-69	Satisfactorily
C-	1.67	60-64	
D+	1.33	55-59	Unsatisfactory
D	1.0	50-54	

Assessment Methods

Criteria-based assessment is the process of correlating actual learning outcomes with expected learning outcomes based on clearly defined criteria. Based on formative and summative assessment.

Formative assessment is a type of assessment that is carried out in the course of daily learning activities. It is the current measure of progress. Provides an operational relationship between the student and the teacher. It allows you to determine the capabilities of the student, identify difficulties, help achieve the best results, timely correct the educational process for the teacher. The performance of tasks, the activity of work in the classroom during lectures, seminars, practical exercises (discussions, quizzes, debates, round tables, laboratory work, etc.) are evaluated. Acquired knowledge and competencies are assessed.

Summative assessment - type of assessment, which is carried out upon completion of the study of the section in accordance with the program of the course. Conducted 3-4 times per semester when performing IWS. This is the assessment of mastering the expected learning outcomes in relation to the descriptors. Allows you to determine and fix the level of mastering the course for a certain period. Learning outcomes are evaluated.

Formative and summative assessment	Points % content
Activity at lectures	
Work in seminar classes	45
Independent work	55
Design and creative activity	
Final control (exam)	40
TOTAL	100

Calendar (schedule) for the implementation of the content of the course. Methods of teaching and learning.

A week	Topic name	Number of hours	Max. ball
	MODULE 1 Anatomy		
1	**Lecture 1.** Position of Humans in the Animal Kingdom: Anatomical Similarities and Differences Between Humans and Animals. Levels of Organism Structure in Humans and Higher Vertebrate Animals. Osteology. Bone Joints. General Structure of the Skeleton.	2	
	Seminar 1. Historical aspects of the development of anatomy.	2	4
	Laboratory class 1. To study the structure of the axial skeleton and the skeleton of the limbs using dummies and natural bones.	2	4
2	**L2.** Muscular system.	2	
	PC 2. Main muscle groups.	2	4
	LC 2. Study the main muscle groups using dummies and atlases.	2	4
	IWST 1. Consultation on the implementation of IWS 1		
3	**L3.** Digestive and respiratory systems.	2	

	PC 3. The influence of environmental factors and lifestyle on the anatomical variability of the musculoskeletal system.	2	4
	LC 3. Study the structure of the digestive and respiratory systems using dummies and atlases	2	4
	IWS 1. Features of the structure of the musculoskeletal system of vertebrates" (by classes: amphibians, reptiles, birds, mammals		17
4	**L 4.** Urogenital system.	2	
	PC4. Features of the structure of the genitourinary system.	2	4
	LC 4. Study the structure of the genitourinary system using dummies and atlases	2	4
	IWST 2. Consultation on the implementation of IWS 1		
5	**L 5.** Cardiovascular system and organs of hematopoiesis and immunogenesis.	2	
	PC 5. Features of the structure of the cardiovascular system and organs of hematopoiesis and immunogenesis.	2	4
	LC 5. To study the structure of the cardiovascular system and organs of hematopoiesis and immunogenesis using dummies and atlases.	2	4
	IWST 3. Consultation on the implementation of IWS 2		
6	**L 6.** Endocrine and nervous systems.	2	
	PC 6. Features of the structure of the endocrine and nervous systems.	2	4
	LC 6. Study the structure of the endocrine and nervous systems using dummies and atlases.	2	4
	IWS 2 Features of the structure of the cardiovascular system of vertebrates and the immune system.		17
7	**L 7.** Sense organs.	2	
	PC 7. Features of the structure of the sense organs		4
	LC 7. Study the structure of the sense organs using dummies and atlases.	4	14
Midterm control 1			**100**
MODULE 2 Physiology			
8	**L 8.** Anatomy and physiology of excitable tissues. Physico-chemical mechanisms of formation of resting potential and action potential.	2	
	PC 8. Anatomical and electrophysiological characteristics of excitable tissues. Solving situational problems.	2	4
	LC 8. General properties of excitable tissues.	2	3
9	**L 9.** Physiology of the circulatory system.	2	
	PT 9. Study of morphological and physiological parameters of the blood system.	2	4
	LC 9. Determining blood group and Rh factor.	2	3
	IWSP 4 Consultation on the implementation of **IWS 3**		
	IWS 3 The concept of excitation. Historical information about the study of bioelectric phenomena. Works of A. Galvani, A. Matteucci, E. Dubois-Reymont (presentation).		22
10	**L 10.** Anatomy and physiology of the circulatory system. Physiology of the heart. Physiological features of the heart.	2	
	PT 10. Mechanisms of neurohumoral regulation of heart function. Phase analysis of heart cycle.	2	4
	LC 10. Determination of systolic and minute volume of blood flow.	2	3
11	**L 11.** Anatomy and physiology of respiration.	2	
	PT 11. Physiology of the respiratory center. Mechanisms of external respiration.	2	4
	LC 11. Spirometry.	2	3
	IWSP 5 Consultation on the implementation of **IWS 4**		
	IWS 4. Test tasks and practical tasks on the topics "Anatomy and Physiology of Blood and Circulation"; "Anatomy and Physiology of Respiration"		22
12	**L 12.** Digestive anatomy and physiology	2	
	PT 12. Gastrointestinal physiology. Motor function	2	4

	LC 12. Anatomical and physiological methods of studying the digestive system. Study of the digestive properties of gastric juice.	2	3
13	**L 13.** Anatomy and physiology of sensory systems. Types of higher nervous activity.	2	
	PT 13. Physiology of hearing, vestibular, vision and skin analyzers.	2	4
	LC 13. Determining the field of vision of the eye.	2	3
	IWSP 6. Make a structural and logical diagram of the read material		
14	**L 14.** Hormonal regulation of physiological functions. Anatomy and physiology of the endocrine system.	2	
	PT 14. Physiology and topography of endocrine glands.	2	4
	LC 14. Effects of adrenaline and acetylcholine on the heart	2	3
15	**L 15.** Metabolism and energy. Thermoregulation.	2	
	PT 15. Pathologies that occur in metabolic disorders. Obesity. Types of diabetes.	2	4
	LC 15. Calculation of basal metabolism according to Reed's formula, nomogram. Study of adaptation of skin temperature receptors to high and low temperatures.	2	3
Midterm control 2			**100**
Final control (exam)			**100**
TOTAL for course			**100**

Dean — Kurmanbayeva M.S.

Chair of the Academic Committee on the Quality of Teaching and Learning — Baktybayeva L.K.

Head of the Department of Biodiversity and Bioresources — Kegenova G.B.

Head of the Department of Biophysics, Biomedicine and Neuroscience — Kustubaeva A.M.

Lector of the Department of Biodiversity and Bioresources — Zaparina Ye.

Lector of the Department of Biophysics, Biomedicine and Neuroscience — Ussipbek B.A.

RUBRICATOR OF THE SUMMATIVE ASSESSMENT

CRITERIA EVALUATION OF LEARNING OUTCOMES

SIW 1: A group presentation « Features of the structure of the musculoskeletal system of vertebrates" (by classes: amphibians, reptiles, birds, mammals » (17% of 100% MC)

Criterion	"Excellent" 10-17 %	"Good" 8-10 %	"Satisfactory" 5-8 %	"Unsatisfactory" 0-15 %
Understanding the theories and concepts of the structure of the vertebrate musculoskeletal system	Deep understanding of the theories and concepts of the structure of the musculoskeletal system of vertebrates.	Understanding the theories and concepts of the structure of the musculoskeletal system of vertebrates.	Limited understanding of theories and concepts of the structure of the vertebrate musculoskeletal system.	Superficial understanding/lack of understanding of theories and concepts of the structure of the musculoskeletal system of vertebrates.
Awareness of key issues in the structure of the vertebrate musculoskeletal system	Broad knowledge of key issues in the structure of the musculoskeletal system of vertebrates. Excellently substantiates his answers, justifying them with examples.	Knowledge of the structure of the musculoskeletal system of vertebrates. Substantiates his answers, sometimes justifying them with examples. .	Limited knowledge of the structure of the musculoskeletal system of vertebrates. Limited use of evidence from empirical research.	Little awareness/incompetence of the structure of the musculoskeletal system of vertebrates. There is no logical connection in the answers, which are not supported by arguments and are not supported by examples.
Analysis of literary data on the structure of the musculoskeletal system of vertebrates	Deep analysis of literary data on the structure of the musculoskeletal system of vertebrates.	A good analysis of literary data on the structure of the musculoskeletal system of vertebrates.	A satisfactory analysis of literary data on the structure of the musculoskeletal system of vertebrates.	Poor or absent analysis of literary data on the structure of the musculoskeletal system of vertebrates.
Consideration of the main provisions, giving comparative aspects and examples, putting forward statements and conclusions.	The answer is clear, deep logically structured and directly connected with question. Maintains consistent, clearly formulated answers to the questions posed, is able to connect theory with practice, illustrate with examples, facts, and scientific research data; makes interdisciplinary connections, proposals, conclusions.	The answer is structured, there are some inaccuracies (insignificant errors) in the presentation of theoretical and practical material; the answer is less thorough, deep, valid and complete. The results and conclusions are partially summarized.	The answer is not structured; answers to questions are presented in a chaotic order, without any logical relationship. There are no results or conclusions.	There is absolutely no logical connection in the answer.
Presentation, Teamwork	Excellent, attractive presentation, excellent quality of visuals, slides, materials, excellent teamwork.	Good engagement, good quality of visuals, slides or other materials, good level of teamwork.	Satisfactory level of involvement, satisfactory quality of materials, satisfactory level of teamwork.	Low level of involvement, low quality of materials, poor level of teamwork.

SIW 2: A group presentation « Features of the structure of the cardiovascular system of vertebrates and the immune system» (17% of 100% MC)

Criterion	"Excellent" 10-17 %	"Good" 8-10 %	"Satisfactory" 5-8 %	"Unsatisfactory" 0-15 %
Understanding the theories and concepts of the vertebrate cardiovascular system and immune system	Deep understanding of theories and concepts of the vertebrate cardiovascular system and immune system Relevant and relevant links (citations) to key sources are provided.	Understanding the theories and concepts of the vertebrate cardiovascular system and immune system. Links (citations) to key sources are provided.	Limited understanding of theories and concepts of the vertebrate cardiovascular system and immune system. Limited references (citations) to key sources are provided.	Superficial understanding/lack of understanding of theories and concepts of the structure of the cardiovascular system of vertebrates and the immune system. Relevant references (citations) to key sources are not provided.
Awareness of key issues in the structure of the vertebrate cardiovascular system and immune system	Broad knowledge of key issues in the structure of the cardiovascular system of vertebrates and the immune system. Excellent justifies its answers with examples.	Knowledge of the structure of the cardiovascular system of vertebrates and the immune system. Substantiates his answers, sometimes justifying them with examples.	Limited knowledge of the structure of the vertebrate cardiovascular system and immune system. Limited number of reasoned examples for answers.	Little awareness/incompetence of the structure of the vertebrate cardiovascular system and immune system. There is no logical connection in the answers, which are not supported by arguments and are not supported by examples.
Analysis of literary data on the structure of the cardiovascular system of vertebrates and the immune system	A deep analysis of literary data on the structure of the cardiovascular system of vertebrates and the immune system.	A good analysis of the literature on the structure of the cardiovascular system of vertebrates and the immune system.	A satisfactory analysis of the literature on the structure of the cardiovascular system of vertebrates and the immune system.	Poor or absent analysis of literature data on the structure of the cardiovascular system of vertebrates and the immune system.
Consideration of the main provisions, giving comparative aspects and examples, putting forward statements and conclusions.	The answer is clear, deep logically structured and directly connected with question. Maintains consistent, clearly formulated answers to the questions posed, is able to connect theory with practice, illustrate with examples, facts, and scientific research data; makes interdisciplinary connections, proposals, conclusions.	The answer is structured, there are some inaccuracies (insignificant errors) in the presentation of theoretical and practical material; the answer is less thorough, deep, valid and complete. The results and conclusions are partially summarized.	The answer is not structured; answers to questions are presented in a chaotic order, without any logical relationship. There are no results or conclusions.	There is absolutely no logical connection in the answer.
Presentation, Teamwork	Excellent, attractive presentation, excellent quality of visuals, slides, materials, excellent teamwork.	Good engagement, good quality of visuals, slides or other materials, good level of teamwork.	Satisfactory level of involvement, satisfactory quality of materials, satisfactory level of teamwork.	Low level of involvement, low quality of materials, poor level of teamwork.

SIW 3: A group presentation «Structure, function and classification of epithelial tissues and glandular epithelia» (15% of 100% MC)

Criterion	"Excellent" 10-15 %	"Good" 8-10 %	"Satisfactory" 5-8 %	"Unsatisfactory" 0-15 %
Understanding of theories and basic principles of classifications of tissues, their structures, functions, knowledge of professional terms and definitions.	Deep understanding of theories and basic principles of classifications of tissues, their structures, functions, knowledge of professional terms and definitions. Relevant and relevant links (citations) to key sources are provided.	Understanding of theories and basic principles of classifications of tissues, their structures, functions, knowledge of professional terms and definitions. Links (citations) to key sources are provided.	Limited understanding of theories and basic principles of classifications of tissues, their structures, functions, knowledge of professional terms and definitions. Limited references (citations) to key sources are provided.	Superficial understanding / lack of understanding of theories and basic principles of classifications of tissues, their structures, functions, knowledge of professional terms and definitions. Relevant references (citations) to key sources are not provided.
Understanding the structure, functions of epithelial and glandular tissues, their role in the body, as well as the performance of their biological role	Well understanding the structure, functions of epithelial and glandular tissues, their role in the body, as well as the performance of their biological role. Excellently substantiates his answers, justifying them with examples.	Partially informing about the structure, functions of epithelial and glandular tissues, their role in the body, as well as the performance of their biological role. Substantiates his answers, sometimes justifying them with examples.	Limited understanding the structure, functions of epithelial and glandular tissues, their role in the body, as well as the performance of their biological role. Limited number of reasoned examples for answers.	No understanding the structure, functions of epithelial and glandular tissues, their role in the body, as well as the performance of their biological role
Consideration of the main provisions, giving comparative aspects and examples, putting forward statements and conclusions.	The answer is clear, deep logically structured and directly connected with question. Maintains consistent, clearly formulated answers to the questions posed, is able to connect theory with practice, illustrate with examples, facts, and scientific research data; makes interdisciplinary connections, proposals, conclusions.	The answer is structured, there are some inaccuracies (insignificant errors) in the presentation of theoretical and practical material; the answer is less thorough, deep, valid and complete. The results and conclusions are partially summarized.	The answer is not structured; answers to questions are presented in a chaotic order, without any logical relationship. There are no results or conclusions.	There is absolutely no logical connection in the answer.
Presentation, Teamwork	Excellent, attractive presentation, excellent quality of visuals, slides, materials, excellent teamwork.	Good engagement, good quality of visuals, slides or other materials, good level of teamwork.	Satisfactory level of involvement, satisfactory quality of materials, satisfactory level of teamwork.	Low level of involvement, low quality of materials, poor level of teamwork.

SIW 4: A group presentation « The bone, muscle and nervous tissues » (15% of 100% MC)

Criterion	"Excellent" 10-15 %	"Good" 8-10 %	"Satisfactory" 5-8 %	"Unsatisfactory" 0-15 %
Understanding the theories and basic principles of the relationship of tissues in the body, knowledge of professional terms and definitions.	Deep the theories and basic principles of the relationship of tissues in the body, knowledge of professional terms and definitions. Relevant and relevant links (citations) to key sources are provided.	Understanding of the theories and basic principles of the relationship of tissues in the body, knowledge of professional terms and definitions. Links (citations) to key sources are provided.	Limited understanding of the theories and basic principles of the relationship of tissues in the body, knowledge of professional terms and definitions. Limited references (citations) to key sources are provided.	Superficial understanding / lack of understanding of the theories and basic principles of the relationship of tissues in the body, knowledge of professional terms and definitions. Relevant references (citations) to key sources are not provided.
Understanding the structural organization and functions of the bone, muscle and nervous tissues.	Well Understanding the structural organization and functions of the bone, muscle and nervous tissues. Excellently substantiates his answers, justifying them with examples.	Partially understanding the structural organization and functions of the bone, muscle and nervous tissues. Substantiates his answers, sometimes justifying them with examples.	Limited understands Understanding the structural organization and functions of the bone, muscle and nervous tissues. Limited number of reasoned examples for answers.	No understanding the structural organization and functions of the bone, muscle and nervous tissues. There is no logical connection in the answers, which are not supported by arguments and are not supported by examples.
Consideration of the main provisions, giving comparative aspects and examples, putting forward statements and conclusions.	The answer is clear, deep logically structured and directly connected with question. Maintains consistent, clearly formulated answers to the questions posed, is able to connect theory with practice, illustrate with examples, facts, and scientific research data; makes interdisciplinary connections, proposals, conclusions.	The answer is structured, there are some inaccuracies (insignificant errors) in the presentation of theoretical and practical material; the answer is less thorough, deep, valid and complete. The results and conclusions are partially summarized.	The answer is not structured; answers to questions are presented in a chaotic order, without any logical relationship. There are no results or conclusions.	There is absolutely no logical connection in the answer.
Presentation, Teamwork	Excellent, attractive presentation, excellent quality of visuals, slides, materials, excellent teamwork.	Good engagement, good quality of visuals, slides or other materials, good level of teamwork.	Satisfactory level of involvement, satisfactory quality of materials, satisfactory level of teamwork.	Low level of involvement, low quality of materials, poor level of teamwork.