O.O. BOHOMOLETS NATIONAL MEDICAL UNIVERSITY

Educational and Scientific Institute of Medicine

Department of Descriptive and Clinical Anatomy

APPROVED BY

Vice-Rector for Academic and Pedagogical Work

Bogomolets National Medical University

Doctor of Medical Sciences,

Professor Oleh VLASENKO

WORKING PROGRAM
"HUMAN ANATOMY"

Educational level: Second (Master's)

Field of knowledge: I "Healthcare and Social Welfare"

Specialty: I2 "Medicine"

Educational-professional program of the

second (Master's) level of higher education

"Medicine" in the specialty I2 "Medicine"

2026–2027 academic year

UB
НМУ імені О.О.Богомольця
№854/л-1 від 05.10.2026
Власенко О.М. (Проректор з науково-педагогічної та навчальної роботи) 05.10.2026 22:44

The "Human Anatomy" working programm was developed for students pursuing the second (Master's) level of higher education in the specialty 12 "Medicine".

Program developers:
Head of Department, Doctor of Medical Sciences, Professor I.V. Dzevulska,
Associate Professor, Candidate of Medical Sciences, Associate Professor R.M. Matkivska.

The working program was discussed and approved at the meeting of the Department of Descriptive and Clinical Anatomy
Protocol No. 1 dated August 26, 2026
The working program was approved at the meeting of the Cyclic Methodological Commission on Natural Sciences
Protocol No. 1 dated August 26, 2026

Head of the Department of Descriptive and Clinical Anatomy
Doctor of Medical Sciences, Professor I.V. Dzevulska

Chair of the Cyclic Methodological Commission on Natural Sciences
Candidate of Biological Sciences,
Associate Professor L.V. Yanitska

Guarantor of the educational (educational-professional) program
Doctor of Medical Sciences, Professor V.S. Melnyk

Head of the Department of Educational and Methodological Work, Licensing, and Accreditation, PhD, Associate Professor I.I. Kucherenko

1. Description of the academic discipline OK 6 "Human Anatomy"

2.

Indicator details	Field of knowledge, specialty, educational level	Characteristics of the academic discipline: full-time
	Field of knowledge:	Compulsory

<table>
<tr><td></td><td rowspan="3">I "Healthcare and Social Welfare" Specialty:
I2 "Medicine"</td><td colspan="2">Year of study: 1st</td></tr>
<tr><td>Number of credits – 13</td><td colspan="2">Semestr</td></tr>
<tr><td>Content modules – 17
Individual research assignment</td><td>1st</td><td>2nd</td></tr>
<tr><td rowspan="11">Total number of credits/hours – 390</td><td rowspan="11">Educational level:</td><td colspan="2">Lectures (40 hours)</td></tr>
<tr><td>20 hours.</td><td>20 hours.</td></tr>
<tr><td colspan="2">Practice (192 hours)</td></tr>
<tr><td>93 hours.</td><td>99 hours.</td></tr>
<tr><td colspan="2">Seminars (8 hours)</td></tr>
<tr><td>3</td><td>5</td></tr>
<tr><td colspan="2">Individual work – 150 hours</td></tr>
<tr><td>75 hours.</td><td>75 hours.</td></tr>
<tr><td colspan="2">Individual work:</td></tr>
<tr><td colspan="2">-</td></tr>
<tr><td colspan="2">Type of control:exam</td></tr>
</table>

The aim of the academic discipline is for each student to acquire knowledge of anatomy within the framework of natural-scientific concepts regarding the structure and function of the human body as a whole, and to develop the ability to apply this knowledge in the subsequent study of other fundamental medical sciences and in medical practice.

The program competencies for the educational-professional program in the specialty 12 "Medicine"—the development of which is fostered through the study of the "Human Anatomy" discipline—include the following (OK 6: GK 1–15; PK 21, 23–25; PRN 1–4, 21, 22):

integral competence: the ability to solve complex problems, including those of a research and innovative nature, in the field of medicine; the ability to continue learning with a high degree of autonomy.

General competencies (GC).

GC 1. Ability to abstract thinking, analysis and synthesis.

GC 2. Ability to learn and master modern knowledge.

GC 3. Ability to apply knowledge in practical situations.

GC 4. Knowledge and understanding of the subject area and understanding of professional activity.

GC 5. Ability to adapt and act in a new situation.

GC 6. Ability to make informed decisions

GC 7. Ability to work in a team.

GC 8. Interpersonal skills.

GC 9. Ability to communicate in the state language both orally and in writing.

GC 10. Ability to communicate in a foreign language.

GC 11. Skills in the use of information and communication technologies.

GC 12. Certainty and perseverance regarding the tasks and responsibilities taken.

GC 13. Ability to act socially responsibly and consciously.
GC 14. Ability to act on the basis of ethical considerations (motives).
GC 15. Ability to preserve and enhance the moral, cultural, and scientific values and achievements of society based on an understanding of the history and developmental patterns of the subject area, its place within the general system of knowledge about nature and society and in the development of society, engineering, and technology; and to engage in various types and forms of physical activity for active leisure and a healthy lifestyle.

Special (professional, subject) competencies (PC)

FC 21. Ability to clearly and comprehensively communicate one's own knowledge, conclusions, and arguments regarding healthcare issues and related topics to both specialists and non-specialists, including learners.
FC 23. Ability to develop and implement scientific and applied projects in the field of healthcare.
FC 24. Adherence to ethical principles when working with patients and laboratory animals.
FC 25. Adherence to professional and academic integrity; accepting responsibility for the validity of obtained scientific results.

Program learning outcomes (PLO)

PLO 1. Possess in-depth knowledge of the structure of professional activity. Be able to perform professional activities requiring the updating and integration of knowledge. Assume responsibility for professional development and the capacity for further professional learning with a high level of autonomy.
PLO 2. Understanding and knowledge of fundamental and clinical biomedical sciences at a level sufficient to address professional tasks in the healthcare sector.
PLO 3. Specialized conceptual knowledge, including scientific advancements in healthcare, serving as a basis for conducting research and for the critical analysis of medical issues and related interdisciplinary problems.
PLO 4. Distinguish and identify key clinical symptoms and syndromes (according to List 1); establish a preliminary clinical diagnosis (according to List 2) using standard methods, patient history, physical examination findings, and knowledge of human anatomy and physiological systems.
PLO 21. Locate necessary information in professional literature, databases, and other sources; analyze, evaluate, and apply this information.
PLO 22. Apply modern digital technologies, specialized software, and statistical data analysis methods to solve complex healthcare problems.

Learning Outcome Assessment Criteria

The assessment of students' academic performance is governed by the Regulation on the "Procedure for Assessing Student Knowledge during Continuous and Final Course Assessment at O.O. Bogomolets NMU" (Protocol of the O.O. Bogomolets NMU Academic Council Meeting No. 4 dated November 28, 2023).

Continuous assessment for full-time students comprises the total points

accumulated during all classroom sessions. Each session involves the assessment of all students in the group, covering all mandatory components: tests, oral questioning, description of specimens (demonstration of practical skills), and verification of independent work. During each practical session, the instructor assigns a point score to each student's knowledge in accordance with the "Regulations on Conducting Practical Sessions and Continuous Assessment" and converts these points into a grade based on the four-point national scale ("5", "4", "3", "2"). If the arithmetic mean grade for the session is "2", this corresponds to a score of 0 points. Each topic carries equal weight throughout the course of study.

Assessment results for each component of the class—specifically tests—are graded according to the following scale:

"2" – 0 points; fewer than 12 correct test answers (less than 70%)

"3" – 12–13 correct test answers (70–79%)

"4" – 14–15 correct test answers (80–89%)

"5" – 16–18 correct test answers (90–100%)

An "EXCELLENT" grade is awarded to a student who answers 90–100% of "Format A" test questions correctly. The student answers all standardized questions regarding the current topic correctly, clearly, and comprehensively; demonstrates a solid grasp of material from previous topics (baseline knowledge); and answers questions related to the lecture course and independent study assignments. The student correctly demonstrates specimens (showing practical skills) and uses Latin terms accurately. They summarize the material and supplement their response with information from additional literature. They have recorded all Latin terms and their Ukrainian equivalents related to the lesson topic in their glossary. They have completed all tasks prescribed in the methodological guidelines for independent student work. Students may earn additional points for individual work (participation in academic competitions, conferences, or forums).

A grade of "GOOD" is awarded to a student who answers 80–89% of "Format A" test questions correctly. The student answers standardized questions on the current topic correctly (sometimes requiring clarifying questions), demonstrates knowledge of material from previous topics (baseline knowledge), and answers questions regarding the lecture course and independent study material. The student correctly demonstrates the specimen (showing practical skills) and uses Latin terms correctly. They know all Latin terms and their Ukrainian equivalents relevant to the lesson topic and have completed all tasks prescribed in the methodological guidelines for independent study.

A grade of "SATISFACTORY" is awarded to a student who answers 70–79% of "Format A" test questions correctly. The student provides incomplete answers—often requiring clarifying questions—to standardized questions on the current topic and material from previous topics (baseline knowledge), and gives imprecise or incomplete answers to questions regarding the lecture course and independent study material. They are unable to independently formulate a clear, logical answer. The student makes minor errors during their response and the demonstration of the

specimen (practical skills). They use Latin terms with errors or have incomplete knowledge of the Latin terms relevant to the current and previous lessons. The student has incompletely recorded the Latin terms and their Ukrainian equivalents for the lesson topic in their glossary and has incompletely performed the tasks prescribed in the methodological guidelines for independent study.

A grade of "UNSATISFACTORY" is assigned to a student who answers fewer than 70% of the Type A test questions. The student does not know the material for the current topic or provides inadequate answers to questions regarding it; answers are incomplete, the student cannot construct a logical response, fails to answer follow-up questions, does not understand the material's content, lacks knowledge of material from previous topics (baseline knowledge), and fails to answer questions related to the lecture course or independent study assignments. During the oral response and specimen demonstration (assessment of practical skills), the student makes significant, gross errors. The student does not know the Latin terms associated with the current and previous topics or uses them incorrectly. The student has not recorded the Latin terms and their Ukrainian equivalents for the lesson topic in their glossary. The student has not completed the tasks prescribed in the methodological guidelines for independent study.

Competency matrix

	ІК	**GК 1-15**	**РК 21**	**РФК 23-25**	PLO **1-4**	PLO **21**	PLO **22**
ОК 6	+	+	+	+	+	+	+

Matrix of correspondence between the competencies defined by the Standard and the NQF descriptors.

	Knowledge Kn1 Specialized conceptual knowledge incorporating modern scientific advancements in the field of professional activity or area of knowledge, serving as a basis for original thinking and conducting research Kn2 Critical understanding of problems within the field and at the intersection of fields of knowledge	**Skills/Competencies** S1 Specialized problem-solving skills required for conducting research and/or engaging in innovation to develop new knowledge and procedures S2 Ability to integrate knowledge and solve complex problems in broad or multidisciplinary contexts S3 Ability to solve problems in new or unfamiliar environments with incomplete or limited information, while taking into account aspects of social and ethical responsibility	**Communications** C1 Clear and unambiguous communication of one's own knowledge, conclusions, and arguments to specialists and non-specialists, including learners C2 Use of foreign languages in professional activities	**Responsibility and autonomy** AB1 Managing work or study processes that are complex, unpredictable, and require new strategic approaches AB2 Responsibility for contributing to professional knowledge and practice and/or evaluating the performance of teams and groups AB3 Ability to continue learning with a high degree of autonomy
Classification of competencies according to the NQF				
	1	**2**	**3**	**4**

General competencies				
GC1. Ability for abstract thinking, analysis, and synthesis.	Kn1	Comp1	K1	AB1
GC2. Ability to learn and master up-to-date knowledge.	Kn1	Comp 3	K2	AB3
GC3. Ability to apply knowledge in practical situations.	Kn1	Comp 2	K1	AB1
GC4. Knowledge and understanding of the subject area and professional activity.	Kn2	Comp 2	K2	AB2
GC5. Ability to adapt and act in new situations.	-	Comp 3	-	AB2
GC6. Ability to make reasoned decisions.	Kn1	Comp 3	K1	AB1
GC7. Ability to work in a team.	Kn2	Comp 3	K1	AB2
GC8. Ability for interpersonal interaction.	Kn1	Comp 3	K1	AB2
GC9. Ability to communicate in a foreign language.	-	-	K2	-
GC10. Ability to use information and communication technologies.	Kn2	Comp 3	K2	AB3
GC11. Ability to search for, process, and analyze information from various sources.	Kn2	Comp 2	K2	AB2
GC12. Determination and persistence regarding assigned tasks and assumed responsibilities.		Comp 3	-	AB3
GC13. Awareness of equal opportunities and gender issues.	Kn2	Comp 1	K1	AB1
GC14. Ability to exercise one's rights and duties as a member of society; awareness of the values of civil (free democratic) society and the necessity of its sustainable development, the rule of law, and the rights and freedoms of the	Kn2	Comp 2	K1	AB3

individual and citizen in Ukraine.				
GC 15. Ability to preserve and enhance the moral, cultural, and scientific values and achievements of society based on an understanding of the history and development patterns of the subject area, its place within the general system of knowledge about nature and society and in the development of society, engineering, and technology; and to engage in various forms of physical activity for active leisure and a healthy lifestyle.	Kn2	Comp 3	-	AB3
Specialized (professional) competencies				
PC 21. Ability to communicate one's own knowledge, conclusions, and arguments regarding healthcare issues and related matters—clearly and in a nuanced manner—to both specialists and non-specialists, including learners.	Kn **2**	Comp **3**	**K2**	**AB2**
PC 23. Ability to develop and implement scientific and applied projects in the field of healthcare.	Kn **2**	Comp **3**	**K2**	**AB3**
PC 25. Adherence to professional and academic integrity; accepting responsibility for the validity of obtained scientific results.	Kn **2**	Comp **2**	**K2**	**AB3**

Correspondence matrix of learning outcomes and competencies defined by the Standard

PLO	General competencies	Professional competencies

	GC 1	GC 2	GC 3	GC 4	GC 5	GC 6	GC 7	GC 8	GC 9	GC 10	GC 11	GC 12	GC 13	GC 14	GC 15	PC 21	PC 23	PC 25
PLO 1	+	+	+	+	+	+		+		+	+	+				+	+	+
PLO 2	+	+	+	+						+	+					+		
PLO 3			+	+		+				+	+					+	+	
PLO 4	+	+	+	+		+				+	+							
PLO 21	+	+	+	+						+	+						+	
PLO 22		+	+	+		+				+	+					+		

2. Structure of the academic discipline

№	Topic title	Lectures	Practical	Seminars	IW	Total
CHAPTER 1. ANATOMY OF THE MUSCULOSKELETAL SYSTEM						
Content Module 1. Introduction to Human Anatomy						
1	Subject matter and objectives of anatomy. Research methods in anatomy. Key modern trends in the development of anatomy.	0	0	0	0	**0**
2	Major stages in the development of anatomy: Antiquity, the Renaissance, and the 17th–19th centuries. Development of Ukrainian anatomical schools. The Kyiv anatomical school. Early stages of human embryogenesis. Theory of germ layers.	1	0	0	0	**1**
Content Module 2. Anatomy of Skeletal Bones						
3	The bone as an organ. Classification of bones. Bone development during	1	0	0	6	**7**

№	Topic title	Lectures	Practical	Seminars	IW	Total
	embryogenesis.					
4	Anatomical nomenclature. Body axes and planes.	0	1	0	0	**1**
5	Anatomy of the bones of the trunk.	0	5	0	0	**5**
6	Anatomy of the bones of the skull. The skull as a whole. External and internal cranial bases. Temporal, infratemporal, and pterygopalatine fossae.	0	12	3	3	**18**
7	Bones of the upper and lower limbs.	0	6	0	3	**9**
Content Module 3. Joints of Skeletal Bones						
8	General Arthrology. Characteristics of Bone Articulations	1	0	0	3	**4**
9	Articulations of the Bones of the Trunk and Skull	0	3	0	0	**3**
10	Articulations of the Bones of the Upper and Lower Limbs	0	6	0	6	**12**
Content Module 4. Myology						
11	The muscle as an organ. Classification and development of skeletal muscles. Accessory structures of muscles	1	0	0	3	**4**
12	Muscles and fasciae of the trunk (back, chest, abdomen)	0	6	0	3	**9**
13	Muscles and fasciae of the head and neck	0	6	0	0	**6**
14	Muscles, fasciae, and topography of the upper limb	0	6	0	0	**6**
15	Muscles, fasciae, and topography of the lower limb	0	9	0	0	**9**

№	Topic title	Lectures	Practical	Seminars	IW	Total
	Total for chapter 1	**4**	**60**	**3**	**27**	**94**
CHAPTER 2. SPLANCHNOLOGY. CENTRAL NERVOUS SYSTEM AND SENSE ORGANS. HEART. VESSELS AND NERVES OF THE HEAD, NECK, TRUNK, AND LIMBS						
Content Module 5. Anatomy of the Digestive System						
16	Introduction to splanchnology. General structural plan of the digestive system. Development of digestive organs	2	0	0	6	**8**
17	Oral cavity and its derivatives: teeth, tongue, salivary glands	0	3	0	0	**3**
18	Esophagus, stomach, small and large intestines	0	6	0	0	**6**
19	Liver and pancreas	0	2	0	0	**2**
20	Peritoneum and its derivatives: recesses, fossae, folds, omenta, canals. Relationship of abdominal organs to the peritoneum	0	1	0	3	**4**
Content Module 6. Anatomy of the Respiratory System						
21	General anatomy and embryogenesis of the respiratory system	2	0	0	3	**5**
22	Nasal cavity, larynx, trachea, bronchi, lungs, pleura, mediastinum	0	6	0	0	**6**
Content Module 7. Anatomy of the Urinary System						
23	General anatomy and embryogenesis of the urinary system organs. Developmental anomalies and variants of the urinary system organs.	2	0	0	3	**5**
24	Kidneys, ureters, urinary bladder, urethra	0	3	0	0	**3**

№	Topic title	Lectures	Practical	Seminars	IW	Total
Content Module 8. Anatomy of the Reproductive Systems						
25	General anatomy and embryogenesis of the male and female reproductive systems. Developmental variants and anomalies of male and female reproductive organs	2	0	0	6	**8**
26	Anatomy of the male reproductive organs	0	3	0	0	**3**
27	Female reproductive system. Perineum	0	3	0	0	**3**
Content Module 9. Anatomy of the Immune and Endocrine Systems						
28	General anatomy of the central and peripheral organs of the immune system	1	0	0	0	**1**
29	Anatomy of the organs of the immune system	0	2	0	6	**8**
30	Anatomy of the organs of the endocrine system	1	4	0	9	**14**
Content Module 10. Anatomy of the Spinal Cord						
31	Introduction to the CNS. General principles of reflex arc structure. Gray and white matter of the CNS Development of the CNS in ontogenesis and phylogenesis	1	0	0	0	**1**
32	External and internal structure of the spinal cord. Structure of the spinal nerve	1	3	0	0	**4**
Content Module 11. Anatomy of the Brain						
33	Embryogenesis of the brain. Anatomy of rhombencephalon derivatives	2	6	0	6	**14**
34	Anatomy of mesencephalon and prosencephalon derivatives	4	9	0	6	**19**
35	Conducting pathways of the central nervous system	1	3	0	6	**10**

№	Topic title	Lectures	Practical	Seminars	IW	Total
36	Meninges of the spinal cord and brain. Formation and circulation pathways of cerebrospinal fluid	1	3	0	3	**7**
Content Module 12. Sense Organs						
37	General characteristics of the sense organs	2	0	0	0	**2**
38	Anatomy of the eye and its structures	0	3	0	3	**6**
39	Anatomy of the organ of hearing and equilibrium	0	3	0	0	**3**
40	Anatomy of the organs of smell and taste. Skin and its derivatives	0	3	0	9	**12**
Content Module 13. Anatomy of the Cranial Nerves						
41	Classification of cranial nerves. General anatomy of the autonomic ganglia of the head	2	0	0	6	**8**
42	Anatomy of cranial nerves I–XII	0	9	0	9	**18**
Content Module 14. Anatomy of the Heart						
43	Topography, structure of the heart, valvular apparatus, conduction system, innervation. Systemic and pulmonary circulations. Fetal circulation.	2	6	0	6	**14**
Content Module 15. Vessels of the Head and Neck						
44	Артерії, вени та нерви голови та шиї	0	9	3	6	**18**
Content Module 16. Vessels of the Trunk						
45	Arteries of the thoracic, abdominal, and pelvic cavities	2	6	0	0	**8**
46	Veins of the trunk. Lymphatic trunks, ducts, and	4	9	0	9	**22**

№	Topic title	Lectures	Practical	Seminars	IW	Total
	nodes of the head, neck, trunk, and limbs					
47	Anatomy of the autonomic part of the peripheral nervous system. Visceral plexuses: craniocervical, thoracic, abdominal, and pelvic parts	2	6	0	9	**17**
Content Module 16. Vessels and Nerves of the Limbs						
48	Blood vessels of the upper limb	0	3	0,5	0	**3,5**
49	Blood vessels of the lower limb	0	3	0,5	0	**3,5**
50	Spinal nerves	2	15	1	9	**27**
	Total for Chapter 2	**36**	**132**	**5**	**123**	**296**
	TOTAL HOURS FOR THE COURSE	**40**	**192**	**8**	**150**	**390**

In-class work – 62%, independent study – 38%

3. Lecture topics for the course

№	Lecture Topic	Number of hours
1.	Introduction to anatomy. History of anatomy. Kyiv Anatomical School. General osteology.	2
2.	General arthrology. General myology. Muscles of the head, neck, trunk, limbs.	2
3.	Introduction to the splanchnology. General anatomy of the digestive system.	2
4.	General anatomy of the respiratory system. Pleura. Mediastinum.	2
5.	General anatomy of the urinary system. Anatomy of the kidney. Anatomy of the urinary tract.	2
6.	General anatomy of the male genital system. General anatomy of the female genital system. Perineum.	2
7.	General anatomy of immune organs. General anatomy of endocrine organs.	2
8.	Introduction to the CNS. Embryogenesis of spinal cord and brain.	2

	Spinal cord: Internal and external structure.	
9.	Anatomy of the rhomboid brain. Myelencephalon. Pons. Cerebellum. Rhomboid fossa. IV ventricle.	2
10.	Anatomy of the middle brain. Anatomy of the diencephalon.	2
11.	Anatomy of the prosencephalon. Basal nuclei. White matter of hemispheres of the telencephalon. Relief and localization of functions in the cortex of the hemispheres of the telencephalon. Lateral ventricles.	2
12.	Layers of the brain and spinal cord. Formation and circulation pathways of spinal fluid. Pathways of CNS.	2
13.	General anatomy of the organs of the senses. Anatomy of the organ of vision. Anatomy of the organ of hearing and balance.	2
14.	General anatomy of cranial nerves. Vegetative ganglions of the head.	2
15.	Introduction to the cardiovascular system. Anatomy of the heart.	2
16.	General anatomy of arterial vessels.	2
17.	General anatomy of venous vessels.	2
18.	Anatomy of the lymphatic system.	2
19.	General anatomy of the autonomic part of the peripheral nervous system.	2
20.	General anatomy of the peripheral nervous system.	2
	Total	**40 hours**

4. Topic Title of Seminars for the course

№	Topic Title	
1	Seminar. The skull as a whole. External and internal cranial bases. Temporal, infratemporal, and pterygopalatine fossae.	**3**
2	Seminar. Vascularization and innervation of head and neck structures. TEST.	**3**
3	Seminar: Vascularization and innervation of the trunk and the upper and lower limbs.	**2**
Total:		8

5. Topics of practical classes for the course.

	Topics of practical classes	**Hours**
1.	Anatomical nomenclature. Axes and planes of the human body. Shape and proportions of the human body. General features of the vertebrae.	3

2.	Characteristic features of the structure of the cervical, thoracic, lumbar vertebrae.	3
3.	Sacrum, coccyx, ribs, sternum.	3
4.	Primary and secondary nuclei of ossification. Anomalies of bone development.	3
5.	Frontal, parietal, occipital, ethmoid bones.	3
6.	Sphenoid, temporal bone. Temporal bone canals.	3
7.	Bones of the facial skull.	**3**
8.	Eye socket, bony nasal cavity. Bony palate.	3
9.	Seminar. Skull as a whole. External and internal base of the skull. Temporal, infratemporal, pterygopalatine fossae.	3
10.	Bones of the upper limb.	3
11.	Bones of the lower limb.	3
12.	Connection of the bones of the trunk. Connection of the bones of the skull.	3
13.	Joints of the upper limb.	3
14.	Joints of the lower limb.	3
15.	Head muscles. Diaphragm.	3
16.	Neck muscles. Topography of the neck, fascia and cellular spaces.	3
17.	Upper limb muscles: pectoral girdle muscles, shoulder muscles, forearm muscles.	3
18.	Hand muscles. Upper limb fascia. Topography of the upper limb.	3
19.	Lower limb muscles: pelvic girdle muscles, thigh muscles, calf muscles.	3
20.	Foot muscles. Lower limb fascia and lower limb topography.	3
21.	Summary of the educational material “Anatomy of the musculoskeletal system”. Visualization of anatomical structures using modern methods of clinical research.	**3**
22.	Anatomy of the oral cavity. Palate. Anatomy of the tongue.	3
23.	Anatomy of the oral glands. Teeth.	3
24.	Anatomy of the pharynx and esophagus. General anatomy of the abdominal cavity. Regions of the anterior abdominal wall. Anatomy of the stomach.	3
25.	Anatomy of the small and large intestines.	3
26.	Anatomy of the liver and pancreas.	3

27.	Anatomy of the peritoneum.	3
28.	Anatomy of the external nose, nasal cavity, and larynx.	3
29.	Anatomy of the trachea, main bronchi, and lungs. Pleura. Mediastinum.	3
30.	Anatomy of the urinary system organs (kidneys, ureters, urinary bladder, urethra).	3
31.	Anatomy of the male reproductive organs.	3
32.	Anatomy of the female reproductive organs. Perineum. Mammary glands.	3
33.	Introduction to the CNS. Anatomy of the spinal cord: external and internal structure. Developmental anomalies.	
34.	Embryogenesis of the brain. Medulla oblongata, pons.	3
35.	Cerebellum. Fourth ventricle. Rhomboid fossa.	3
36.	Anatomy of the midbrain and diencephalon.	3
37.	Olfactory brain. Basal nuclei. Lateral ventricles.	3
38.	White matter of the cerebral hemispheres. Surface features of the cerebral cortex. Functional localization in the cerebral cortex.	3
39.	Meninges of the brain and spinal cord. Formation and circulation pathways of cerebrospinal fluid.	3
40.	Conducting pathways of the CNS.	3
41.	Anatomy of the eye and its structures.	3
42.	Anatomy of the ear. Auditory and vestibular pathways.	3
43.	Summary of the study material: "Central nervous system and sense organs." Visualization of anatomical structures using modern clinical examination methods. TEST ASSESSMENT	**3**
44.	Cranial nerve pairs I, II, III, IV, VI, and VIII.	3
45.	Cranial nerve pairs V, VII, and IX. Autonomic ganglia of the head.	3
46.	Cranial nerve pairs X, XI, and XII.	
47.	Cardiac anatomy: development, topography, anatomy of the chambers, and structure of the heart wall. Systemic and pulmonary circulations. Fetal circulation.	3
48.	Cardiac anatomy: blood supply and innervation of the heart; pericardium. Projection of heart borders and valves onto the anterior chest wall; sites for optimal auscultation of valve function.	**3**

49.	The aorta and its parts. Branches of the aortic arch. Common and external carotid arteries.	3
50.	Internal carotid artery and subclavian arteries.	3
51.	Veins of the head and neck. Internal jugular vein: intracranial and extracranial tributaries. External jugular vein. Anterior jugular vein. Superior vena cava: roots and tributaries. Brachiocephalic veins. Lymph nodes of the head and neck: classification.	3
52.	Seminar. Vascularization and innervation of head and neck organs. TEST.	**3**
53.	The aorta and its parts. Thoracic aorta: topography. Branches of the thoracic aorta and their areas of supply. Internal thoracic artery (branch of the subclavian artery): topography, branches, and areas of supply. Intra-systemic and inter-systemic arterial anastomoses.	3
54.	Abdominal aorta: topography and classification of branches. Pelvic arteries. Intrasystemic arterial anastomoses.	3
55.	Hepatic portal vein: topography, roots, tributaries, and areas of venous drainage. Branching of the hepatic portal vein within the liver. Intrasystemic and intersystemic venous anastomoses.	3
56.	Lymphatic ducts: thoracic duct, right lymphatic duct. Roots, topography, and sites of entry into the venous system.	
57.	Lymphatic vessels and nodes of the trunk.	3
58.	Autonomic division of the peripheral nervous system.	3
59.	Visceral plexuses: craniocervical, thoracic, abdominal, and pelvic parts.	3
60.	Arteries, veins, lymphatic vessels, and nodes of the upper limb: classification, topography, branches, areas of blood supply, and anastomoses.	3
61.	Arteries, veins, lymphatic vessels, and nodes of the lower limb: classification, topography, branches, areas of blood supply, and anastomoses.	3
62.	Spinal nerves. Cervical plexus.	3
63.	Brachial plexus.	3
64.	Thoracic nerves. Lumbar plexus.	3
65.	Sacral plexus. Coccygeal plexus.	3
66.	Seminar: Vascularization and innervation of the trunk and the upper and lower limbs.	**2**
67.	Assessment of practical skills. FINAL TEST.	**3**
Total:		**200**

6. Topics of laboratory sessions for the course (-)6. Independent Work

7. Organization of Students' Independent Work

Students carry out independent work systematically in preparation for every practical, review, and final class, in accordance with the thematic plan for the "Human Anatomy" course. Students must master the core concepts and terminology related to the lesson topic, study the issues outlined in the methodological guidelines, and complete the assigned independent work tasks.

When preparing for each practical class, students independently study the department's methodological materials (available on the Likar_NMU educational platform):

 relevance of the topic;

 specific objectives aimed at developing student competencies in accordance with the approved "Human Anatomy" course curriculum and the study plan (developed based on the Higher Education Standard for the second (Master's) level of higher education);

 fundamental questions necessary for mastering the course material (Item 1);

 the list of key anatomical terms, parameters, and characteristics to be mastered in preparation for the practical class (presented in the methodological materials in Ukrainian, English, and Latin at https://anatom.ua/nomina-anatomica/ (Item 2.1)).

 questions for assessing students' initial level of knowledge (Section 2.2);

 review questions for assessing the final level of knowledge (Section 2.3);

 standardized practical skills (Section 2.4);

 content of the study material for the topic (Section 3);

 illustrations, diagrams, and drawings involving the labeling of anatomical structures relevant to the practical session topic (Sections 4.1, 4.2);

 30 "KROK-1" Format A test items (clinically oriented situational

tasks/clinical vignettes with a single correct answer) corresponding to the practical session topic (Section 4.3);

During preparation for each practical class, the student independently completes practical tasks found in the manual *Human Anatomy: Monitoring Student Independent Preparation for Practical Classes*:

- working with illustrations, diagrams, and drawings by coloring and labeling anatomical structures relevant to the practical class topic;
- identifying anatomical structures visualized through modern clinical imaging methods, such as MRI, CT, and X-ray scans.

In preparation for review and final assessment classes—and to systematize, consolidate, and verify the mastery of course material within a specific content module—the student works through:

- the comprehensive bank of test questions recommended by the department for independent study and hosted on the *Likar_NMU* educational platform;
- the module "Visualization of Anatomical Structures via Modern Clinical Imaging Methods" (computed tomography (CT), magnetic resonance imaging (MRI), radiography, and angiography), in accordance with the assigned independent study tasks.

Electronic resources:https://likar.nmu.kyiv.ua./
www.anatom.ua
https://nmuofficial.com/zagalni-vidomosti/kafedri/kafedra-anatomyy-cheloveka/informatsiya-dlya-studentiv-6/

List of topics recommended for independent study

Questions for independent study	**Hours**

I. Anatomy of the musculoskeletal system	27
• Ossification centers of the skeleton. Age-related characteristics and developmental anomalies of bones. • Radiographic anatomy of bones and joints. Visualization characteristics of osteoarticular structures using modern clinical imaging methods. • Skull base: foramina, canals, and fissures, and their contents. Pathways for the spread of purulent-inflammatory processes. • General arthrology. Characteristics of bone joint types. Structural features and functional significance of various types of joints. • Topography of the neck. Fasciae, interfascial spaces, and connective tissue spaces. Pathways for the spread of purulent-inflammatory processes. • Musculofascial compartments, canals, and topographic structures of the upper and lower limbs. Anatomical pathways for the spread of pathological processes. • Inguinal canal. Weak points of the anterior abdominal wall. Anatomical prerequisites for hernia formation. • Diaphragm: openings and weak points. Pathways for the spread of pathological processes between the thoracic and abdominal cavities.	
II. Splanchnology	36
• Anatomical variations in the position of the vermiform appendix. Topographic-anatomical features and clinical significance. • Peritoneum: ligaments, folds, mesenteries, omenta, recesses, pouches, and spaces. Pathways for the spread of pathological processes within the abdominal cavity.	

• Topographic-anatomical features of abdominal organs. Pathways for the spread of purulent-inflammatory processes and pathological fluid. • Liver and biliary tract. Bile drainage pathways and anatomical factors influencing the spread of pathological processes. • Segmental structure of the lungs. Bronchopulmonary segments and their clinical significance. • Pleura: pleural recesses and their clinical significance. Topographic-anatomical relationships between the pleura and thoracic organs. • Mediastinum: divisions, contents, and topographic-anatomical relationships. Pathways for the spread of pathological processes between the thoracic cavity, mediastinum, and neck. • Kidney: segmental structure and positional variations. Developmental anomalies. • Ureter: physiological constrictions and their clinical significance. Anatomical factors predisposing to calculus retention. • Topographic-anatomical relationships of pelvic organs. Connective tissue spaces and pathways for the spread of purulent-inflammatory processes. • Prostate gland: topography, fascial and connective tissue structures, clinical significance. • Male genital tract: topography and sperm transport pathway. • Female reproductive organs: topographic-anatomical relationships and pathways of pathological process spread. • Perineum: fasciae, fascial spaces, and topographic-anatomical features of the male and female perineum; pathways of spread for purulent-inflammatory processes.	

• Mammary gland: topographic-anatomical relationships and clinically significant structural features. • Imaging anatomy of thoracic, abdominal, and pelvic organs: radiography, CT, and MRT.	
III. Central nervous system and sense organs P SEP	3 3
• Ventricular system of the brain. Formation, circulation, and outflow of cerebrospinal fluid. Anatomical prerequisites for the development of hydrocephalus. • Meninges of the brain and spinal cord. Intermeningeal spaces and subarachnoid cisterns. Pathways of spread for pathological processes. • Venous sinuses of the dura mater. Venous anastomoses and pathways for the spread of infection from the facial region to the cranial cavity. • Conducting pathways of the central nervous system. Topography, functional significance, and principles of topical diagnosis of lesions. • Functional localization in the cerebral cortex. Clinical significance of functional localization. • Internal capsule: topography, structure, and functional significance. Clinical manifestations of lesions affecting it. • CT and MRI anatomy of the brain. Visualization of the ventricular system, meninges, cisterns, and major brain structures. • Eye: topographic-anatomical relationships of orbital structures. Pathways of spread for pathological processes from the orbit and adjacent areas.	

• Visual analyzer: conducting pathway, its segments, and principles of topical diagnosis of lesions. • Ear: topographic-anatomical relationships of the external, middle, and inner ear. Pathways of spread for pathological processes. • Auditory and vestibular analyzers: conducting pathways and principles of topical diagnosis of lesions affecting them. • Gustatory analyzer: receptor apparatus, conducting pathway, and innervation of the tongue. • Olfactory analyzer: receptor apparatus, conducting pathway, and its connections with other brain structures. • Somatosensory system: types of general sensation, receptor apparatus, and conducting pathways. Principles of topical diagnosis of sensory disturbances. • Skin and its derivatives. Receptor apparatus of the skin, types of cutaneous sensation, and its innervation. • Imaging anatomy of sensory organs: CT and MRT anatomy of the orbit, the organ of hearing, and adjacent structures.	
IV. Heart and vessels	30
• Blood supply to the heart. Coronary arteries, their main branches, branching patterns, and anastomoses. Clinical significance of coronary circulation. • Features of fetal circulation. • Venous drainage of the heart. Coronary sinus, its tributaries, and venous drainage pathways. • Lymphatic drainage of the heart. Lymphatic vessels and regional lymph nodes. • Cardiac conduction system. Topography, blood supply, and clinical significance.	

• Innervation of the heart. Sympathetic and parasympathetic innervation; cardiac plexus. • Projection of heart borders and valves onto the anterior chest wall. Topographic basis for valve auscultation. • Arterial anastomoses and collateral circulation. Intrasystemic and intersystemic anastomoses; their clinical significance. • Blood supply to the brain. Cerebral arterial circle (Circle of Willis) and collateral circulation pathways. • Arterial anastomoses of the upper and lower limbs. Collateral blood supply pathways and their clinical significance. • Branching patterns of major arteries. Clinical significance of vascular anatomical variations. • Venous anastomoses. Cavocaval and portocaval anastomoses; their topography and clinical significance. • Superficial and deep veins of the limbs. Venous anastomoses and collateral venous drainage pathways. • Venous sinuses of the dura mater and venous anastomoses of the head. Routes of infection spread from the facial region to the cranial cavity. • Lymphatic ducts: thoracic duct and right lymphatic duct. Topography, roots, and sites of entry into the venous system. • Regional lymph nodes and lymphatic drainage pathways from major body regions and organs. • Lymphatic drainage from the head and neck, thorax, abdominal cavity, and limbs. Clinical significance of regional lymph nodes. • Angiographic anatomy of vessels. Visualization characteristics of arteries, veins, and the lymphatic system using modern clinical imaging methods.	

V. Peripheral nervous system	24
• Topography of cranial nerves. Canals, foramina, and fissures of the skull base as pathways for cranial nerves. • Areas of innervation and clinical significance of cranial nerve lesions. Principles of topical diagnosis. • Autonomic ganglia of the head: topography, roots, and areas of postganglionic innervation. • Interconnections of cranial nerves with autonomic ganglia and plexuses. • Spinal nerve: formation, branches, areas of innervation, and principles of nerve plexus formation. • Cervical plexus: topography, major nerves, areas of innervation, and clinical significance. • Brachial plexus: topography, formation, major nerves, and their pathways. Clinical significance of lesions. • Lumbar and sacral plexuses: topography, major nerves, areas of innervation, and clinical significance. • Topographic-anatomical relationships of peripheral nerves with muscles, fasciae, blood vessels, and bony structures. Anatomical sites of potential nerve compression and injury. • Nerves of the upper and lower limbs: topography, areas of innervation, and clinically significant sites of injury. • Autonomic division of the peripheral nervous system: sympathetic, parasympathetic, and enteric components. Principles of autonomic innervation organization. • Autonomic ganglia and nerve plexuses: topography, connections, and functional significance. • Visceral nerve plexuses of the thoracic,	

abdominal, and pelvic cavities. Topographic-anatomical relationships with the organs. • Sympathetic trunk: topography, ganglia, and connections with peripheral nerves and visceral plexuses. • Parasympathetic innervation of organs. Cranial and sacral parts of the parasympathetic division. • Visualization of peripheral nerves using modern clinical imaging methods. Ultrasound and MRI anatomy of nerves and nerve plexuses.	
Total	**150**

8. Individual Assignments

Individual assignments are creative and exploratory in nature; they foster the development of students' cognitive engagement and are carried out either independently or under the guidance of an instructor. These are supplementary tasks that allow students to deepen their knowledge of the discipline and earn extra points—for example, by presenting at a conference, publishing an abstract related to the department's research topic, or winning a prize in a subject-specific Olympiad at the university or national level.

The maximum number of points awarded to students for individual work is 6.8.

Teaching methods: verbal, visual, practical, analytical, inductive, semi-inquiry, deductive, explanatory-demonstrative, reproductive, and research-based.

9. Assessment

Assessment of student performance in the "Human Anatomy" course is conducted in accordance with the requirements of the course syllabus and the instructions regarding the student assessment system within the credit-module organization of the educational process, as approved by the Ministry of Health of Ukraine.

Point allocation and distribution scheme

Assessment of student performance in the "Human Anatomy" course is conducted in accordance with the requirements of the course syllabus and the instructions regarding the student assessment system within the credit-module

organization of the educational process, as approved by the Ministry of Health of Ukraine.

The maximum number of points a student can earn for ongoing coursework is 80. This is calculated by multiplying the points corresponding to a grade of "5" by the number of practical classes and adding points for individual work.

The minimum number of points a student can earn for ongoing coursework in the discipline is calculated by multiplying the points corresponding to a grade of "3" by the number of practical classes.

At each practical class, the student's performance is assessed as follows:

"5" – 1.1 points (100%)

"4" – 0.9 points (80%)

"3" – 0.8 points (70%)

"2" – 0 points

The maximum number of points for a student's ongoing academic performance is 80 [number of practical classes in the course: 67] = 74 points (67 practical classes × 1.1 points) + 6 points for individual work.

The number of points for a student's ongoing academic performance (assuming a grade of "3" is received in every class) is 53.6 points [number of practical classes in the course: 67] = 67 × 0.8.

Distribution of points awarded to students during ongoing assessment:

Tradicional grade	**Points**	**Conversion into points**			
		Test control	**Oral questioning**	**Practical skells**	**ISW***
«5»	1,1	0,22	0,33	0,33	0,22
«4»	0,9	0,18	0,27	0,27	0,18
«3»	0,8	0,16	0,24	0,24	0,16
«2»	0	0	0	0	0

Assessment of Student Independent Work

Material designated for independent study—assigned in conjunction with a practical class—is evaluated during the ongoing assessment of the topic at the corresponding in-class session.

Topics assigned for independent study that are not covered in scheduled classroom sessions are evaluated during practical classes and ongoing assessments.

Assessment of Individual Student Work

Points awarded for individual work are added to the student's total score for ongoing academic performance. Students may earn points for individual work by producing published materials (abstracts, articles), presenting at conferences, or placing in the top ranks of subject-specific Olympiads held at their own higher education institution or among higher education institutions across Ukraine.

The maximum score for individual student work is 6 points.

FINAL ASSESSMENT

General Provisions

- The final assessment for the "Human Anatomy" course is conducted in the form of an exam following the completion of all topics outlined in the course syllabus.
- The exam aims to comprehensively evaluate the extent to which higher education students have mastered theoretical material and developed practical skills, as well as their ability to apply anatomical knowledge to analyze the structure of organs and organ systems, topographic-anatomical relationships, and clinical-anatomical scenarios.
- The exam is administered in accordance with the relevant Order during the examination period, as per the approved schedule.

Conditions for Admission to the Exam

Higher education students are admitted to the semester exam if they:

- have fulfilled all requirements of the curriculum and the syllabus for the

"Human Anatomy" course;

- attended classes and have no more than 25% of classes missed;
- made up for missed classes in accordance with established procedures;
- completed all types of academic work prescribed by the course syllabus;
- accumulated the minimum required number of points for ongoing academic performance;
- adhered to academic integrity requirements during the course of study.

Exam Format

The exam is conducted using a hybrid format (in-person and remote).

- **In-person format:**

The in-person exam takes place at the Department of Descriptive and Clinical Anatomy of Bogomolets National Medical University (NMU) at the following address:

34 Beresteiskyi Avenue, Morphological Building.

- **Remote format:**

The remote exam is conducted via the Zoom platform and the Likar_NMU educational platform, in accordance with the relevant order, for higher education students who:

- are performing military service within the Armed Forces of Ukraine or other defense force units;
- are currently abroad and have provided a copy of a document confirming their legal status in their country of residence.

When taking the exam remotely, the student is required to ensure a stable internet connection, keep the camera and microphone on, enable identity verification, and adhere to academic integrity requirements.

- ✓ **1. Exam Structure**
- ✓ **The "Human Anatomy" course exam consists of three stages:**
- ✓ **Stage I – test-based assessment;**

- ✓ **Stage II – answering questions from the exam paper;**
- ✓ **Stage III – oral interview involving the assessment of practical skills.**

STAGE I – TEST-BASED ASSESSMENT

Stage I of the exam involves students completing Format A test tasks (KROK-1) and constitutes part of the final assessment for the "Human Anatomy" course.

Test-based assessment aims to evaluate students' mastery of the course's fundamental theoretical material and serves as a crucial element in the systematic preparation of higher education students for the "Krok-1" integrated test exam. The test items were developed by the Department of Descriptive and Clinical Anatomy in accordance with the "Human Anatomy" course curriculum, the schedule of practical classes, content modules, and intended learning outcomes. They also take into account the content structure of the Krok-1 integrated test exam—established pursuant to the Higher Education Standard for the specialty 222 "Medicine" (second/master's level), approved by Order No. 1197 of the Ministry of Education and Science of Ukraine dated November 8, 2021. This standard defines the list of specialized (professional, subject-specific) competencies (Axis 2 of the detailed exam content structure) as well as the thematic sections and topics whose study fosters the acquisition of these competencies and whose understanding and application are assessed during the exam (Axis 1 of the detailed exam content structure).

 Throughout the course, students have the opportunity to systematically work through test questions available on the Likar_NMU learning platform while preparing for practical classes and ongoing knowledge assessments.

 The test assessment takes place during the final practical class of the course, in accordance with the approved schedule. At the department's discretion, the test may be administered in written form, in a computer lab, or via the Likar_NMU learning platform (particularly if the educational process

involves remote technologies or if other circumstances prevent in-class testing).

- Each individual test set is generated either by the department or automatically by the Likar_NMU platform through the randomized selection of questions from the approved test question database.
- Each individual test set consists of 40 "Type A" test questions covering the topics of the course's content modules.
- One minute is allotted for answering each test question.
- Each correct answer is awarded 1 point.

✓ The maximum score for the test assessment is 40 points.

✓ Students who did not complete or pass the test assessment during the final practical class have the right to retake it before the start of the examination session on a day designated by the department. The retake follows the same procedure but uses a different set of test questions from the department's approved database.

STAGE II – ANSWERING THE EXAMINATION TICKET QUESTIONS

✓ Stage II of the exam assesses the student's level of theoretical knowledge regarding the course material of the "Human Anatomy" discipline.

✓ The student selects the examination ticket number independently.

✓ The examination ticket contains 4 questions covering the main sections of the discipline and corresponding to the topics of lectures, practical classes, and independent student work.

The student:

• provides a written answer to one question from the exam paper using Latin terminology in accordance with anatomical nomenclature—part of the preparation for the "Krok-1" integrated test exam (given that the test questions for the "Human Anatomy" discipline include Latin anatomical terms);

- provides an oral answer to the remaining questions on the paper;
- answers the examiner's clarifying questions if necessary.

The assessment of the answer takes into account:

- the completeness of the answer;
- the correct use of anatomical terminology;
- knowledge of Ukrainian and Latin anatomical nomenclature;
- understanding of the structure, function, development, blood supply, innervation, and topography of anatomical structures;
- the logic and coherence of the answer.

STAGE III — ASSESSMENT OF PRACTICAL SKILLS

Stage III of the exam evaluates the ability of higher medical education students to apply knowledge from fundamental educational components and assesses the level of proficiency in practical skills, based on the list approved by the department.

 The practical component of the exam is a crucial element in developing clinically oriented thinking, consolidating theoretical knowledge, and preparing students for the "Krok-1" integrated test exam.

 The assessment of practical skills is conducted using standardized individual exam tasks, compiled by the department in accordance with the approved list of practical skills.

 Each individual task comprises 10 anatomical structures marked with numerical indicators on:

- anatomical drawings;
- anatomical diagrams;
- anatomical specimens;
- materials used for visualizing anatomical structures via modern clinical imaging methods (CT, MRI, X-rays, etc.).

 The student must identify each marked anatomical structure and record its name in Ukrainian and in accordance with the International Anatomical Terminology (in Latin).

Assessment is conducted separately for each anatomical structure:

- 2 points – correct identification of the anatomical structure in both Ukrainian and Latin;
- 1 point – correct identification of the anatomical structure in either Ukrainian or Latin only;
- 0 points – incorrect answer or no answer provided.

The maximum score for Stage III is 20 points.

 Preparation materials for Stage III of the exam—specifically the module "Visualization of Anatomical Structures Using Modern Clinical Imaging Methods"—are available on the O.O. Bogomolets NMU department webpage and the Likar_NMU educational platform.

 The use of standardized exam tasks ensures objective assessment, uniform exam conditions for students, and the evaluation of their ability to identify anatomical structures using both classic anatomical images and materials obtained through modern clinical imaging methods.

Sample Examination Card

EXAMINATION CARD No. ___

1. Hard palate: development, structure, innervation, and blood supply of the mucous membrane. Developmental anomalies of the hard palate.
2. Topography of the neck: regions, triangles, spaces, and their contents.
3. Heart: development, external structure; heart chambers and the vessels communicating with them.
4. Retina of the eyeball: structure, functions. Cranial nerve II. Visual pathways.

EXAM EVALUATION CRITERIA

Exam Stage I – Test-based assessment

Correspondence of the number of correct answers to the traditional grading scale

Grade	Number of correct answers	Percentage of correct answers
«5»	36 – 40	90 – 100%
«4»	32 – 35	80 – 89%
«3»	28 – 31	70 – 79 %
«2»	Less 28	Less 70%

Stage II of the exam – Evaluation of the answer to the exam paper question

Each question on the exam paper is evaluated separately.

Grade	Points	Characteristics of answer
«5»	15 points	The student addresses the topic comprehensively, logically, and with sound reasoning; uses anatomical terminology correctly; and demonstrates a deep understanding of the structure, function, topography, blood supply, innervation, and clinical significance of the anatomical structures.
«4»	13 points	The student addresses the topic generally correctly but makes minor inaccuracies that do not distort the overall meaning of the answer.
«3»	10,5 points	The student demonstrates a minimally sufficient level of knowledge; the response is incomplete and contains some significant inaccuracies, yet the core content of the topic is covered.
«2»	0 points	The student fails to address the topic, makes gross errors, or is unable to provide an answer.

Stage III of the exam—the assessment of practical skills—is conducted based

on the following criteria:

Result of answer	**Points**
Correct answer in Ukrainian and Latin	2
Correct answer in Ukrainian only or Latin only	1
Incorrect answer or no answer	0
The maximum score for Stage III is 20 points.	

Final Assessment Table (Exam)

Test control	**Written control**				**Practical skills**	
40 Tests	**Question 1**	**Question 2**	**Question 3**	**Question 4**		**Total number of points**
«5» – 36–40 correct anwers (90–100 %) **For example, max 40 points**	15 points 15 points	15 points 15 points	15 points 15 points	15 points 15 points	20 points 20 points	**Total 120 points**
«4» – 32–35 correct anwers (80–89 %)	points	13 points	13 points	13 points	Scoring is performed by summing the points for 10 anatomical	

					structures (0–20 points).	
«3» – 28–31 correct anwers (70–79 %) **For example, min 28** points	**10,5** points	**10,5** points	**10,5** points	**10,5** points	For each anatomical structure: 2, 1, or 0 points.	**Total70** points
«2» Less 28 corect anwers (less 70 %) 0 балів	0 points	0 points	0 points	0 points	0 points	

OVERALL ASSESSMENT FOR THE "HUMAN ANATOMY" COURSE

 The student's performance in the course is assessed using a rating system based on a multi-point scale, calculated as the sum of points awarded for ongoing academic work and the final assessment of knowledge.

 The course grade is determined according to the ECTS scale and the national grading scale adopted in Ukraine.

Allocation of points for the course

Number of classes	**Continuous Assessment and Independent Student Work**	**IW**	**Total points for ongoing coursework**	**Total points for exam**	**Total points for subject**

	«5»	«4»	«3»	«2»				
67	**1,1**	**0,9**	**0,8**	**0**	**6**	**0 – 80**	**0 – 120**	**0 – 200**

A student's performance in a course is assessed using a rating system based on a multi-point scale; the grade is calculated as the sum of points from ongoing and final knowledge assessments and is defined according to the ECTS system and the grading scale adopted in Ukraine.

Correspondence between grading scales for the mastery of course material

Grade on the national scale	Grade in points	**Score on the scale ECTS**	**Explanation**
"Excellent"	170 – 200	A	Excellent (excellent performance with only a few minor errors)
"Good"	155 – 169	B	Very Good (above-average performance with a few errors)
	140 – 154	C	Good (generally correct performance with some significant errors)
"Satisfactory"	125 – 139	D	Satisfactory (decent, but with a significant number of shortcomings)
	111 – 124	E	Sufficient (performance meets minimum criteria)
"Unsatisfactory"	60 – 110	FX	Unsatisfactory (with the option to retake the assessment)
	1-59	F	Unsatisfactory (with a requirement to retake the course)

ACADEMIC INTEGRITY DURING EXAMINATIONS

 While taking an examination, higher education students are required to adhere to the principles of academic integrity in accordance with Article 42 of the Law of

Ukraine "On Education" and the Regulation on Academic Integrity at O.O. Bogomolets National Medical University.

- Students are prohibited from using any unauthorized aids, including:
- mobile phones;
- smartwatches;
- headphones;
- communication devices;
- lecture notes;
- textbooks;
- printed or handwritten materials;
- devices for reading, processing, storing, or transmitting information;
- external internet resources during remote examinations;
- assistance from third parties.

If the use of prohibited aids or a violation of academic integrity principles is detected, the student shall be removed from the examination, and the examination result shall be graded as "unsatisfactory."

PROCEDURES FOR THE REMOTE EXAM

- During the remote exam, the student is required to:
- join the Zoom meeting at the scheduled time;
- undergo identity verification;
- turn on the camera and microphone upon the examiner's request;
- be alone in the room;
- allow the examiner to view the workspace upon request;
- refrain from using external sources of information;
- refrain from leaving the workspace without the examiner's permission;
- follow the instructions of the examination commission.

In the event of a technical failure, the student must immediately notify the examiner or the designated department representative. Subsequent actions will be determined by the examination commission, taking into account the circumstances and the technical feasibility of continuing the exam.

APPEAL PROCEDURE

 If a student disagrees with the result of a semester exam, they have the right to submit an appeal in accordance with Clause 8.9 of the Regulation "On the Organization of the Educational Process at O.O. Bogomolets NMU."

 The appeal must be submitted to the dean's office of the relevant faculty or institute after the exam results are announced, but no later than the following day.

 The appeal is reviewed in accordance with the procedure established by the University.

INFORMATION RESOURCES

 Likar_NMU learning platform: https://likar.nmu.kyiv.ua

 Department of Descriptive and Clinical Anatomy website: https://nmuofficial.com

 Official website of O.O. Bogomolets NMU: https://nmuofficial.com

10. Course Policy:

The course policy entails the consistent and purposeful implementation of the educational process based on transparency, accessibility, scientific validity, methodological appropriateness, and the responsibility of all participants in the educational process.

The "Human Anatomy" discipline is a mandatory course with a workload of 13 credits; it is a key subject within the natural science training cycle for Bachelor's degrees and serves as a component of the external assessment—specifically the first stage of the USQE (Unified State Qualification Exam)—for the "Medicine" specialty (Code 222).

INFORMATION RESOURCES

 Likar_NMU learning platform: https://likar.nmu.kyiv.ua

 Department of Descriptive and Clinical Anatomy website: https://nmuofficial.com/zagalni-vidomosti/kafedri/kafedra-anatomyy-cheloveka/

 Official website of O.O. Bogomolets NMU: https://nmuofficial.com

11. Recommended literature:

1. Human Anatomy: Textbook, Vol. 1 / A.S. Holovatskyi, V.H. Cherkasov, M.R. Sapin, A.I. Parakhin, O.I. Kovalchuk – 10th revised edition – Vinnytsia: Nova Knyha, 2025. – 1200 p.: ill.
2. Human Anatomy: Textbook, Vol. 2 / A.S. Holovatskyi, V.H. Cherkasov, M.R. Sapin, A.I. Parakhin, O.I. Kovalchuk – 10th revised edition – Vinnytsia: Nova Knyha, 2025. – 1200 p.: ill.
3. Human Anatomy: Textbook, Vol. 3 / A.S. Holovatskyi, V.H. Cherkasov, M.R. Sapin, A.I. Parakhin, O.I. Kovalchuk – 10th revised edition – Vinnytsia: Nova Knyha, 2025. – 1200 p.: ill.
4. Kovalchuk O.I. International Anatomical Terminology (Latin, Ukrainian, and English equivalents). Knyha-Plus, 2023. – 129 p. (study guide) + electronic resource.
5. Colorful Anatomy (assessment of independent preparation for practical classes) [for students of higher medical (pharmaceutical) educational institutions of the IV accreditation level] / 199 pp. 2025. Educational-methodological guide / Edited by I.V. Dzevulska and O.I. Kovalchuk.
6. "Krok-1" Test Tasks: Human Anatomy / 8th revised edition / Edited by V.H. Cherkasov, I.V. Dzevulska, and O.I. Kovalchuk. Study guide. – 2023. – 100 pp.

Supplementary:

1. Gray's Anatomy for Students: Textbook. Richard L. Drake, A. Wayne Vogl, Adam W.M. Mitchell. Translation of the 5th edition. Kyiv: VSV "Medytsyna". 2025, 1111 pp.
2. Neuroanatomy: Trans. of 7th ed. / Alan Crossman; scientific editors of the edition: Oleksandr Kovalchuk, Iryna Dzevulska. – Kyiv: VSV "Medytsyna", 2025. – VIII, 182 pp. – (Text and color illustrations).
3. Diubenko K.A. Human Anatomy. In 2 volumes. Volume 1 / K.A. Diubenko, A.K. Kolomiitsev, Yu.B. Chaikovskyi. – Kyiv: AT Knyha, 2022. – 690 pp.

Electronic resources:

https://likar.nmu.kyiv.ua./
www.anatom.ua
https://nmuofficial.com

Developed by:

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Discussed and approved at the meeting of the Department of Descriptive and Clinical Anatomy of O.O. Bogomolets National Medical University (Protocol No. 1 dated August 26, 2026) and at the meeting of the Central Methodological Commission for Natural Sciences (Protocol No. 1 dated August 26, 2026).