MINISTRY OF SCIENCE, HIGHER EDUCATION AND INNOVATIONS OF THE KYRGYZ REPUBLIC

Higher Education Institution "Kyrgyz-Russian Slavic University named after the First President of the Russian Federation B.N. Yeltsin"

APPROVED BY
Director ICM and BMT
(position)
S.S. Abilova
(Full name)
04.11 2026 г.

PROFESSIONAL CYCLE
Normal anatomy
Working program of the discipline (Module)

Assigned to the Department **of Anatomy, Histology and Physiology**

Curriculum Code: 310501_26_1 LDi.plx
Specialty code 31.05.01 (Russian Federation) / 560001 (Kyrgyz Republic) — General Medicine

Qualification: Medical Doctor
Mode of study: Full-time

Total Workload:**10 ZET**
Total Curriculum Hours: 300
including:
Contact hours (auditorium sessions): 180.8
Independent Work: 89.7

Assessment Types by Semester:
pass/fail assessment: Semester 1
examination: Semester 2

Course Hours Scheduling (per semester)

Semester (course, academic year)	1 (1.1)		2 (1.2)		Total	
Weeks	21		21			
Type of Activity	AC	CO	AC	CO	AC	CO
Lectures	30		30		60	
Laboratory Practicum	60		60		120	
Including Interactive Session	0.3				0.3	
Consultation hours during the examination period			0.5		0.5	
Including interactive activities	6		6		12	
Total In-class Hours	90		90		180	
Contact Work (Face-to-Face)	90.3		90.5		180.8	
Independent Work	59.7		30		89.7	
Control Hours			29.5	29.5	29.5	29.5
Total	150		150	29.5	300	29.5

Curriculum ID: 310501_26_1 LDi.plx

Prepared by: A.S. Imanalieva, Senior Lecturer of the Department of Anatomy, Histology, and Physiology

Reviewer(s):
O.P. Kalugina, PhD in Medical Sciences, Associate Professor, Head of the Department of Anatomy, Histology, and Physiology

Endorsed by the Program Director: M.K. Zhamankulova

Working Program of the Discipline
Normal Anatomy

Developed in accordance with the Federal State Educational Standard of Higher Education (FSES 3++) for the Specialist degree program in Specialty 31.05.01 "General Medicine" (Order of the Ministry of Science and Higher Education of the Russian Federation dated August 12, 2020, No. 988).

Based on the curriculum for:
Specialty 31.05.01 (Russian Federation) / 560001 (Kyrgyz Republic) "General Medicine",
approved by the University Academic Council on June 26, 2026 (Protocol No. 11).

The Course Syllabus was approved at the meeting of the Department of Anatomy, Histology, and Physiology.

Protocol dated: August 26, 2026, No. 1
Program validity period: 2026–2027 academic year
Head of the Department: Olga Petrovna Kalugina

1. COURSE OUTLINE OBJECTIVES	
1.1	**Knowledge**
1.1.1	Demonstrate comprehensive understanding of the macroscopic and microscopic structure of the human body, including all organ systems, based on modern anatomical science.
1.1.2	Describe the topographic relationships of organs, neurovascular bundles, fascial spaces, and anatomical landmarks in all body regions.
1.1.3	Explain the structural and functional organization of the human body as an integrated whole, as well as the anatomy of individual organs and systems.
1.1.4	Analyze age-related, sex-related, and individual anatomical variations, as well as common congenital malformations.
1.1.5	Integrate knowledge of human evolution (phylogenesis), anthropogenesis, and individual development (ontogenesis) to explain the structural organization of the human body.
1.2	**Skills**
1.2.1	Identify and demonstrate anatomical structures, their components, and spatial relationships on cadaveric specimens, anatomical models, and diagnostic imaging (X-ray, CT, MRI).
1.2.2	Palpate major bony and muscular landmarks on a living subject and map the surface projections of neurovascular bundles.
1.2.3	Apply correct anatomical terminology when describing structures and their relationships.
1.2.4	Utilize modern anatomical research methods, including 3D imaging, virtual dissection software, and scientific literature.
1.3	**Expertise:**
1.3.1	Synthesize anatomical knowledge to solve diagnostic and therapeutic tasks, serving as a foundation for clinical disciplines, while demonstrating the ability to independently master complex medical material.
1.3.2	Uncompromisingly uphold the highest standards of medical humanism and compassion, demonstrating profound respect, dignity, and meticulous care toward anatomical specimens and donors within the dissection laboratory environment.

2. PLACE OF THE COURSE IN THE EDUCATIONAL PROGRAM	
Educational Program Unit	
2.1	**Student's Preliminary Training Requirements (Prerequisites):**
2.1.1	Biology
2.1.2	Chemistry
2.1.3	Physics
2.1.4	Latin Language and Medical Terminology
2.1.5	Fundamentals of Information Technology
2.1.6	History of Medicine
2.1.7	Bioethics and Medical Deontology
2.2	**Subsequent Disciplines Requiring Proficiency in This Course**
2.2.1	Histology, Cytology, and Embryology
2.2.2	Normal Physiology
2.2.3	Biochemistry
2.2.4	Pathological Anatomy
2.2.5	Pathophysiology
2.2.6	Pharmacology
2.2.7	Microbiology, Virology, and Immunology
2.2.8	Topographic Anatomy and Operative Surgery
2.2.9	Diagnostic Radiology and Medical Imaging
2.2.10	Propaedeutic of Internal Medicine
2.2.11	General Surgery
2.2.12	Faculty Surgery

2.2.13	Hospital Surgery
2.2.14	Traumatology and Orthopedics
2.2.15	Pediatric Surgery
2.2.16	Urology
2.2.17	Obstetrics and Gynecology
2.2.18	Otorhinolaryngology
2.2.19	Ophthalmology
2.2.20	Neurology and Neurosurgery
2.2.21	Internal Medicine (Faculty and Hospital Therapy)
2.2.22	Pediatrics
2.2.23	Endocrinology
2.2.24	Infectious Diseases
2.2.25	Oncology
2.2.26	Forensic Medicine
2.2.27	Sports Medicine
2.2.28	Occupational Medicine
2.2.29	Medical Rehabilitation
2.2.30	Clinical Laboratory Diagnostics

3. STUDENTS' COMPETENCIES RESULTING FROM THE COURCE UNIT (MODULE)	
OPC-9: the ability to assess the morphofunctional, physiological states and pathological processes in human body for solving professional problems.	
Knowledge:	
Level 1	Describe the common patterns of human body structure and the structural-functional relationships between its parts. Define the main methods of anatomical research and apply correct anatomical terminology. Identify the basic organizational levels of the human body: cells, tissues, organs, systems.
Level 2	Explain the principles of human evolution (phylogenesis) and individual development (ontogenesis) and their impact on organ structure. Analyze the anatomo-topographical relationships of organs and their parts in adults, children, and adolescents. Describe the main structural and topographical features of organs and organ systems, including their age-related variations. Identify common anatomical variations, anomalies, and congenital malformations of organs and systems.
Level 3	Integrate anatomical knowledge to substantiate clinical diagnoses and xplain the anatomical basis of pathological processes. Evaluate the applied value of anatomical knowledge for subsequent clinical disciplines and future professional practice. Assess the significance of fundamental anatomical research for the advancement of theoretical and clinical medicine.
Skills:	
Level 1	Correctly handle basic anatomical instruments. Identify and demonstrate organs, their parts, and structural details on anatomical specimens and models. Apply correct anatomical terminology when naming structures and describing their topographical relationships.
Level 2	Perform dissection to identify and distinguish muscles, fasciae, major blood vessels, nerves, and glandular ducts. Identify and demonstrate organs and their key structural features on radiographs (X-ray images). Correlate anatomical structures with their radiological appearance on basic imaging modalities.
Level 3	Palpate major bony and muscular landmarks on a living subject.

	Map the surface projections of major neurovascular bundles in various body regions. Demonstrate and correctly name joint movements on the human body or anatomical models. Identify organs and their structural details on advanced medical images (CT, MRI scans).
Expertise:	
Level 1	Utilize scientific literature (textbooks, atlases, peer-reviewed journals) for professional development. Apply basic information processing technologies and digital resources in anatomical studies.
Level 2	Conduct independent work with educational literature in both print and electronic formats. Use Internet resources and medical databases (PubMed, Thieme MedOne, Complete Anatomy) for self-directed learning about human anatomy. Critically evaluate anatomical information from various sources.
Level 3	Apply anatomical terminology fluently in professional communication. Perform dissection techniques proficiently using medical instruments (scalpel, forceps, scissors) while adhering to biosafety protocols. Demonstrate respectful, ethical, and careful treatment of anatomical specimens and cadaveric material, recognizing the invaluable contribution of donors to medical education. Synthesize anatomical knowledge to solve clinical situational tasks and case studies.

Final Students' Competences

3.1	**Knowledge:**
3.1.1	Mastery of standard anatomical terminology and fundamental methods of anatomical research;
3.1.2	Understanding the historical development of anatomical science and its critical role in modern medicine and biology;
3.1.3	Knowledge of the common patterns of human body organization, structural-functional interrelationships, and the integration of organ systems;
3.1.4	Detailed knowledge of the anatomical and topographic relationships of organs and their parts in adults, children, and adolescents;
3.1.5	Understanding the main structural features, organization, and functions of all organ systems;
3.1.6	Recognition of common anatomical variations, abnormalities, and congenital malformations of organs and systems;
3.1.7	Understanding the applied value of anatomical knowledge for clinical diagnosis, surgical intervention, and future professional activity;
3.1.8	The role of fundamental anatomical research in the advancement of practical and theoretical medicine.
3.2	**Skills:**
3.2.1	Proper handling and use of anatomical dissection instruments (forceps, scalpels, scissors, probes);
3.2.2	Ability to identify and demonstrate organs, their structural components, and topographic relationships on anatomical specimens and models;
3.2.3	Ability to perform dissection to identify and distinguish muscles, fasciae, vessels, nerves, and glandular ducts;
3.2.4	Ability to identify organs and their main structures on X-ray films, CT, and MRI scans;
3.2.5	Ability to palpate major bony and muscular landmarks on a living subject and demonstrate joint movements;

3.2.6	Ability to effectively search for and utilize scientific literature and medical databases.
3.3	**Expertise:**
3.3.1	Integration of modern digital tools (3D anatomy software, virtual dissection tables) into professional anatomical study and practice;
3.3.2	Capability for independent critical analysis of educational and scientific literature (print and electronic media) to solve anatomical problems;
3.3.3	Execution of precise dissection techniques on biological specimens while strictly adhering to biosafety protocols and ethical standards regarding donor material.

4. COURSE (MODULE) STRUCTURE AND CONTENT							
Class code	**Subject Name /Type of Class**	**Semester Academ. Year**	**Hours**	**Competencies**	**Literature**	**Interactive Sessions**	**Notes**
	Module 1 «OSTEOSYNDESMOLOGY, SKULL»						
1.1	Introduction to human anatomy. Osteology – theory of bones. Axes and planes. Anatomical terminology. /Lect./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
1.2	Syndesmology – theory of bones joints. /Lect./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
1.3	Anatomy – as science. Axes, planes, anatomical terminology. /Pr./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
1.4	Osteology – vertebrae. Ribs, sternum. /Pr./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
1.5	Bones of the shoulder girdle and free upper limb bones –humerus, radial, ulnar bones. Hand bones. / Pr./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
1.6	Bones of pelvis and free lower limb – femoral bone, tibial, fibular, bones of foot. /Pr./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
1.7	General syndesmology. Vertebrae joints. Vertebral column as a whole. Joints of thorax. Thorax as a whole. / Pr./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
1.8	Bones joints of shoulder girdle. Shoulder joint, elbow joint, wrist joint, joints of hand. / Pr./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
1.9	Joints of pelvic bones. Hip joints, knee joint, ankle joint, joints of the foot. /Pr./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	1	Working with the Pirogov virtual dissection table
1.10	Developmental variation	1	10	ОПК-9	L1.1 L1.2	0	

	of skeleton. Work with literature recourses and etc., including in an interactive way. Work with electronic learning resources. /In./				L1.3 L2.3 L2.4		
1.11	Midterm: «STEOSYNDESMOLOGY» / Pr./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
1.12	Skull. /Lect./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
1.13	Skull. Cerebral bones– parietal, frontal, occipital, ethmoidal. /Pr./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
1.14	Sphenoid, temporal bones. /Pr./	1	2		L1.1 L1.2 L1.3 L2.3 L2.4	0	
1.15	Facial bones. Orbit. Bones of nasal cavity, fossae. /Pr./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
1.16	Skull as a whole. Articulation of skull bones. Temporo-mandibular joint. External and internal surfaces, vault and base of skull. /Pr./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	1	Working with the Pirogov virtual dissection table.
1.17	Variants and abnormal development of skull bones. Age peculiarities. Work with literature recourses and etc., including in an interactive way. Work with electronic learning resources. /In/	1	10	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
1.18	Midterm: «SKULL» /Pr./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
	Module 2 «MYOLOGY»						
2.1	General muscles anatomy /Lect./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
2.2	Biomechanics of muscles and appendicular joints. /Lect./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
2.3	The topography of muscles /Lect./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
2.4	Introduction to myology. Muscles and fascia of head and neck. Triangles of	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	

	neck. Fascia of neck. /Pr./						
2.5	Muscles and fascia of chest, back, abdomen. Topographical features. Weak places of abdomen walls. Diaphragm. /Pr./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
2.6	Muscles and fascia of shoulder girdle and arm. Muscles and fascia of forearm and hand. Topography of upper limb. /Pr./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
2.7	Muscles and fascia of pelvis, femur, leg and foot. Topography of lower limb. /Pr./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	1	Working with the Pirogov virtual dissection table
2.8	Variants of muscles development, their topography. Work with literature recourses and etc., including in an interactive way. Work with electronic learning resources. /In/	1	10	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
2.9	Midterm: «MYOLOGY» /Pr./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
	Subject 3 «DIGESTIVE SYSTEM»						
3.1	Introduction of digestive system /Lect./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
3.2	The anatomy of digestive tract /Lect./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
3.3	The accessory organs of the digestive system. /Lect./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
3.4	Anatomy of peritoneum /Lect./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
3.5	General review of digestive organs. Oral cavity. Salivary glands. Tongue, teeth. /Pr./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
3.6	Pharynx, esophagus, stomach. Small and large intestine. /Pr./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
3.7	Liver. Pancreas. Spleen. Peritoneum.	1	2	OPC-9	L1.1 L1.2	1	Working

	Arrangement of the peritoneum. Age peculiarities. /Pr./				L1.3 L2.3 L2.4		with the Pirogov virtual dissection table
3.8	Abnormal development of digestive organs. Work with literature recourses and etc., including in an interactive way. Work with electronic learning resources. /In/.	1	10	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
3.9	Midterm: «DIGESTIVE SYSTEM» /Pr./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
	Module 4 «RESPIRATORY SYSTEM»						
4.1	General review of respiratory system. /Lect./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
4.2	Respiratory organs. Nasal cavity. Paranasal sinuses. Larynx, trachea. /Pr./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
4.3	Bronchial tree. Lungs. Thyroid, parathyroid glands. /Pr./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
4.4	Mediastinum. Pleura. Thymus gland. /Pr./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	1	Working with the Pirogov virtual dissection table.
4.5	Abnormalities and variants of respiratory organs development. Work with literature recourses and etc., including in an interactive way. Work with electronic learning resources. /In/	1	10	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
4.6	Midterm: «RESPIRATORY SYSTEM» /Pr./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
	Module 5 «UROGENITAL SYSTEM»						
5.1	General review. Urinary system. /Lect./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
5.2	General review of reproductive system /Lect./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4L2.2	0	
5.3	The functional anatomy	1	2	OPC-9	L1.1L1.2	0	

	of reproductive system /Lect./				L1.3 L2.3 L2.4		
5.4	Endocrine system. /Lect./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
5.5	Excretory organs. Kidneys, suprarenal glands. Ureter, urinary bladder. /Pr./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
5.6	Male genital organs. /Pr./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
5.7	Female genital organs. /Pr./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	1	Working with the Pirogov virtual dissection table
5.8	Abnormalities and variants of urinary organs, age peculiarities of masculine and female genital organs. Work with literature recourses and etc., including in an interactive way. Work with electronic learning resources. /In/	1	9,7	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
5.9	Midterm: «UROGENITAL SYSTEM» /Pr./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
5.10	Reworks of skipped lectures /Lect./	1	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
	Module 6 «CNS»						
6.1	Introduction to neurology. /Lect./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
6.2	Physiologic anatomy of brainstem. /Lect./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
6.3	The functional anatomy of cerebellum and diencephalon /Lect./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
6.4	Morphology of cerebral cortex. /Lect./	2	2		L1.1 L1.2 L1.3 L2.3 L2.4	0	
6.5	Pathways of the central nervous system. /Lect./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
6.6	Introduction to neurology. Spinal cord. Radixes. Segments. /Pr./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
6.7	Topography of nucleus	2	2	OPC-9	L1.1 L1.2	0	

	and conduction tracts of gray and white matter of spinal cord. /Pr./				L1.3 L2.3 L2.4		
6.8	Review of brain. Embryogenesis. Medulla oblongata. Pons. Rhomboid fossa. IV ventricle. Midbrain. /Pr./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
6.9	Cerebellum. Features, conducting tracts. Diencephalon. III ventricle. /Pr./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
6.10	Morphology of cerebral hemispheres – gyrus, sulcus. Cortical analyzers. Limbic system. /Pr./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
6.11	White matter of hemispheres. Basal nuclei. Lateral ventricles. /Pr./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
6.12	Meninges of brain and spinal cord. Conducting tracts of spinal cord and brain. /Pr./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	1	Working with the Pirogov virtual dissection table.
6.13	Abnormal development of spinal cord and brain. Work with literature recourses and etc., including in an interactive way. Work with electronic learning resources. /In/	2	5	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
6.14	Midterm: «CNS» /Pr./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
	Module 7 «Sensory organs»						
7.1	Physiologic anatomy of visual organ. /Lect./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
7.2	Physiologic anatomy of organs of equilibrium and hearing. /Lect./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
7.3	Anatomy of the skin. Organs of taste and smell /Lect./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
7.4	Visual organ. Eyeball. Auxiliary eye apparatus. Optic tract. /Pr./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
7.5	External and middle ear. /Pr./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
7.6	Internal ear. Cochlear, vestibular tract. Skin organs of taste and smell	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	1	Workin g with the

	/Pr./						Pirogov virtual dissectio n table.
7.7	Abnormal and various development of sense organs: eye, ear. Work with literature recourses and etc., including in an interactive way. Work with electronic learning resources. /In/	2	5	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
7.8	Midterm: «Sensory organs». /Pr./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
	Module 8 «Heart, vessels and nerves of head, neck»						
8.1	Cranial nerves. General characteristics. /Lect./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
8.2	Introduction to angiology. Heart. /Lect./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
8.3	Cervical plexus. Cranial nerves– XII, XI, III, IV, VI pairs. /Pr./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
8.4	Trigeminal nerve (V pair) – I, II, III branches. /Pr./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
8.5	VII, IX, X pairs of cranial nerves. Ganglion along the V pair. /Pr./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
8.6	Heart – features, valves, topography, blood supply, innervation. /Pr./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
8.7	Branches of aortic arches. Common, external, internal carotid artery. /Pr./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
8.8	Subclavian artery. Veins of head and neck. Lymph. /Pr./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	1	Working with the Pirogov virtual dissection table.
8.9	Heart abnormalities. Anastomosis. Work with literature recourses and etc., including in an interactive way. Work with electronic learning resources. /In/	2	5	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
8.10	Midterm: «Heart, vessels	2	2	OPC-9	L1.1 L1.2	0	

	and nerves of head and neck». /Pr./				L1.3 L2.3 L2.4		
	Module 9 «Vessels and nerves of cavities»						
9.1	Arterial system of human body. /Lect./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
9.2	Venous system. Lymphatic system. Immune organs. /Lect./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
9.3	Vegetative nervous system. /Lect./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
9.4	Arteries, veins and nerves of thorax. Lymph. /Pr./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
9.5	Abdominal cavity arteries. /Pr./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
9.6	Abdominal cavity veins. Systems of portal and inferior vena cava. Lymph. Veins anastomosis. /Pr./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	1	Working with the Pirogov virtual dissection table.
9.7	Arteries, veins of pelvis. Lymph. /Pr./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
9.8	Lumbar plexus. Short branches of sacral plexus. /Pr./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
9.9	Autonomic nervous system. /Pr./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	1	Working with the Pirogov virtual dissection table.
9.10	Autonomic ganglion along VII pairs of cranial nerves. Work with literature recourses and etc., including in an interactive way. Work with electronic learning resources. /In/	2	5	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
9.11	Midterm: «Vessels and nerves of cavities». /Pr/	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
	Module 10 «Vessels and nerves of limbs»						
10.1	Peripheral nervous system. /Lect./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
10.2	Neurovascular formations of the cavities and limbs /Lect./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	

10.3	Arteries, veins, lymph of upper limb. /Pr./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
10.4	Brachial plexus, branches. /Pr./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
10.5	Arteries, veins, lymph of lower limb. /Pr./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
10.6	Long branches of sacral plexus. /Pr./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	1	Working with the Pirogov virtual dissection table.
10.7	Peculiarities of limbs peripheral innervation. Work with literature recourses and etc., including in an interactive way. Work with electronic learning resources. /In/	2	5	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
10.8	CS: «Vessels and nerves of limbs». /Pr./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
10.9	Reworks of skipped lecture. /Lect./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
10.10	Preparation for exams. Work with literature recourses and etc., including in an interactive way. Work with electronic learning resources. /In/	2	5	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
10.11	Testing. /Pr./	2	2	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	
10.12	Exam / Exam/	2	29.5	OPC-9	L1.1 L1.2 L1.3 L2.3 L2.4	0	

5. FUND OF ASSESSMENT TOOLS

5.1. Current Control Questions and Assignments

Questions to assess the level of KNOWLEDGE (Know):

- Gross and microscopic structure of the human body, including the osteology, arthrology, myology, splanchnology, angiology, neurology, and sensory organs.
- Topographic relationships of organs, neurovascular bundles, fascial spaces, and bony landmarks in all regions of the human body.
- Principles of international anatomical terminology and the rules of descriptive anatomy.
- Patterns of blood supply, venous drainage, lymphatic outflow, and segmental innervation of organs and body regions, including collateral circulation pathways.
- Age-related, sex-related, and individual anatomical variations, as well as the most common congenital malformations of organs and systems.
- Embryological development (ontogenesis) of major organ systems and its correlation with adult anatomical structure.

Questions to assess the level of SKILLS (Be able to):

- Identify and demonstrate bones, joints, muscles, internal organs, blood vessels, nerves, and sensory organs on anatomical specimens (cadavers) and models.
- Palpate major bony, muscular, and visceral landmarks on a living subject and map the surface projections of underlying structures.
- Interpret basic diagnostic imaging (radiographs, CT, and MRI scans) to identify normal anatomical structures and their spatial relationships.
- Correctly handle basic anatomical dissection instruments (e.g., forceps, scalpels, probes) while adhering to biosafety protocols.
- Perform basic dissection techniques to isolate and trace neurovascular bundles, muscles, and organ boundaries on biological specimens.

Questions to assess the level of MASTERY / EXPERTISE (Proficiency):

- Perform precise anatomical dissections to expose specific topographic-anatomical relationships (e.g., layers of the abdominal wall, contents of fascial spaces, branching of neurovascular bundles) on biological specimens.
- Apply fundamental anatomical knowledge to explain the anatomical basis of pathological processes, clinical symptoms, and standard diagnostic or therapeutic procedures.
- Solve clinical situational tasks (case studies) by correlating normal anatomical variations or congenital anomalies with potential clinical presentations.
- Demonstrate strict adherence to biosafety protocols, ethical standards, and professional respect when handling anatomical specimens, cadaveric material, and donors.

Appendix 1. Questions for Midterm Assessment

Appendix 2. Exam ticket variants

5.2. Course papers themes

Topics for student research papers/essays:

1. Gross and surface anatomy of the anterior abdominal wall: muscular layers, fasciae, and common anatomical variations.
2. Embryological development of the inguinal region and the anatomical basis of congenital anomalies.
3. Topographic and functional anatomy of the neck: fascial layers, triangles, and neurovascular topography.
4. Gross anatomy of the thoracic cavity: topography of the mediastinum, pleural recesses, and age-related changes.
5. Anatomical variations and surface landmarks of the upper limb: neurovascular pathways and osteological markers.
6. Biomechanical and functional anatomy of the lower limb: arches of the foot, joint kinematics, and gait-related muscular adaptations.
7. Embryological development and anatomical variations of the gastrointestinal tract: liver, stomach, and intestinal rotations.
8. Sexual dimorphism and developmental anatomy of the pelvic organs: urogenital system and perineal structures.
9. Osteology and neurovascular topography of the cranial base: foramina, fissures, and their contents.
10. Radiological anatomy and medical imaging: correlating gross anatomical structures with X-ray, CT, and MRI findings.

5.3. Assessment fund

Appendix 3. Problem-based clinical questions.
Appendix 4. Tests.

5.4. List of assessment tools

Appendix 6. List of types of assessment scales.

6. EDUCATIONAL-METHODOLOGICAL AND INFORMATION SUPPORT OF THE DISCIPLINE (MODULE)			
6.1. Recommended reading			
6.1.1. Basic Literature			
	Authors, compilers	Title	Publisher, year
L1.1	Moore, K. L., Dalley, A. F., & Agur, A. M. R.	Clinically Oriented Anatomy.	10th Edition. Philadelphia: Wolters Kluwer, 2019.
L1.2	Netter, F. H.	Atlas of Human Anatomy.	8th Edition. Philadelphia: Elsevier, 2022.
L1.3	Chaurasia, B. D.	BD Chaurasia's Human Anatomy: Regional and Applied Dissection and Clinical. Volumes 1, 2, and 3.	9th/10th Edition. New Delhi: CBS Publishers & Distributors, 2023–2024.
L1.5	Drake, R. L., Vogl, A. W., & Mitchell, A. W. M.	Gray's Anatomy for Students.	4th Edition. Philadelphia: Elsevier, 2020.
6.1.2. Additional literature			
Authors,	Title	Publisher, year	
L2.1	Standring, S. (Ed.)	Gray's Anatomy: The Anatomical Basis of Clinical Practice.	42nd Edition. Philadelphia: Elsevier, 2021.
L2.2	Clemente, C. D.	Anatomy: A Regional Atlas of the Human Body.	8th Edition. Philadelphia: Wolters Kluwer, 2020.
L2.3	Gilroy, A. M., MacPherson, B. R., & Ross, L. M.	Atlas of Anatomy.	4th Edition. New York: Thieme Medical Publishers, 2020.
L2.4	Rohen, J. W., Yokochi, C., & Lütjen-Drecoll, E.	Color Atlas of Anatomy: A Photographic Study of the Human Body.	9th Edition. Philadelphia: Wolters Kluwer, 2019.
6.2. Online resources			
Э1	Normal anatomy		http://www.teachmeanatomy.info
Э2	Normal anatomy		https://www.kenhub.com
Э3	Normal anatomy		https://www.anatomy.app/
Э4	Normal anatomy		https://www.visiblebody.com/
Э5	Normal anatomy		https://radiopaedia.org/
6.3. List of Information and Education Technologies			
6.3.1 Competence-based Educational Technologies			
6.3.1.1	Traditional educational technologies: To organize the study of the discipline, traditional educational technologies are used, focused on the transfer of fundamental anatomical knowledge and demonstration of dissection techniques. Lecture material is provided to students using multimedia equipment. Traditional educational technologies include: explanatory and illustrative lectures, demonstrations on anatomical specimens (cadavers) and models, guided dissections, and topographic anatomy workshops.		
6.3.1.2	Innovative and interactive educational technologies: Interactive classes that form systemic anatomical thinking and the ability to visualize three-dimensional relationships of structures. Innovative educational technologies include: problem-based learning (PBL), analysis of clinical-anatomical cases, student reports (abstracts, presentations) on regional anatomy, interactive work with 3D anatomy software, and virtual dissection sessions.		

6.3.1.3	Information and digital educational technologies: Independent use of computer equipment, virtual anatomy tables (e.g., Anatomage, Pirogov), 3D anatomy applications, and Internet resources by a student to perform practical tasks, virtual dissections, study of anatomical variations, and independent work.
6.3.2. List of Information Reference systems and software	
6.3.2.1	Information and methodological resource - https://vk.com/public192062648 (in Russian)
6.3.2.2	Information systems Medline, PubMed, Web of Science, Scopus, Cochrane Library.
6.3.2.3	Specialized anatomical and surgical resources: Thieme MedOne (Medical Education), Complete Anatomy (3D4Medical / Elsevier), Visible Body, JoVE (Journal of Visualized Experiments - Surgery section).
6.3.2.4	Scientific electronic library - http://elibrary.ru/
6.3.2.5	Russian State Library http://www.rsl.ru/
7. COURSE (MODULE) LOGISTICS	
7.1	Theoretical classes (lectures) are held in lecture-type classrooms equipped for 150 seats.
7.2	Practical classes are held in anatomy laboratories (dissection rooms), equipped with anatomical tables and workstations for 10–14 students each.
7.3	Multimedia complex (laptop, projector, screen) for demonstration of anatomical structures, anatomical atlases, and diagnostic imaging (X-ray, CT, MRI).
7.4	Interactive whiteboards and traditional chalkboards for drawing anatomical schemes and topographic relationships.
7.5	**Classroom equipment and teaching aids:** • Anatomical models and mannequins of body regions, organs, and systems; • Sets of basic anatomical dissection instruments (scalpels, forceps, scissors, probes, bone saws); • Anatomical atlases (Netter, Sobotta, Rohen) and anatomy textbooks; • Diagnostic imaging materials (radiographs, CT and MRI scans); • Educational films and video materials demonstrating anatomical dissection techniques; • Electronic versions of lectures and interactive 3D anatomy software (e.g., Complete Anatomy, Anatomage Table).

8. METHODOLOGICAL GUIDELINES FOR STUDENTS ON MASTERING THE DISCIPLINE (MODULE)

Appendix 5. Discipline flow chart

8.1. Formative Assessment (Current Control)

Studying the theoretical and practical components of this discipline is designed not only to build a solid foundation of morphological knowledge but also to foster students' spatial reasoning, initiative, and time-management skills.

Independent student work includes:

- Reading recommended literature and mastering the theoretical material of the discipline.
- Utilizing verified internet resources, 3D anatomy applications, and medical databases.
- Preparation for various forms of assessment (tests, practical exams, OSCE stations).
- Drawing anatomical schemes, muscle attachments, neurovascular pathways, and organ topography in a practical notebook.
- Identifying and describing anatomical structures on cadaveric specimens, anatomical models, and basic diagnostic imaging (X-ray, CT, MRI).

Students are advised to plan their study time throughout the semester, ensuring regular review of the material. Lecture content should be systematically reviewed and supplemented with information from recommended anatomical atlases and textbooks.

For each topic, students should read the recommended literature and create concise summaries of key provisions, Latin anatomical terms, and fundamental concepts required for subsequent topics. To expand their knowledge, students are encouraged to use virtual dissection resources recommended by the instructor.

8.2. Midterm and Final Assessment Preparation

To prepare for control works or practical exams, students must:

- Review the relevant chapters of anatomical textbooks and dissection guides.
- Utilize lecture notes and materials from practical sessions.
- Review anatomical schemes and practice identifying structures on anatomical models, bones, and

prosected specimens.
- Test Preparation: Students should thoroughly review lecture materials and corresponding study guides. Practicing with anatomical flashcards and online quizzes is highly encouraged.

8.3. Types of Independent Work Tasks

- As part of studying the discipline, the following types of independent work are utilized:
- Independent study of theoretical course topics (osteology, arthrology, myology, splanchnology, angiology, neurology).
- Preparation of oral answers to control questions provided after each topic.
- Completion of assigned homework (e.g., drawing anatomical diagrams, mapping nerve pathways).
- Writing short academic essays or reports on anatomical variations and their clinical significance.
- Preparation for practical exercises and assessments on anatomical specimens and models.
- Preparation of reports and multimedia presentations on specific anatomical regions.
- Preparation for interactive lessons (e.g., basic clinical-anatomical case discussions).
- Preparation for multiple-choice and short-answer tests.
- Solving situational (clinical) problems covering all studied topics (e.g., identifying the site of a nerve injury based on symptoms).
- Drawing anatomical diagrams and topographic relationships in a practical notebook.

8.4. Preparing for a Lecture

The lecture is a fundamental form of educational organization that introduces new morphological material, clarifies complex spatial concepts, systematizes knowledge, and provides professional orientation. To maximize productivity, students should:

- Identify the lecture topic from the thematic plan or instructor's announcement.
- Preview the relevant textbook chapters and anatomical atlases.
- Understand the topic's relevance to future clinical disciplines and medical practice.
- Note down key Latin anatomical terms and their translations.
- Attempt to answer preliminary control questions for the topic.
- Create mind maps or concept clusters to organize information (e.g., branching of an artery or innervation of a muscle).
- Identify any unclear concepts.
- Formulate specific questions to ask the lecturer during or after the session.

8.5. How to Take Effective Lecture Notes

Note-taking (from Latin conspectus, meaning "a view" or "summary") is a skill that requires practice, especially in a visually intensive subject like anatomy.

Tips for effective note-taking:

- Do not transcribe verbatim. Attempting to write down everything the instructor says leads to incomplete sentences and loss of logical flow. Focus on capturing the essentials.
- Distinguish primary from secondary. Learn to identify main structures and relationships, but do not omit examples and illustrations, as they are crucial for later understanding.
- Be concise and logical. Notes should be structured like a detailed outline of the lecture.
- Reproduce visuals. Any anatomical diagrams, schemes, or tables presented must be accurately drawn in your notebook. Drawing is a primary method of memorizing anatomy.
- Use visual cues. Use color-coding (e.g., red for arteries, blue for veins, yellow for nerves) or symbols during the lecture to highlight key points (e.g., "!" for important, "?" for clarification needed).
- Leave margins. Leave wide margins in your notebook for later additions, comments, or clarifications from atlases.
- Highlight semantic blocks. Use indentation or highlighting to separate distinct parts of the information (e.g., Origin, Insertion, Action, Innervation of a muscle).
- Develop abbreviations. Create a personal system of abbreviations for frequently used anatomical terms to write less and listen more.

8.6. Solving Situational (Clinical) Tasks

Solving clinical-anatomical scenarios is designed to develop the following student skills:

- Analyzing and systematizing morphological knowledge.
- Integrating anatomical and basic physiological features to build a diagnostic hypothesis (e.g.,

localizing a lesion based on motor/sensory deficits).

- Argumentatively defending a clinical viewpoint based on anatomical evidence.
- Considering alternative perspectives and anatomical variations.
- Working effectively in a medical team.

8.7. Practical Classes

Practical sessions in Normal Anatomy are conducted in specially equipped anatomy laboratories and dissection rooms. Instructors employ a creative, hands-on approach to enhance the quality of students' practical knowledge. When discussing topics, interactive teaching methods are highly recommended, such as clinical-anatomical case discussions, concept mapping, "jigsaw" (mosaic) learning to trace neurovascular bundles, and using Venn diagrams to compare anatomical variations.

8.8. Interactive Lessons

The primary advantage of interactive lessons is the use of simulated real-world clinical scenarios and 3D visualization, which develop information-seeking skills and significantly enhance students' spatial reasoning. Visual aids, anatomical models, multimedia presentations, and virtual dissection videos facilitate the perception of theoretical material, while solving test and situational tasks consolidates knowledge and develops analytical thinking. The digitalization of medicine necessitates proficiency in educational 3D anatomy software (e.g., Complete Anatomy, Anatomage).

8.9. Distance Learning

When necessary, lectures, practical classes, and assessments may be conducted remotely online.

- Lectures and seminars can be held via platforms such as Zoom, Google Meet, or Microsoft Teams.
- Written assignments (e.g., anatomical notebooks, case reports, or photo/video verification of structure identification on virtual dissection tables) can be submitted via email, messaging apps, or through the university's Learning Management System (e.g., Google Classroom, Moodle).
- Educational and methodological materials are also available on the department's official resources (e.g., university website, official social media pages).
- The content of distance learning is strictly aligned with the thematic plan of the discipline.

Appendix 1.

Midterm Assessment Questions

Theoretical Questions for the Module: «OSTEOSYNDESMOLOGY»

I. General Osteology

1. Introduction to osteology: Definition, functions of the skeleton, and anatomical terminology (planes, axes, and directional terms).
2. Chemical composition of bone tissue and age-related changes in bone structure.
3. Bone as an organ: Structure of compact and spongy bone, periosteum, endosteum, bone marrow, and blood supply.
4. Classification of bones by shape. Structure of a long (tubular) bone (diaphysis, epiphysis, metaphysis).
5. Bone development (osteogenesis): Intramembranous and endochondral ossification. Centers of ossification and bone growth.

II. General Arthrology

1. Classification of joints: Synarthroses (fibrous and cartilaginous joints) and their types.
2. Diarthroses (synovial joints): Basic elements (articular surfaces, capsule, cavity) and auxiliary structures (ligaments, discs, menisci, bursae).
3. Classification of synovial joints by the shape of articular surfaces and axes of movement (uniaxial, biaxial, multiaxial).
4. Development of joints (arthrogenesis) and common congenital anomalies of the skeletal system.

III. Osteology and Arthrology of the Trunk

1. Structure of a typical vertebra. Atypical cervical vertebrae (C1, C2, C7) and their specific features.
2. Atypical thoracic vertebrae (T1, T10, T11, T12) and their specific features.
3. The vertebral column as a whole: Physiological curvatures, biomechanics, and common developmental defects (e.g., spina bifida, scoliosis).
4. Joints of the vertebral column: Intervertebral discs, facet (zygapophyseal) joints, and ligaments of the spine.
5. Atlanto-occipital and atlanto-axial (median and lateral) joints: Structure and movements.
6. The bony thorax: Structure of the sternum and ribs. Sternocostal, costovertebral, and costotransverse joints.

IV. Osteology and Arthrology of the Upper Limb

1. Bones of the pectoral girdle: Clavicle and scapula.
2. Sternoclavicular and acromioclavicular joints: Structure, ligaments, and biomechanics.
3. Bones of the free upper limb: Humerus, radius, ulna, and the bones of the hand.
4. Shoulder (glenohumeral) joint: Structure, ligaments, movements, and clinical significance (e.g., dislocations).
5. Elbow joint: Structure (humeroulnar, humeroradial, proximal radioulnar joints), ligaments, and movements.
6. Radioulnar joints (proximal, middle, distal) and the interosseous membrane of the forearm.
7. Joints of the hand: Radiocarpal (wrist) joint, midcarpal joint, carpometacarpal joints (including the 1st CMC joint of the thumb), metacarpophalangeal, and interphalangeal joints.

V. Osteology and Arthrology of the Lower Limb

1. The bony pelvis as a whole: Bones of the pelvis, dimensions, types (male vs. female), and clinical significance.
2. Sacroiliac joint and ligaments of the pelvis (including the pubic symphysis).
3. Bones of the free lower limb: Femur, patella, tibia, fibula, and the bones of the foot.
4. Hip joint: Structure, ligaments (e.g., iliofemoral ligament), movements, and blood supply to the femoral head.
5. Knee joint: Structure, menisci, cruciate and collateral ligaments, bursae, and biomechanics.
6. Syndesmoses of the leg bones: Distal tibiofibular joint and the interosseous membrane.
7. Ankle (talocrural) joint: Structure, ligaments, and movements.
8. Joints of the foot: Subtalar, talocalcaneonavicular, calcaneocuboid, transverse tarsal (Chopart's joint), and tarsometatarsal (Lisfranc's joint) joints. Arches of the foot and their clinical significance (e.g., flatfoot).

Theoretical Questions for the Module: "skull"

I. Embryology and Development of the Skull

1. General principles of human embryogenesis: germinal stages and the formation of the embryonic disc.
2. Pharyngeal (branchial) arches: skeletal derivatives and congenital defects of the 1st pharyngeal arch.
3. Ossification of the skull: development of the neurocranium and viscerocranium.
4. Age-related features of the skull: periods of growth and the role of synchondroses.
5. The skull of the newborn: anatomy of the fontanelles, their closure timelines, and clinical significance.
6. Types, etiology, and clinical implications of craniosynostosis.

II. General Osteology of the Skull

7. Classification, anatomy, and clinical relevance of the cranial sutures.
8. Bones of the neurocranium (cranial vault): frontal, parietal, and occipital bones (structure and key landmarks).
9. Bones of the neurocranium: sphenoid and ethmoid bones (structure, pneumatization, and key landmarks).
10. The temporal bone: general structure, parts (squamous, tympanic, petrous, mastoid), and key landmarks.
11. Bones of the viscerocranium (facial skeleton): structure and key landmarks of the maxilla, mandible, zygomatic, nasal, lacrimal, palatine, and hyoid bones.

III. Cranial Base and Fossae

12. External surface of the cranial base: key foramina and their contents.
13. Internal surface of the cranial base: Anterior cranial fossa (boundaries, foramina, and contents).
14. Internal surface of the cranial base: Middle cranial fossa (boundaries, foramina, and contents).
15. Internal surface of the cranial base: Posterior cranial fossa (boundaries, foramina, and contents).

IV. Topographic Regions and Cavities of the Skull

16. The orbit: walls, foramina, fissures, and communications with other cranial cavities.
17. The nasal cavity: bony walls, formation of the nasal septum, and the conchae.
18. The nasal meatuses (superior, middle, inferior): anatomy and communications with the paranasal sinuses and nasolacrimal duct.
19. Paranasal air sinuses: anatomy, drainage pathways, and clinical significance (e.g., sinusitis).
20. Topographic regions of the skull: Temporal and Infratemporal fossae (boundaries and contents).
21. The pterygopalatine fossa: boundaries and communications (a key "crossroads" of the head).

V. Detailed Anatomy of the Temporal Bone Canals

22. The canals of the petrous part of the temporal bone: detailed anatomy and contents of the carotid canal, facial canal, chorda tympani canaliculus, tympanic canaliculus, musculo-tubarial canal, and mastoid canaliculus.

VI. Joints and Clinical Anatomy

23. Temporomandibular joint (TMJ): anatomy of articular surfaces, articular disc, ligaments, movements, and clinical relevance (e.g., dislocation).
24. Clinical anatomy of skull fractures: typical locations, mechanisms of injury, and associated neurovascular complications (e.g., Battle's sign, raccoon eyes, CSF rhinorrhea/otorrhea).

Theoretical Questions for the Module: "MYOLOGY"

I. General Myology & Embryology

1. Muscle Tissue Types: Histological and functional differences between skeletal, cardiac, and smooth muscle tissue.
2. Structure of Skeletal Muscle: Macroscopic organization (epimysium, perimysium, endomysium) and microscopic structure (sarcomere, myofibrils, motor unit, neuromuscular junction).

3. Accessory Structures of Muscles: Fascia, tendons, aponeuroses, synovial sheaths, bursae, and sesamoid bones; their functions and clinical significance.
4. Classification of Muscles: By shape, location, number of joints crossed, and function (agonists, antagonists, synergists, fixators).
5. Embryological Development of Muscles: Origin from somites (myotomes) and pharyngeal arches; general principles of muscle migration and innervation.
6. Development of the Diaphragm & Congenital Defects: Embryological origins of the diaphragm; pathogenesis and clinical presentation of congenital diaphragmatic hernias (e.g., Bochdalek, Morgagni).
7. Development of Head and Neck Muscles: Derivatives of the pharyngeal (branchial) arches; congenital anomalies (e.g., congenital muscular torticollis).
8. Development of the Limbs: Myotome migration into limb buds; common congenital abnormalities of limb musculature.

II. Muscles of the Head and Neck

9. Muscles of Facial Expression: Location, function.
10. Muscles of Mastication: Anatomy and biomechanics of chewing.
11. Temporomandibular Joint (TMJ) Kinematics: Muscles responsible for depression, elevation, protrusion, retrusion, and lateral excursion of the mandible.
12. Muscles of the Neck:
- Suprahyoid and infrahyoid muscles.
- Anterior, lateral, and posterior cervical muscle groups.

III. Muscles of the Trunk

13. Muscles of the Thoracic Wall: Extrinsic and intrinsic muscles (intercostals, transversus thoracis, subcostales); biomechanics of respiration.
14. Anterior Abdominal Wall: Muscles (external/internal oblique, transversus abdominis, rectus abdominis), their aponeuroses, and the formation of the rectus sheath above and below the arcuate line.
15. Midline Structures: Linea alba and umbilicus; anatomical weak points and clinical significance (e.g., epigastric and umbilical hernias).
16. The Inguinal Canal: Boundaries, contents (spermatic cord/round ligament), and the anatomical basis of direct vs. indirect inguinal hernias.
17. The Diaphragm: Structure, major openings (caval, esophageal, aortic), and referred pain patterns.
18. Muscles of the Back:
- Superficial (extrinsic) muscles connecting the upper limb to the trunk.
- Deep (intrinsic/epaxial) muscles (erector spinae, transversospinalis) and the suboccipital triangle.

IV. Muscles of the Upper Limb

19. Muscles Connecting the Upper Limb to the Axial Skeleton: Trapezius, latissimus dorse, pectoralis major/minor, serratus anterior; scapular kinematics and "winged scapula."
20. The Axilla: Boundaries, contents, and the communicating axillary spaces (triangular, quadrangular, triangular interval).
21. Muscles of the Arm: Anterior (flexor) and posterior (extensor) compartments.
22. Muscles of the Forearm: Anterior (flexor-pronator) and posterior (extensor-supinator) compartments; superficial, intermediate, and deep layers.
23. The Carpal Tunnel and Flexor Retinaculum: Boundaries, contents.
24. Muscles of the Hand: Thenar, hypothenar, lumbricals, palmar/dorsal interossei; intrinsic hand biomechanics.
25. Muscles Acting on the Shoulder (Glenohumeral) Joint: The rotator cuff (SITS muscles), deltoid, and their role in joint stability and movement.
26. Muscles Acting on the Elbow Joint: Flexors, extensors, pronators, and supinators; anatomical basis of common epicondylitis (tennis/golfer’s elbow).

V. Muscles of the Lower Limb

27. Muscles of the Gluteal Region and Pelvic Wall: Gluteus maximus/medius/minimus, piriformis, obturator internus; relationship to the sciatic nerve and safe injection zones.
28. Muscles of the Thigh: Anterior (extensor), medial (adductor), and posterior (hamstring) compartments; the femoral triangle and adductor (Hunter’s) canal.
29. The Femoral Canal and Femoral Ring: Boundaries, contents, and the anatomical basis of

femoral hernias.
30. Muscles of the Leg: Anterior (dorsiflexors), lateral (evertors), and posterior (plantarflexors) compartments; the popliteal fossa.
31. Muscles of the Foot: Dorsal and plantar compartments (four layers); functional comparison to the hand.
32. Muscles Acting on the Hip Joint: Flexors, extensors, abductors, adductors, and rotators; Trendelenburg sign and gait abnormalities.
33. Muscles Acting on the Knee Joint: Extensor mechanism (quadriceps, patella, patellar ligament) and flexors; biomechanics and common injuries.
34. Arches of the Foot: Medial, lateral, and transverse arches; supporting structures (plantar aponeurosis, ligaments, muscles) and clinical significance (pes planus/flatfoot, pes cavus).

Theoretical Questions for the Module: "DIGESTIVE SYSTEM"

I. ORAL CAVITY & ASSOCIATED STRUCTURES
1. Development of the oral cavity
2. Features of the digestive tract (general overview)
3. Features of teeth (general structure)
4. Development of teeth
5. Deciduous (primary) teeth
6. Permanent teeth
7. Eruption of teeth (timing and sequence)
8. Periodontal membrane and gums
9. Features of the tongue (anatomy, papillae, muscles)
10. Development of the tongue
11. Major and minor salivary glands (anatomy, ducts, relations)

II. PHARYNX & ESOPHAGUS
12. Features of the pharynx (parts, muscles, relations)
13. Development of the pharynx
14. Parts of the esophagus and anatomical relations
15. Constrictions of the esophagus (clinical significance)
16. Development of the esophagus

III. STOMACH & DUODENUM
17. Features of the stomach (parts, curvatures, sphincters)
18. Relations of the stomach (peritoneal and visceral)
19. Features of the duodenum (parts, relations)
20. Development of the duodenum

IV. SMALL INTESTINE
21.Mesenteric part of small intestine (jejunum and ileum)
22.Anatomical differences between jejunum and ileum
23.Development of the small intestine

V. LARGE INTESTINE
24.Features of the large intestine (general characteristics)
25.Anatomical differences between small and large intestine
26.Development of the large intestine
27.Features of the rectum (parts, relations, sphincters)

VI. ACCESSORY DIGESTIVE ORGANS
28. Development of the liver
29. Internal structure of the liver (segments, lobes, portal triad)
30. Relations of the liver (peritoneal and visceral)
31. Features of the gallbladder and common bile duct (anatomy, relations)
32. Development of the pancreas
33. Features of the pancreas (parts, ducts, relations)
34. Features of the spleen (anatomy, relations, functions)

VII. PERITONEUM
35.Development of the peritoneum
36.Features of the peritoneum (layers, spaces, recesses)
37.Course/reflections of the peritoneum (mesenteries, omenta, ligaments)

VIII. CLINICAL TOPOGRAPHY

38. Projection lines of the anterior abdominal wall (surface anatomy, quadrants, regions)

Theoretical Questions for the Module: "RESPIRATORY SYSTEM"

I. Nasal Cavity

1. General Features: Mucous membrane (respiratory vs. olfactory regions) Walls of the Nasal Cavity:

- Superior wall (roof) and its relations to the anterior cranial fossa.
- Lateral wall: Nasal conchae and meatuses (superior, middle, inferior) and their communications.
- Medial wall: Anatomy and features of the nasal septum (cartilaginous and bony parts).

II. The Larynx

3. General Features & Topography: Cartilages, ligaments, and topographical relations in the neck.
4. Intrinsic Muscles of the Larynx:

- Sphincter muscles (adductors of the vocal cords).
- Dilator muscles (abductors of the vocal cords).
- Muscles that tense and relax the vocal ligaments.

5. Internal Anatomy: The vestibule, ventricle, vocal folds, and the conus elasticus (cricothyroid membrane).
6. Embryological Development: Development of the larynx and common congenital anomalies (e.g., laryngeal web, stenosis).

III. Trachea and Bronchial Tree

7. The Trachea: Anatomical features, topographical relations in the neck and superior mediastinum, and embryological development.
8. The Bronchial Tree: Hierarchy of branching (primary, secondary/lobar, and tertiary/segmental bronchi).
9. The Alveolar Tree: Respiratory bronchioles, alveolar ducts, alveolar sacs, and the histological structure of the blood-air barrier.
10. Embryological Development: Development of the trachea and lungs, including common congenital defects (e.g., tracheoesophageal SW fistula, pulmonary agenesis).

IV. The Lungs

11. Gross Anatomy: Lobes, fissures, surfaces, and borders of the right and left lungs.
12. Bronchopulmonary Segments: Definition, anatomical features, and clinical significance (e.g., segmental resection).
13. Root and Hilum of the Lung:

- Structures forming the root (pulmonary artery, pulmonary veins, main bronchus, bronchial vessels, nerves, lymphatics).
- Topographical arrangement of hilar structures (differences between right and left lungs).

V. The Mediastinum

14. General Features: Boundaries and subdivisions of the mediastinum.
15. Superior Mediastinum: Contents and topographical relations.
16. Anterior Mediastinum: Contents (e.g., thymus remnants, lymph nodes, internal thoracic vessels).
17. Middle Mediastinum: Contents (pericardium, heart, roots of the great vessels, phrenic nerves).
18. Posterior Mediastinum: Contents (esophagus, thoracic aorta, thoracic duct, azygos/hemiazygos venous system, vagus nerves, sympathetic trunks).

VI. Topographically Related Endocrine Organs

19. Thyroid Gland: Anatomical features, lobes, isthmus, pyramidal lobe, fascial relations (pretracheal fascia).
20. Parathyroid Glands: Features and topographical relations to the thyroid gland and recurrent laryngeal nerves.
21. Thymus Gland: Anatomical features, age-related involution, and relations in the anterior/superior mediastinum.

Theoretical Questions for the Module: "UROGENITAL SYSTEM"

I. Embryology and Development

1. General Development: Origin from intermediate mesoderm; stages of kidney development (pronephros, mesonephros, metanephros).

2. Gonadal Development & Descent: Development of testes and ovaries; mechanism of testicular descent (gubernaculum, processus vaginalis) and common anomalies (e.g., cryptorchidism).
3. Development of Genital Ducts & External Genitalia: Differentiation of mesonephric (Wolffian) and paramesonephric (Müllerian) ducts; development of external genitalia and common congenital defects (e.g., hypospadias, epispadias, bicornuate uterus).
II. The Urinary System
4. The Kidneys: Macroscopic and microscopic structure (nephron, renal cortex, medulla, pyramids, columns); fascial coverings (renal capsule, perirenal fat, renal fascia); and topographical relations (hilum, retroperitoneal relations).
5. The Ureters: Anatomical course, three physiological constrictions, topographical relations in the abdomen and pelvis.
6. The Urinary Bladder: Internal structure (trigone, detrusor muscle), topographical relations (male vs. female), and ligamentous support.
7. The Urethra: Anatomical and topographical differences between the male urethra (prostatic, membranous, spongy parts) and the female urethra.
III. The Male Reproductive System
8. Testes and Epididymis: Internal structure, tunics, and topographical relations within the scrotum.
9. The Scrotum: Anatomical layers (Dartos fascia, cremasteric muscle/fascia) and clinical significance (e.g., varicocele, hydrocele, testicular torsion).
10. The Spermatic Cord and Ductus Deferens: Contents, anatomical course through the inguinal canal, and relations.
11. Male Accessory Glands: Structure, topography, and functions of the prostate gland, seminal vesicles, and bulbourethral (Cowper's) glands.
12. Endocrine Control: Hormonal regulation of male reproduction (Hypothalamic-Pituitary-Gonadal axis).
IV. The Female Reproductive System
13. The Ovaries: Internal structure, ligamentous attachments (suspensory ligament, ovarian ligament, mesovarium), and topographical relations.
14. The Uterine (Fallopian) Tubes: Anatomical parts (infundibulum, ampulla, isthmus, intramural), and clinical significance (e.g., ectopic pregnancy).
15. The Uterus: Structure (fundus, body, cervix), layers (perimetrium, myometrium, endometrium), normal positions, and support mechanisms (cardinal and uterosacral ligaments, pelvic floor).
16. The Vagina and External Genitalia (Vulva): Anatomy, relations.
17. The Menstrual Cycle: Anatomical and histological correlates of the endometrial changes.
V. Perineum and Pelvic Topography
18. The Perineum: Boundaries, subdivisions (urogenital and anal triangles), and contents (e.g., ischioanal fossae, pudendal canal).
19. The Pelvic Floor: Anatomy of the levator ani and coccygeus muscles (pelvic diaphragm) and their role in pelvic organ support.
20. Peritoneal Reflections in the Pelvis: Formation of the rectouterine pouch (Pouch of Douglas), vesicouterine pouch, and the broad ligament of the uterus.
VI. The Endocrine Integration
22. The Suprarenal (Adrenal) Glands: Macroscopic structure, relations to the kidneys and major vessels (IVC, aorta).

Theoretical Questions for the Module: “Central nerve system”
1. The classification of the nervous system.
2. The neuron, types, " white matter", "gray matter".
3. Development of the spinal cord, neural tube defect.
4. The reflex arc.
5. The external features of the spinal cord.
6. The grey matter of the spinal cord.
7. The white matter of the spinal cord.
8. The meninges of the spinal cord, the spaces.

9. Development of the brain.
10. The features of the medulla oblongata, lesions.
11. The features of the pons, innervations of facial muscles.
12. The features of midbrain, lesions.
13. The fourth ventricle, features.
14. The external features of cerebellum.
15. The internal structure of the cerebellum, nuclei.
16. The cerebellar connections input and output.
17. The cerebellar control of posture, vestibule-ocular reflex.
18. The diencephalon, features, thalamus, lesions.
19. The epithalamus, penial body, features.
20. The hypothalamus, features, nuclei.
21. The hypophisis cerebri features.
22. The third ventricle features.
23. The cerebral hemisphere, features, lesions.
24. The superiolateral surface of the cerebral hemisphere.
25. The medial and inferior surface of the cerebral hemisphere.
26. The layers the cerebral cortex, types of cells, neocortex, allocortex.
27. The functional anatomy of the cerebral cortex. Brodmann areas.
28. The basal ganglia, features, lesions.
29. The limbic system, lesions.
30. White matter of the cerebral hemispheres, corpus callosum, fornix.
31. The internal capsule, parts, arrangement of fibers.
32. The classification of the conductive tracts (association, commissural, projection).
33. The spinothalamic tract (anterior and lateral).
34. The anterior and posterior spinocerebellar tract. Caneocerebellar tract.
35. The dorsal column medial lemniscus tract.
36. The pyramidal tracts: corticonuclear and corticospinal (anterior, lateral).
37. The rubrospinal tract.
38. The lateral ventricle, features.
39. The meninges of the brain. Dura mater: layers, processes, sinuses.
40. The arachnoids mater of the brain, subarachnoid space, cisternas, and circulation of the cerebrospinal fluid.
41. The pie matter of the brain, cerebrospinal fluid, hydrocephalus

Theoretical Questions for the Module: "sensory organs"
1. The classification of the sense (special and general).
2. The sensory receptors.
3. The length of eyeball, normal vision.
4. The fibrous coat of the eyeball.
5. The vascular coat of the eyeball.
6. The nervous coat of the eyeball, retina.
7. The chambers of the eyeball, aqueous humor, glaucoma.
8. The refractive media of the eyeball: vitreous body, lens, cataract.
9. The contains of orbit.
10. The muscles of the eyeball.
11. The eyelids, features.
12. The lacrimal apparatus.
13. The visual pathway.
14. Development of the eye.
15. The organ of hearing and equilibrium, features.
16. External ear, features.
17. Middle ear: tympanic cavity, auditory tube.
18. The auditory ossicles.
19. Internal ear: bony labyrinth.
20. Internal ear: membranous labyrinth.
21. Sound pathway, hearing loss.

22. The vestibular system of internal ear.
23. The vestibular pathway, lesions.
24. Why do we get dizzy?
25. Development of the ear.
26.Organ of taste.
27. Organ of smell.
28. Skin, features.
29. Mammary gland, features

Theoretical Questions for the Module: "vessels and nerves of the head and neck"

1. The development of the heart.
2. The chambers of the heart.
3. The wall of the heart, features.
4. The conducting system of the heart.
5. The blood supply of the heart.
6. The pericardium, features.
7. The development of the arteries.
8. Arch of aorta, branches, topography.
9. Externa carotid artery, branches.
10. Internal carotid artery, branches.
11. Subclavian artery, branches.
12. Superior vena cava, formation, tributares.
13. The venous sinuses of the dura matter, the emissary and diploic veins.
14. Internal jugular vein, tributaries.
15. External jugular vein, tributaries.
16. Anterior jugular vein.
17. Subclavian vein, tributaries.
18. Lymph of head and neck.
19. The spinal nerves, features.
20. The cervical plexus, branches.
21. III, IV, V pairs of the cranial nerves.
22. V cranial nerves, nuclei branches.
23. Vegetative ganglions of the trigeminal nerves.
24. The vagus nerve, parts, branches.
25. The glossopharyngeal nerve, nuclei branches.
26. XI, XII pairs of the cranial nerves.

The questions for vessels and nerve of the thoracic, abdominal and pelvic cavities.

1. The various pattens in the branches of the intraorganic arteries.
2. Collateral blood circulation.
3. Development of the veins.
4. Blood sypply of the featus.
5. The systemic circulation.
6. The pulmonary circulation.
7. The thoracic aorta, branches.
8. The superior vena cava: azygos and hemiazygos veins, brachiocephalic veins.
9. The abdominal aorta, branches.
10. The inferior vena cava, tributaries.
11. The portal vein, tributaries.
12. Internal iliac artery, branches.
13. Internal ilia vein, venous plexuses of the pelvic.
14. The immune system features.
15. The lymphatic system features.
16. The structure of the lymph node.
17. The lymph nodes, vessels and ducts of the thoracic cavity.
18. The lymph nodes, vessels and ducts of the abdominal cavity.
19. The lymph nodes, vessels of the pelvic cavity.

20. The sympathetic part of the vegetative nerve system.
21. The parasympathetic part of the vegetative nerve system.
22. Sympathetic trunk, parts, branches.
23. Cavacaval and portocaval anastomosis.
24. Lumbar plexus, formation, branches.
25. Sacral plexus, formation, short branches.
26. Intercostal nerves, branches.

Theoretical Questions for the Module: "vessels and nerves of the upper and lower limbs"

1. The axillary artery, branches.
2. The axilla, walls and foramens, their contains.
3. The brachial artery, branches.
4. The ulnar artery, branches.
5. The radial artery, branches.
6. The anastomosis of the cubital fossa.
7. The anastomosis of the hand.
8. The anatomical snuffbox, formation, contains.
9. The superficial veins of upper limb.
10. The deep veins of the upper limb.
11. The lymph nodes and vessels of the upper limb.
12. The short branches of the brachial plexus.
13. The long branches of the brachial plexus.
14. The femoral artery, branches.
15. The adductor canal, walls and contain.
16. The popliteal artery, branches.
17. The anterior tibial artery, branches.
18. The posterior tibial artery, branches.
19. The cruropopliteal canal, walls and contain.
20. Arteries of the foot.
21. The superfecial veins of the lower limb.
22. The deep veins of the lower limb.
23. The lymph nodes and vessels of the lower limb.
24. The long branches of the sacral plexus.
25. The lumbar plexus: femoral and obturator nerves, lateral cutaneous nerve of the thigh.

Appendix 2

Exam ticket variants
Module: Osteosyndesmology

Cards: 1

1. Development of the bones. Endochondral ossification.
2. Ankle joint.

Point the localization:

1. Median sacral crest.
2. Interspinous ligament.
3. Capitulum of humerus.
4. Ulnar collateral ligament.
5. Greater trochanter.
6. Medial malleolus.
7. Interosseus boder of tibia.
8. Tarsal bones.
9. Interphalangeal joints.
10. Glenoid labrum.

Cards: 2

1. The synarthroses.
2. Joints of the hand and fingers

Point the localization:

1. Anterior tubercle of atlas.
2. Intermediate sacral crest.
3. Supraspinous ligament.
4. Coronoid fossa of humerus.
5. Radial collateral ligament.
6. Intertrochanteric line.
7. Auricular surface of ilium.
8. Promontory.
9. Interosseous ligament.
10. Medial epicondyle of humerus.

Cards: 3

1. Type of bones. The parts of the tubular bone.
2. Wrist joint.

Point the localization:

1. Lateral sacral crest.
2. Ligamentum nuchae.
3. Ulnar collateral ligament.
4. Anular ligament of radius.

5. Wing of ilium.
6. Line aspera.
7. Anterior superior iliac spine.
8. Sacrospinous ligament.
9. Line terminalis.
10. Intertrochanteric line.

Module: Skull

Card 1

1. Development of cerebral skull.
2. Internal surface of the base of the skull.

Point the localization

1. Foramen magnum.
2. Foramen spinosum.
3. Squamous part of occipital bone.
4. Groove for inferior petrosal sinus.
5. Temporal surface of frontal bone.
6. Perpendicular plane of ethmoid bone.
7. Infratemporal surface of maxilla.
8. Palatine bone.
9. Oblique line.
10. Zygomaticofacial formen.

Card 2

1. Orbit.
2. The chorda tympani canal.

Point the localization:

1. Basilar part of occipital bone.
2. Formen rotundum.
3. Tympanic part of temporal bone.
4. Mastoid notch.
5. Opening of frontal sinus.
6. Cribriforme plate.
7. Maxillary tuber.
8. Perpendicular plate of palatine bone.
9. Mandibular foramen.
10. Zygomaticotemporal foramen.

Card 3

1. Nasal cavity.
2. Middle cranial fossa.

Point the localization:

1. Lateral part of occipital bone.
2. Superior orbital fissure.
3. Petrous part of temporal bone.
4. Groove for sigmoid sinus.

5. Nasal spine of frontal bone.
6. Ethmoid labyrinth.
7. Greater palatine foramen.
8. Pyramidal process of palatine bone.
9. Mental spines.
10. Lacrimal bone.

Module: Myology

Card 1

Theory questions:

1. Axillary fossa, features, spaces
2. Muscles of the pelvic wall and gluteal region.

Point the localization:

1. Trapezius muscle.
2. Thoracolumbar fascia.
3. Platysma muscle.
4. Corrugator supercilii muscle.
5. Deltoid muscle.
6. Abductor pollicis longus muscle.
7. Pronator teres muscle.
8. Adductor longus muscle.
9. Abductor hallicis muscle.
10. Lumbrical muscles.

Card 2

Theory questions:

1. The muscles, which give mobitlity to the knee joint.
2. Muscles of the arm.

Point the localization:

1. Longissimus muscle.
2. Serratus anterior muscle.
3. Transversus abdominis muscle.
4. Stylohyoid muscle.
5. Depressor labi inferior muscle.
6. Palmaris longus muscle.
7. Abductor pollicis brevis muscle.
8. Semitendinosus muscle.
9. Peroneus longus muscle.
10. Superficial inguinal ring.

Card 3

Theory questions:

1. Diaphragm, features.
2. Muscles of the neck.

Point the localization:

1. Serratus posterior inferior muscle.
2. Pectoralis minor muscle.
3. Occipitofrontalis muscle.
4. Medial pterygoid muscle.
5. Subscapularis muscle.
6. Extensor digitorum muscle.
7. Triangular space.
8. Piriformis muscle.
9. Extensor digitorum longus muscle.
10. Popliteus muscle.

Module: Gastro Intestinal tract

Card 1

Theory questions:

1. The features of the palate.
2. The features of the duodenum.

Point localization:

1. Papillaes of the tongue.
2. Quadrate lobe of liver.
3. Transverse mesocolon.
4. Permanent teeth.
5. Esophagus, parts.
6. Pancreas, parts.
7. Vestibule of the mouth.
8. Fundus of stomach.
9. Greater omentum.
10. Waldeyears lymphatic ring.

Card 2

Theory questions:

1. The features of the teeth.
2. The salivary glands, features.

Point the localization:

1. Pharynx.
2. Common bile duct.
3. Major duodenal papilla.
4. Relevant features of the large intestine.
5. Root of mesentery.
6. Muscles of pharynx.
7. Lesser curvature of stomach.
8. Greater sac.
9. Tubal tonsil.
10. Foramen cecum.

Card 3

Theory questions:

1. The features of stomach.
2. The features of the liver.

Point the localization:

1. Orpharyngeal isthmus.
2. Jejunum.
3. Ligamentum venosum.
4. Canines, incisors.
5. Constrictions of esophagus.
6. Duodenojejunal flexure.
7. Deciduous teeth.
8. Greater curvature of stomach.
9. Porta hepatis.
10. Piriform fossa.

Module: Respiratory system

Card 1

Theory questions:

1. The features of the larynx.
2. Bronchial and alveolar trees.

Point the localization:

1. Choanae.
2. Visceral pleura.
3. Lingula of lungs.
4. Main bronchi.
5. Semilunar hiatus.
6. Root of lung.
7. Bifurcation of trachea.
8. Pleural recesses.
9. Cricoid cartilage.
10. Membranous wall of the trachea.

Card 2

Theory questions:

1. The features of the lung.
2. Nasal cavity features.

Point the localization:

1. Thyrohyoid membrane.

2. Parietal pleura.
3. Sphenoethmoidal recess.
4. Oblique fissure.
5. Mucous membrane of nasal cavity, parts.
6. Epiglottis.
7. Arytenoid cartilage.
8. Ethmoidal bulla.
9. Cavity of the larynx, parts.
10. Oblique fissure.

Card 3

Theory questions:

1. The features of the trachea.
2. Nasal cavity features.

Point the localization:

1. Choanae.
2. Visceral pleura.
3. Lingula of lungs.
4. Main bronchi.
5. Semilunar hiatus.
6. Mucous membrane of nasal cavity, parts.
7. Epiglottis.
8. Arytenoid cartilage.
9. Ethmoidal bulla.
10. Cavity of the larynx, parts.

Module: Urogenital system

Card 1

Theory questions:

1. The features of the kidney.
2. The prostate, male urethra.

Point the localization:

1. Trigone of urinary bladder.
2. Spermatic cord.
3. Preputce.
4. Suspensory ligament of ovary.
5. Bulbospongiosus muscle.
6. Narrowings of the ureter.
7. Epididymis.
8. Seminal vesicles.
9. Graafian follicle.
10. Greater vestibular gland.

Card 2

Theory questions:

1. Ureter, features and topography.
2. The features of the ovary.

Point the localization:

1. Renal pyramid.
2. Ductus deferens.
3. Corpus spongiosum.
4. Round ligament of uterus.
5. Labia minora.
6. Ureter, parts.
7. Mediastinum testis.
8. Scrotum.
9. Mesovarium.
10. Ischiocavernosus muscle.

Card 3

Theory questions:

1. Uterine tubes.
2. Suprarenal glands.

Point the localization:

1. Major calices.
2. Ampulla of ductus deferens.
3. Borders of ovary.
4. Bulbs of vestibule.
5. Superficial transverse perineal muscle.
6. Renal cortex, parts.
7. Bulbourethral gland.
8. Epididymis, parts.
9. Fornix of vagina.
10. Levator ani muscle.

Module: Central nerve system

Card 1

Theory questions:

1. Hypothalamus, features, nuclei
2. Spinocereberallar tracts. Cuneocerebellar tract

Practical questions:

1. Cauda equina

2. Decussation of pyramids
3. Rhomboid fossa
4. Interpeduncular fossa
5. Precentral gyrus
6. Superior parietal lobule
7. Cuneus
8. Olive
9. Superior colliculus
10. Tuber cinereum

Card 2

Theory questions:

1. The lateral ventricle features
2. The diencephalon, features, thalamus, lesions

Practical questions:

1. Spinal ganglion
2. Dentate nucleus
3. Optic chiasm
4. Opercular part
5. Corpus callosum
6. Lentiform nucleus
7. Falx cerebri
8. Middle cerebellar peduncle
9. Vermis
10. Cerebral aqueduct

Card 3

Theory questions:

1. Pyramidal tracts.
2. The grey matter of the spinal cord.

Practical questions:

1. Filum terminale
2. Cuneate tubercle
3. Fastigial nucleus
4. Medial geniculate body
5. Optic tract
6. Central sulcus
7. Olfactory bulb
8. Roots of the spinal cord
9. Flocculonodular lobe
10. Habenular trigone

Module: Sensory organs

Card 1

- Describe the structure of the eyelids
- Describe the structure of the external ear
- 11th cranial nerve

Show the locations of the following structures:

- ✓ Pupil
- ✓ Anterior semicircular canal
- ✓ Origin of 3rd CN in the brain
- ✓ Recurrent laryngeal nerve
- ✓ Optic disc

Card 2

- Describe lacrimal apparatus
- 5th cranial nerve
- Identify the termination of the optic nerve in the brain, the foramen through which it exits the skull, and its function.

Show the locations of the following structures:

- ✓ Corneal limbus
- ✓ Vestibule
- ✓ Origin of 4th CN in the brain
- ✓ Otic ganglion
- ✓ Choroid

Card 3

- Describe walls of orbit
- 4th cranial nerve
- Describe the structure of the tympanic membrane

Show the locations of the following structures:

- ✓ Lacrimal punctum
- ✓ Cochlea
- ✓ Origin of 5th CN in the brain
- ✓ Submandibular ganglion
- ✓ Iris

Module: Vessels and nerves of the head and neck

Card № 1

Theory questions:

1. Thyrocervical trunk, internal thoracic artery.
2. Lymph of head and neck.

Practical questions:

1. Superficial temporal artery
2. Superior intercostal artery
3. Cavernous sinus
4. Internal jugular vein
5. Transverse cervical nerve
6. Pulmonary trunk
7. Zygomatic nerve
8. Interventricular septum, parts
9. Jugular foramen
10. Optic canal

Card № 2

Theory questions:

1. External carotid artery, anterior and posterior branches.
2. The wall of the heart.

Practical questions:

1. Inferior thyroid artery
2. Transverse cervical artery
3. Inferior petrosal sinus
4. Tricuspid valve
5. Greater auricular nerve
6. Oblique sinus
7. Frontal nerve
8. Inferior alveolar nerve
9. Superior orbital fissure
10. Foramen lacerum

Card № 3

Theory questions:

1. Chambers of the heart.
2. IV and VI cranical nerves.

Practical questions:

1. Vertebral artery, basilary artery
2. Middle meningeal artery
3. Inferior sagittal sinus
4. External jugular vein
5. Ansa cervicalis
6. Greater cardiac vein
7. Buccal nerve

8. XII cranial nerve
9. Valve of aorta
10. Internal acoustic meatus

Module: Vessels and nerves of the cavities

Card № 1

Theory questions:

1. The thoracic duct, formation, topography.
2. Sacral plexus, short branches.

Point the localization:

1. Vertebral vein
2. Right gastric vein
3. Portal vein
4. Ilioinguinal nerve
5. Inferior mesenteric artery
6. Common iliac vein
7. Obturator artery
8. Deep circumflex iliac artery
9. Stellate ganglion
10. Inferior hypogastric plexus

Card № 2

Theory questions:

1. Thoracic aorta, branches.
2. Lumbar plexus: obturator nerve, femoral nerve

Point the localization:

1. Left common carotid artery
2. Thoracic duct
3. Inferior epigastric artery
4. Vagus nerve
5. Common hepatic artery
6. Iliohypogastric nerve
7. Middle sacral artery
8. External iliac vein
9. Superior hypogastric plexus
10. Inferior vesical artery

Card № 3

Theory questions:

1. Superior and inferior mesenteric arteries.
2. Inferior vena cava, tributaries.

Point the localization:

1. Right gastroepiploic artery
2. Posterior intercostal artery
3. Superior vena cava
4. Phrenic nerve
5. Superior epigastric artery

6. Testicular artery
7. Genitofemoral nerve
8. Internal pudental artery
9. Lateral sacral artery
10. Umbilical vein

Module: Vessels and nerves of the limbs

Card № 1

The theory questions:

1. The ulnary artery, branches.
2. The long branches of the sacral plexus.

Point the localization:

1. Lateral thoracic artery.
2. Common interosseus artery.
3. Basilic vein.
4. Median nerve.
5. Suprascapular nerve.
6. Profunda femoral artery.
7. Cruropopliteal canal.
8. Lateral plantar artery.
9. Obturator nerve.
10. Sural nerve.

Card № 2

The theory questions:

1. The femoral artery, branches.
2. The median and ulnar nerves.

Point the localization:

1. Anterior circumflex humeral artery.
2. Deep palmar arch.
3. Long thoracic nerve.
4. Axillary nerve.
5. Descending genicular artery.
6. Superfecial branch of radia nerve.
7. Posterior tibial artery.
8. Deep plantar artery.
9. Lateral cutaneus nerve of the thigh.
10. Deep perineal nerve.

Card № 3

The theory questions:

1. The veins of the upper limb.
2. The long branches of sacral plexus.

Point the localization:

1. Profunda branchial artery.
2. Ulnar artery.
3. Trunks of brachial plexus.

4. Deep branch of radial nerve.
5. Lateral utaneus nerve of the foramen.
6. External pudendal artery.
7. Plantar arch.
8. Small saphenus vein.
9. Saphenus nerve.
10. Adductor canal.

Appendix 3

Problem-based clinical questions
Module: Osteosyndesmology

Clinical Scenario:
A 65-year-old woman slips on ice and falls on her outstretched right hand. Her wrist is bent backward, creating a visible "dinner fork" deformity. An X-ray confirms a fracture.
Questions:
Which specific bone and which part of that bone (e.g., shaft, distal end) is fractured in this classic injury?
Which specific joint is directly affected by this fracture?
Structurally and functionally, what type of synovial joint is this?

Clinical Scenario:
A 20-year-old soccer player steps on another player's foot, forcing his right ankle to roll inward (inversion). He feels a "pop" and immediately develops pain and swelling on the outer (lateral) side of his ankle.
Questions:
Name the three bones that articulate to form the ankle (talocrural) joint.
Which specific ligament is most commonly torn in this type of inward-rolling injury?
Anatomically, why are inward (inversion) ankle sprains much more common than outward (eversion) sprains? (Name two reasons).

Clinical Scenario:
A 19-year-old football player is tackled with his arm raised high and pulled backward. He feels a "pop" in his shoulder. On examination, his shoulder looks "squared off" instead of rounded, and he is holding his arm slightly away from his body, refusing to move it.
Questions:
Which specific joint has been dislocated?
In which direction does this joint most commonly dislocate, and why?
What type of synovial joint is the shoulder, and what specific bony feature makes it highly mobile but prone to dislocation?

Module: Skull

Clinical Scenario:
A 25-year-old male is punched directly in the chin. He experiences severe pain, swelling, and notices that his teeth no longer fit together properly. An X-ray confirms a fracture.
Questions:
Which specific bone is fractured, and what is the name of its narrow, weak "neck" region that commonly breaks from a direct impact to the chin?
Which specific joint connects this bone to the skull?
Structurally and functionally, what type of synovial joint is this?
Clinical Scenario:

A 30-year-old female yawns very widely and suddenly feels a "pop." Her jaw gets stuck in an open position, and she is unable to close her mouth. She is brought to the clinic for reduction.

Questions:

During this dislocation, the mandibular condyle slips anteriorly and becomes trapped in front of which specific bony landmark of the temporal bone?

Which bone contains both the mandibular (glenoid) fossa and this bony landmark?

What structure normally sits between the mandibular condyle and the temporal bone to prevent direct bone-on-bone friction?

Clinical Scenario:

A 20-year-old male is hit on the side of his face with a baseball. He develops swelling over his cheek and finds it painful and difficult to open his mouth fully. An X-ray reveals a depressed fracture of the zygomatic arch.

Questions:

Which two bones fuse to form the zygomatic arch?

When the patient tries to open their mouth, which specific bony process of the mandible moves downward and can get trapped or impinged by a fractured zygomatic arch?

What is the primary joint responsible for the depression (opening) of the mandible?

Module: Myology

Clinical Scenario:

A 55-year-old painter complains of pain and weakness when lifting his right arm overhead. He specifically notes difficulty initiating the movement of lifting his arm straight out to the side, particularly during the first 15 degrees. After this initial movement, he can continue lifting his arm, but the first part of the motion is painful and weak.

Questions:

Which specific muscle is primarily responsible for initiating the first 15 degrees of arm abduction?

Where does this muscle originate, and where does it insert on the humerus?

Which larger, more superficial muscle takes over the primary action of arm abduction after the first 15 degrees?

Clinical Scenario:

A 40-year-old man is playing a recreational game of tennis. While sprinting forward to hit a ball, he feels a sudden, sharp "pop" in the back of his right calf, describing it as feeling "like being kicked." He is now unable to stand on his tiptoes or push off the ground with that foot.

Questions:

Which specific tendon has most likely ruptured in this classic injury?

Which two major superficial muscles of the posterior leg merge to form this tendon?

What is the primary action of these muscles at the ankle joint that the patient has lost?

Clinical Scenario:

A surgeon is performing an open appendectomy and makes a gridiron (McBurney) incision in the right lower quadrant of the abdomen. To reach the peritoneal cavity, the surgeon must carefully split the muscle fibers of three distinct, flat muscular layers of the anterolateral abdominal wall.

Questions:

Name the three flat muscles of the anterolateral abdominal wall that the surgeon encounters, listed from superficial to deep.

In which direction do the muscle fibers of the most superficial of these three muscles run?

If the surgeon had instead made a vertical midline incision, which vertical, strap-like muscle would be encountered, and what is the name of the fibrous sheath that encloses it above the umbilicus?

Module: Gastrointestinal tract

Clinical Scenario:

A 20-year-old male presents with abdominal pain that started around his umbilicus and has now localized to the right lower quadrant. Physical examination reveals maximal tenderness at McBurney's point. Additionally, when the physician passively extends the patient's right hip, the patient experiences sharp pain in the right lower quadrant (a positive "psoas sign").

Questions:

Based on the positive psoas sign, what is the most likely anatomical position of the patient's appendix?

Which specific peritoneal fold attaches the appendix to the posterior abdominal wall and contains its fat?

During an open appendectomy via a gridiron (McBurney) incision, list the muscular and fascial layers of the anterolateral abdominal wall that must be traversed to reach the peritoneal cavity.

Clinical Scenario:

A 45-year-old male with a history of chronic indigestion presents with sudden, severe, generalized abdominal pain. His abdomen is rigid and "board-like." An upright chest X-ray reveals free air trapped under the right hemidiaphragm. The surgeon suspects a perforated peptic ulcer.

Questions:

Based on the presence of free air under the right hemidiaphragm, which specific wall of the first part of the duodenum is most likely perforated?

If the perforation had occurred on the posterior wall of the first part of the duodenum, into which specific, enclosed peritoneal space would the gastrointestinal contents initially leak?

What specific peritoneal fold forms the anterior boundary of the opening (epiploic foramen) that connects the greater sac to the space mentioned in Question 2?

Clinical Scenario:

During an emergency exploratory laparotomy for a suspected bowel obstruction, the surgeon encounters a massively dilated loop of bowel. To determine whether this is the small or large intestine before proceeding, the surgeon inspects its external surface.

Questions:

Name the three distinct macroscopic features visible on the external surface of the large intestine that are absent on the small intestine.

The surgeon identifies the cecum and the junction with the terminal ileum. What is the name of the muscular and mucosal valve that prevents the retrograde flow of colonic contents into the small intestine?

To mobilize the ascending colon and access the structures behind it, the surgeon must incise a specific peritoneal reflection on its lateral side. What is the anatomical name for this lateral attachment?

Module: Respiratory system

Clinical Scenario:

A 60-year-old male presents with shortness of breath. A chest X-ray reveals a large accumulation of fluid in the right pleural cavity (pleural effusion). The physician decides to perform a therapeutic thoracentesis (pleural tap) to drain the fluid.

Questions:

Which specific anatomical space (recess) of the pleural cavity is the most dependent and typically targeted for fluid drainage?

To perform this procedure safely, between which ribs (intercostal space) and along which vertical anatomical line is the needle most commonly inserted?

When inserting the needle into the intercostal space, exactly where should it be placed relative to the ribs to avoid injuring the intercostal neurovascular bundle, and what is the order of structures in that bundle (from superior to inferior)?

Clinical Scenario:

A 4-year-old child is playing with small toys and suddenly begins coughing violently and wheezing. The parents report he may have inhaled a small plastic bead. A chest X-ray confirms a radiopaque foreign body in the lower respiratory tract.

Questions:

In which main bronchus (right or left) is the foreign body most likely to lodge? Provide three anatomical reasons why.

If the patient was upright when the aspiration occurred, into which specific bronchopulmonary segment does the foreign body most commonly fall?

At the root (hilum) of the right lung, what is the specific topographic relationship of the right main bronchus to the right pulmonary artery?

Clinical Scenario:

A 35-year-old patient experiences a severe allergic reaction (anaphylaxis) leading to rapid swelling of the upper airway. The patient is in severe respiratory distress, and an emergency surgical airway (cricothyrotomy) must be established immediately.

Questions:

Which specific anatomical membrane or ligament is incised during an emergency cricothyrotomy?

What are the superior and inferior cartilaginous boundaries of this membrane?
If a formal surgical tracheostomy were to be performed lower down (e.g., at the 2nd–3rd tracheal rings), which major vascular structure lies immediately anterior to the trachea in the superior mediastinum and is at risk of injury?

Module: Urogenital system

Clinical Scenario:
A 25-year-old male falls astride a bicycle crossbar, sustaining a direct straddle injury to his perineum. He experiences severe pain and difficulty urinating. A few hours later, he notices swelling and bruising in his scrotum, penis, and lower anterior abdominal wall, but notably, the swelling does not extend down into his thighs.

Questions:
Which specific part of the male urethra is most commonly ruptured in this classic mechanism of injury?
Into which specific anatomical space does the extravasated urine initially leak?
Anatomically, why does the urine spread to the lower abdominal wall but is prevented from spreading down into the thighs?

Clinical Scenario:
A 20-year-old male presents with a painless swelling in his right scrotum that becomes more prominent when he stands, coughs, or strains. Physical examination reveals that the swelling is located within the layers of the spermatic cord and can be traced superiorly back to the superficial inguinal ring.

Questions:
Through which specific anatomical opening in the transversalis fascia does this condition originate before entering the inguinal canal?
Name the primary muscular or aponeurotic layer that forms the anterior wall of the inguinal canal along its entire length.
Which specific fetal peritoneal structure, if it fails to obliterate after testicular descent, creates the potential space (sac) for this type of swelling (e.g., indirect inguinal hernia or communicating hydrocele)?

Clinical Scenario:
A 28-year-old female presents with sudden, severe lower abdominal pain and dizziness. She has a history of missed periods. Ultrasound reveals free fluid in the lowest part of the peritoneal cavity when the patient is in a standing or semi-upright position. The physician decides to perform a diagnostic needle aspiration through the posterior vaginal wall to check for blood.

Questions:
What is the anatomical name of this specific, most dependent peritoneal space in the female pelvis where the fluid has accumulated?
Which two pelvic organs form the primary anterior and posterior boundaries of this specific peritoneal pouch?
Through which specific anatomical region of the vagina is the needle inserted to access this space, and what is the very next structure pierced after passing through the vaginal wall?

Module: Central Nervous System

Clinical Scenario:

A 25-year-old male sustains a stab wound to the right side of his mid-thoracic back. Neurological examination reveals loss of fine touch, vibration, and conscious proprioception in his right leg. He also has spastic paralysis in his right leg. However, he has lost pain and temperature sensation in his left leg.

Questions:

Which specific ascending sensory tract is damaged on the right side, causing the loss of fine touch and proprioception on the same side below the lesion?

Which specific descending motor tract is damaged on the right side, causing the spastic paralysis on the same side below the lesion?

Anatomically, why does the patient lose pain and temperature sensation on the left side of the body, even though the injury is on the right side of the spinal cord?

Clinical Scenario:

A newborn is diagnosed with non-communicating (obstructive) hydrocephalus. An MRI reveals massive, symmetrical enlargement of both lateral ventricles, but the third and fourth ventricles are completely normal in size.

Questions:

Which specific anatomical opening is most likely obstructed, preventing cerebrospinal fluid (CSF) from flowing from the lateral ventricles into the third ventricle?

If the obstruction were instead located at the level of the cerebral aqueduct (of Sylvius), which specific ventricles would appear enlarged on the MRI?

Name the specific vascular structures located within the ventricles that are primarily responsible for the continuous production of CSF.

Clinical Scenario:

A patient develops a slow-growing tumor in the posterior cranial fossa that compresses the cerebellum. They present with a wide-based, unsteady gait (ataxia), an intention tremor when reaching for objects, and difficulty performing rapid alternating movements (dysdiadochokinesia).

Questions:

Which specific functional division (or lobe) of the cerebellum is primarily responsible for coordinating voluntary movements of the limbs and is most likely affected in this patient?

Through which specific cerebellar peduncle do the majority of afferent (input) fibers from the cerebral cortex (relayed via the pontine nuclei) enter the cerebellum?

Name the four deep cerebellar nuclei (from lateral to medial) that serve as the primary output centers of the cerebellum.

Module: Sensory organs

Clinical Scenario:

A 55-year-old patient presents to the clinic complaining of double vision. On examination, the patient's right eye is resting in a "down and out" position. The right upper eyelid is drooping (ptosis), and the right pupil is abnormally dilated and does not constrict when a light is shined into it.

Questions:
Which specific cranial nerve is damaged or compressed in this scenario?
Through which specific opening (foramen/fissure) in the skull does this nerve exit the cranial cavity to reach the orbit?
Which specific muscle is primarily responsible for elevating the upper eyelid and is paralyzed in this condition?

Clinical Scenario:
A 30-year-old patient wakes up with sudden weakness on the right side of their face. They are unable to close their right eye tightly, smile, or puff out their right cheek. They also report that food tastes "bland" on the anterior two-thirds of their right tongue.
Questions:
Which specific cranial nerve is affected?
Through which specific foramen does this nerve exit the skull to reach the face?
Which specific facial muscle is primarily responsible for closing the eyelid and is paralyzed in this condition?

Clinical Scenario:
A 60-year-old patient is recovering from a minor head injury. During a neurological exam, the physician asks the patient to stick out their tongue. The tongue protrudes, but it clearly deviates (points) to the right side.
Questions:
Which specific cranial nerve is damaged?
Through which specific canal in the skull does this nerve exit the cranial cavity?
Which specific muscle of the tongue is primarily responsible for protrusion, and anatomically, why does the tongue deviate toward the side of the injury?

Module: Vessels and nerves of the head and neck

Clinical Scenario:
A 22-year-old football player is tackled and strikes the side of his head (the temple region) against the ground. He has a brief loss of consciousness, wakes up feeling fine (a "lucid interval"), but a few hours later deteriorates rapidly with a severe headache and a dilated, unresponsive pupil on the same side. A CT scan shows a biconvex (lens-shaped) collection of blood between the skull and the dura mater.
Questions:
What is the specific anatomical landmark (formed by the junction of four bones) that was fractured in this classic injury?
Which specific artery runs in the grooves on the inner surface of this bone and was torn, causing the bleeding?
Which specific cranial nerve is compressed by the expanding hematoma, causing the dilated pupil on the affected side?

Clinical Scenario:
A surgeon is performing a total thyroidectomy to remove a large goiter. While carefully ligating the blood vessels at the lower pole of the thyroid gland, the surgeon must be

extremely cautious to avoid damaging a nearby nerve. Post-operatively, the patient's voice is noticeably hoarse.

Questions:

Which specific artery is being ligated at the lower pole of the thyroid gland?
Which specific nerve is at high risk of injury during this step due to its close and variable anatomical relationship with this artery?
Through which specific opening in the skull does this nerve ultimately exit the cranial cavity before descending into the neck?

Clinical Scenario:

A patient sustains a deep, horizontal laceration to the middle of the anterior triangle of the neck (specifically the carotid triangle). The surgeon must explore the wound to control bleeding and assess for nerve damage.

Questions:

What is the name of the specific fascial compartment that encloses the major vertical neurovascular bundle in this region?
Name the three primary structures contained within this sheath (one major artery, one major vein, and one cranial nerve).
Within this sheath, what is the typical topographic relationship of the nerve relative to the artery and the vein?

Module: Vessels and nerves of the cavities

Clinical Scenario:

A 50-year-old patient presents with a large accumulation of fluid in the pericardial sac (pericardial effusion). The physician performs a pericardiocentesis, inserting a needle just to the left of the xiphoid process, aiming upward and backward toward the left shoulder. The patient later complains of pain referred to the tip of the left shoulder.

Questions:

Which specific nerve provides motor innervation to the diaphragm and sensory innervation to the central part of the pericardium (explaining the referred shoulder pain)?
Which specific artery and vein run directly alongside this nerve on the surface of the pericardium?
Through which specific opening in the diaphragm (and at what vertebral level) does this nerve pass to reach the abdominal surface?

Clinical Scenario:

A surgeon is dissecting the lesser omentum (hepatogastric ligament) to access the lesser curvature of the stomach. The surgeon must carefully identify and preserve the main arterial supply to the stomach and the primary parasympathetic nerve supply running along this curvature.

Questions:

Which major unpaired artery branches directly from the abdominal aorta at the level of T12 to supply the stomach, liver, and spleen?
Which specific branch of this artery runs along the lesser curvature of the stomach between the layers of the lesser omentum?

Which specific cranial nerve provides the primary parasympathetic innervation to these foregut organs, and through which specific diaphragmatic opening (and vertebral level) does it enter the abdomen?

Clinical Scenario:
During a hysterectomy (surgical removal of the uterus), the surgeon must clamp and cut the main blood supply to the uterus near the lateral aspect of the cervix. The surgeon must be extremely careful to identify a specific tubular structure that passes directly underneath this artery to avoid accidental ligation or transection.
Questions:
What is the name of the specific artery (a branch of the internal iliac artery) that supplies the uterus and crosses superior to this tubular structure?
What is the name of the tubular structure that is at high risk of injury in this specific location?
Which specific somatic nerve, providing sensory innervation to the perineum and motor innervation to the external urethral sphincter, exits the pelvis through the greater sciatic foramen and is also at risk during deep pelvic lateral wall dissections?

Module: Vessels and nerves of the limbs

Clinical Scenario:
A 25-year-old male falls on an outstretched arm and sustains a fracture of the mid-shaft of his right humerus. On examination, he is unable to extend his wrist or fingers, resulting in a characteristic "wrist drop." He also reports numbness on the back of his hand.
Questions:
Which specific nerve is most likely injured in this classic fracture, and in which specific bony groove on the posterior humerus does it normally travel?
Which specific artery travels directly alongside this nerve in that same groove and is also at risk of injury?
What is the primary motor action lost due to this nerve injury?

Clinical Scenario:
A healthcare worker attempts to draw blood from a patient’s median cubital vein. As the needle is inserted, the patient feels a sudden, sharp, "electric shock" sensation radiating down the forearm into the thumb and index finger.
Questions:
Which specific nerve lies immediately deep and slightly medial to the median cubital vein in the cubital fossa and was likely nicked by the needle?
Which major artery lies just medial to this nerve in the cubital fossa, making it another critical structure at risk during deep or misplaced venipuncture?
What is the name of the broad, flat fibrous membrane that forms the medial part of the floor of the cubital fossa, protecting these neurovascular structures from the underlying elbow joint?

Clinical Scenario:
A 20-year-old soccer player sustains a direct, forceful tackle to the lateral (outer) aspect of their right knee. A few hours later, they are unable to lift their right foot upward (dorsiflexion) and have numbness on the top (dorsum) of the foot.
Questions:
Which specific, narrow bony landmark on the lateral side of the knee is the most common site for compression or injury to the nerve responsible for these symptoms?
Which specific nerve is injured, and from which major nerve of the posterior thigh does it branch?
Which specific osteofascial compartment of the leg contains the muscles that are paralyzed in this condition, leading to the inability to dorsiflex the foot?

Appendix 4

MCQs

Module: Osteosyndesmology

1. Which of the following anatomical features is uniquely characteristic of all typical cervical vertebrae (C3–C6)?
A) A long, downward-pointing spinous process
B) A transverse foramen
C) Costal facets on the lateral aspects of the vertebral body
D) A massive, kidney-shaped vertebral body
E) Prominent mammillary and accessory processes

2. Which bony landmark on the proximal humerus serves as the primary attachment site for the supraspinatus, infraspinatus, and teres minor muscles?
A) Lesser tubercle
B) Greater tubercle
C) Surgical neck
D) Anatomical neck
E) Deltoid tuberosity

3. Which of the following structures is located on the posterior surface of the femoral shaft and serves as the major attachment site for the adductor muscles of the thigh?
A) Greater trochanter
B) Linea aspera
C) Intercondylar fossa
D) Patellar surface
E) Lesser trochanter

4. Which specific part of the sternum articulates directly with the medial end of the clavicle to form the sternoclavicular joint?
A) Jugular (suprasternal) notch
B) Manubrium
C) Sternal angle (Angle of Louis)
D) Body of the sternum
E) Xiphoid process

5. Which tarsal bone articulates directly with the distal ends of both the tibia and the fibula to form the primary hinge of the ankle (talocrural) joint?
A) Calcaneus
B) Talus
C) Navicular
D) Cuboid
E) Medial cuneiform

Module: Skull

1. Which of the following cranial bones contains the foramen magnum, the large opening through which the spinal cord passes?
A) Frontal bone
B) Parietal bone
C) Temporal bone
D) Occipital bone
E) Sphenoid bone

2. Which facial bone is the only movable bone of the skull and articulates with the temporal bone to form the temporomandibular joint (TMJ)?
A) Maxilla
B) Zygomatic bone
C) Mandible
D) Nasal bone
E) Palatine bone

3. Which suture is located between the two parietal bones of the skull?
A) Coronal suture
B) Sagittal suture
C) Lambdoid suture
D) Squamous suture
E) Frontal suture
4. Which bone forms the "keystone" of the cranial floor because it articulates with all other cranial bones?
A) Ethmoid bone
B) Frontal bone
C) Occipital bone
D) Sphenoid bone
E) Temporal bone
5. Which specific part of the temporal bone articulates with the mandibular condyle to form the temporomandibular joint?
A) Mastoid process
B) Styloid process
C) Mandibular fossa (glenoid fossa)
D) Zygomatic process
E) Petrous part

Module: Myology

1. Which muscle of the anterolateral abdominal wall has muscle fibers that run in an inferomedial direction (often described as the direction of "putting your hands in your front pockets")?
A) Transversus abdominis
B) Internal oblique
C) External oblique
D) Rectus abdominis
E) Pyramidalis

2. Which of the following muscles is NOT a component of the rotator cuff of the shoulder?
A) Supraspinatus
B) Infraspinatus
C) Teres minor
D) Subscapularis
E) Teres major
3. Which specific movement is primarily produced by the muscles located in the anterior compartment of the leg?
A) Plantarflexion of the foot
B) Inversion of the foot
C) Dorsiflexion of the foot
D) Eversion of the foot
E) Flexion of the knee
4. Which muscle of the anterior thigh is unique among the quadriceps femoris group because it crosses both the hip and knee joints, allowing it to flex the hip and extend the knee?
A) Vastus lateralis
B) Rectus femoris
C) Sartorius
D) Pectineus
E) Gracilis
5. Which specific muscle is primarily responsible for initiating the abduction of the arm at the glenohumeral joint during the first 0 to 15 degrees of movement?
A) Deltoid
B) Supraspinatus
C) Infraspinatus
D) Teres major
E) Pectoralis major

Module: Gastrointestinal tract

1. Which specific peritoneal fold connects the greater curvature of the stomach to the transverse colon?
A) Hepatogastric ligament
B) Gastrocolic ligament
C) Gastrosplenic ligament
D) Hepatoduodenal ligament
E) Falciform ligament
2. Which of the following is a macroscopic anatomical feature found exclusively on the large intestine and is completely absent on the small intestine?
A) Plicae circulares (valves of Kerckring)
B) Villi and microvilli
C) Taeniae coli
D) Peyer’s patches
E) Brunner’s glands

3. Which part of the duodenum is entirely retroperitoneal and crosses the midline horizontally, anterior to the vertebral column at the level of the L3 vertebra?
A) Superior (first) part
B) Descending (second) part
C) Horizontal (third) part
D) Ascending (fourth) part
E) Hepatopancreatic ampulla
4. Which anatomical landmark within the anal canal marks the transition from the columnar epithelium of the hindgut to the stratified squamous epithelium of the proctodeum?
A) Anorectal ring
B) Pectinate (dentate) line
C) White line of Hilton
D) Anal valves
E) Rectal columns (of Morgagni)
5. The esophagus has several normal anatomical constrictions. Which of the following structures causes the most inferior (lowest) normal constriction of the esophagus?
A) The cricopharyngeus muscle (upper esophageal sphincter)
B) The tracheal bifurcation (carina)
C) The left main bronchus
D) The esophageal hiatus of the diaphragm
E) The root of the lung

Module: Respiratory system

1. Into which specific region of the nasal cavity does the nasolacrimal duct primarily drain?
A) Sphenoethmoidal recess
B) Superior nasal meatus
C) Middle nasal meatus
D) Inferior nasal meatus
E) Common nasal meatus
2. Which laryngeal cartilage is the only one that forms a complete, 360-degree ring around the airway and serves as the foundational base for the larynx?
A) Thyroid cartilage
B) Cricoid cartilage
C) Arytenoid cartilage
D) Epiglottic cartilage
E) Corniculate cartilage
3. Which of the following anatomical descriptions accurately distinguishes the right main (primary) bronchus from the left main bronchus?
A) It is longer, narrower, and more horizontal.
B) It is shorter, wider, and more vertical.
C) It bifurcates into only two lobar bronchi.
D) It has a more acute angle of departure from the trachea.
E) It is entirely extrapulmonary and lacks cartilaginous support.

4. Which specific fissure is consistently present in the right lung to separate the superior and middle lobes, but is typically absent in the left lung?
A) Oblique (major) fissure
B) Horizontal (minor) fissure
C) Accessory fissure
D) Mediastinal fissure
E) Basal fissure
5. During quiet respiration, which specific pleural recess represents the most dependent (lowest) part of the pleural cavity, where excess fluid (pleural effusion) is most likely to accumulate?
A) Costomediastinal recess
B) Costodiaphragmatic recess
C) Phrenicomediastinal recess
D) Pulmonary ligament
E) Cervical pleura (cupula)

Module: Urogenital system

1. Which specific fascial layer directly encloses the kidney and its associated perirenal fat, separating them from the surrounding pararenal fat?
A) Transversalis fascia
B) Renal (Gerota's) fascia
C) Parietal peritoneum
D) Dartos fascia
E) Scarpa's fascia
2. Which specific anatomical landmark within the urinary bladder defines the smooth, triangular area bounded by the two ureteric orifices and the internal urethral orifice?
A) Detrusor muscle
B) Uvula vesicae
C) Trigone of the bladder
D) Interureteric crest
E) Apex of the bladder
3. In the normal anatomical position of the female reproductive organs, the uterus is typically described as being both anteflexed and anteverted. What does the term "anteverted" specifically describe?
A) The forward bending of the uterine body relative to the cervix
B) The forward angulation of the entire uterus (cervix and body) relative to the axis of the vagina
C) The posterior tilt of the uterine fundus into the rectouterine pouch
D) The lateral displacement of the uterine fundus toward the pelvic sidewall
E) The superior positioning of the ovaries relative to the uterine tubes
4. Which specific peritoneal recess represents the most dependent (lowest) part of the peritoneal cavity in a standing or semi-upright female, located between the rectum and the posterior wall of the uterus/vagina?
A) Vesicouterine pouch
B) Rectouterine pouch (Pouch of Douglas)
C) Pararectal fossa

D) Hepatorenal recess (Morison's pouch)
E) Omental bursa (Lesser sac)
5. The ureter exhibits three normal anatomical constrictions along its course from the kidney to the bladder. Which of the following represents the most inferior (lowest) of these constrictions?
A) The ureteropelvic junction
B) The point where it crosses the pelvic brim
C) The intramural segment as it pierces the bladder wall
D) The midpoint of its retroperitoneal descent
E) The junction with the minor renal calyces

Module: Central Nervous System

1. The majority of fibers in the lateral corticospinal tract decussate (cross over) at which specific anatomical location before descending into the spinal cord?
A) Anterior white commissure of the spinal cord
B) Medullary pyramids
C) Midbrain cerebral peduncles
D) Posterior limb of the internal capsule
E) Pontine tegmentum
2. Cerebrospinal fluid (CSF) produced in the lateral ventricles must pass through which specific opening to enter the third ventricle?
A) Median aperture (Foramen of Magendie)
B) Lateral apertures (Foramina of Luschka)
C) Interventricular foramen (Foramen of Monro)
D) Cerebral aqueduct (Aqueduct of Sylvius)
E) Central canal of the spinal cord
3. Which specific meningeal space normally contains circulating cerebrospinal fluid (CSF), the major cerebral veins, and the arachnoid granulations responsible for CSF reabsorption?
A) Epidural space
B) Subdural space
C) Subarachnoid space
D) Subpial space
E) Extracranial space
4. Which of the following deep cerebellar nuclei is the largest, most laterally positioned, and primarily involved in the planning and timing of voluntary movements of the distal limbs?
A) Fastigial nucleus
B) Globose nucleus
C) Emboliform nucleus
D) Dentate nucleus
E) Red nucleus
5. Which major white matter structure serves as the primary commissural pathway, connecting the homologous cortical areas of the left and right cerebral hemispheres?
A) Internal capsule
B) Corpus callosum

C) Fornix
D) Anterior commissure
E) Corona radiata

Module: Sensory organs

1. Which specific structure within the bony labyrinth of the inner ear contains the sensory receptors (cristae ampullares) responsible for detecting rotational acceleration and deceleration of the head?
A) Cochlea
B) Saccule
C) Utricle
D) Semicircular canals
E) Vestibular aqueduct
2. The maxillary division of the trigeminal nerve (CN V2) exits the middle cranial fossa to enter the pterygopalatine fossa through which specific bony opening?
A) Foramen ovale
B) Foramen rotundum
C) Foramen spinosum
D) Superior orbital fissure
E) Stylomastoid foramen
3. Through which specific bony canal does the optic nerve (CN II) and the ophthalmic artery exit the cranial cavity to reach the orbital cavity?
A) Superior orbital fissure
B) Optic canal
C) Inferior orbital fissure
D) Foramen rotundum
E) Anterior ethmoidal foramen
4. Which extraocular muscle is uniquely innervated by the trochlear nerve (CN IV) and is primarily responsible for the intorsion and depression of the eye?
A) Superior rectus
B) Inferior oblique
C) Superior oblique
D) Lateral rectus
E) Medial rectus
5. Which specific nerve provides general sensory innervation (touch, pain, and temperature) to the anterior two-thirds of the tongue?
A) Facial nerve (CN VII) via the chorda tympani
B) Glossopharyngeal nerve (CN IX)
C) Lingual nerve (a branch of the mandibular nerve, CN V3)
D) Hypoglossal nerve (CN XII)
E) Vagus nerve (CN X)

Module: Vessels and nerves of the head and neck

1. Which of the following structures is located within the carotid sheath in the neck?
A) External carotid artery
B) Internal jugular vein
C) Cervical sympathetic trunk

D) Ansa cervicalis
E) Phrenic nerve
2. The mandibular division of the trigeminal nerve (CN V3) exits the middle cranial fossa to enter the infratemporal fossa through which specific bony opening?
A) Foramen rotundum
B) Foramen ovale
C) Foramen spinosum
D) Superior orbital fissure
E) Jugular foramen
3. As the facial artery courses toward the face, it characteristically grooves the posterior and superior surfaces of which structure before hooking around the inferior border of the mandible?
A) Masseter muscle
B) Submandibular gland
C) Stylohyoid muscle
D) Parotid gland
E) Anterior belly of the digastric muscle
4. A fracture at the pterion (the junction of the frontal, parietal, temporal, and sphenoid bones) is highly likely to lacerate which specific artery, potentially leading to an epidural hematoma?
A) Superficial temporal artery
B) Middle meningeal artery
C) Anterior meningeal artery
D) Occipital artery
E) Maxillary artery (main trunk)
5. During a thyroidectomy, ligation of the superior thyroid artery must be performed as close to the upper pole of the gland as possible to avoid injuring which nearby nerve?
A) Recurrent laryngeal nerve
B) External branch of the superior laryngeal nerve
C) Internal branch of the superior laryngeal nerve
D) Hypoglossal nerve
E) Glossopharyngeal nerve

Module: Vessels and nerves of the cavities

1. Which specific nerve provides motor innervation to the diaphragm and sensory innervation to the central part of the diaphragmatic and mediastinal pleura, traveling alongside the pericardiacophrenic vessels?
A) Vagus nerve (CN X)
B) Phrenic nerve
C) Greater splanchnic nerve
D) Intercostal nerve
E) Sympathetic trunk
2. Which unpaired branch of the abdominal aorta is primarily responsible for supplying the foregut derivatives, including the stomach, liver, spleen, and proximal duodenum?
A) Superior mesenteric artery
B) Inferior mesenteric artery

C) Celiac trunk
D) Renal artery
E) Gonadal artery
3. In the female pelvis, the ureter passes directly inferior to which specific artery as it courses medially toward the urinary bladder, creating the classic "water under the bridge" anatomical relationship?
A) Internal pudendal artery
B) Superior vesical artery
C) Uterine artery
D) Ovarian artery
E) Obturator artery
4. Through which specific opening in the diaphragm do the anterior and posterior vagal trunks enter the abdominal cavity to provide parasympathetic innervation to the gastrointestinal tract?
A) Caval opening (T8)
B) Esophageal hiatus (T10)
C) Aortic hiatus (T12)
D) Sternocostal triangle (Foramen of Morgagni)
E) Lumbocostal triangle (Foramen of Bochdalek)
5. The pudendal nerve, which provides somatic motor and sensory innervation to the perineum, exits the pelvic cavity through the greater sciatic foramen and then re-enters the perineum through which specific opening?
A) Lesser sciatic foramen
B) Obturator canal
C) Sacrotuberous ligament
D) Inguinal canal
E) Pelvic inlet

Module: Vessels and nerves of the limbs

1. A patient presents with "wrist drop" following a mid-shaft fracture of the humerus. Which nerve is most likely injured, and which specific artery travels directly alongside it in the radial (spiral) groove?
A) Median nerve and brachial artery
B) Ulnar nerve and superior ulnar collateral artery
C) Radial nerve and deep artery of the arm (profunda brachii)
D) Axillary nerve and posterior circumflex humeral artery
E) Musculocutaneous nerve and radial collateral artery
2. During a venipuncture in the cubital fossa, it is critical to know the anatomical arrangement of the major structures to avoid accidental injury. What is the correct order of these structures from medial to lateral?
A) Biceps tendon, Brachial artery, Median nerve
B) Median nerve, Brachial artery, Biceps tendon
C) Brachial artery, Median nerve, Biceps tendon
D) Radial nerve, Brachial artery, Median nerve
E) Ulnar nerve, Brachial artery, Biceps tendon

3. Within the femoral triangle, which of the following correctly lists the major neurovascular structures from lateral to medial?
A) Femoral vein, Femoral artery, Femoral nerve, Empty space, Lymphatics
B) Femoral nerve, Femoral artery, Femoral vein, Empty space (femoral canal), Lymphatics
C) Femoral artery, Femoral nerve, Femoral vein, Lymphatics, Empty space
D) Femoral nerve, Femoral vein, Femoral artery, Empty space, Lymphatics
E) Femoral artery, Femoral vein, Femoral nerve, Empty space, Lymphatics
4. A patient sustains a direct, forceful blow to the lateral aspect of the knee. They subsequently develop "foot drop" (inability to dorsiflex the foot) and numbness over the dorsum of the foot. Which nerve is most likely compressed or injured at this specific location?
A) Tibial nerve
B) Sural nerve
C) Common fibular (peroneal) nerve
D) Saphenous nerve
E) Sciatic nerve (proximal to its bifurcation)
5. Which of the following statements accurately describes the anatomical course of the great saphenous vein?
A) It originates from the lateral side of the dorsal venous arch of the foot and passes posterior to the lateral malleolus.
B) It ascends anterior to the medial malleolus and drains into the femoral vein at the saphenous opening.
C) It pierces the deep fascia in the popliteal fossa to drain directly into the popliteal vein.
D) It travels entirely within the deep fascial compartment of the thigh alongside the femoral artery.
E) It originates from the deep venous system of the calf and has no superficial tributaries.

Appendix 5

Discipline flow chart (General Medicine)

Discipline: Normal anatomy
Option/track:
Group:
Credits quantity: ZE = 5
Reporting: credit and exam report card
Senior lecturer:

Subject name	Control	Control forms			
Module 1					
1. "Osteosyndesmology", "Skull"	current control	General questioning, notes, practical task	3	5	7
	midterm examination	tests	5	9	
Module 2					
2. "Myology"	current control	General questioning, notes, practical task	3	5	10
	midterm examination	tests	5	9	
Module 3					
3. "Digestive system"	current control	General questioning, notes, practical task	3	5	12
	midterm examination	tests	5	9	
Module 4					
4. "Respiratory system"	current control	General questioning, notes, practical task	3	5	14
	midterm examination	tests	5	9	
Module 5					
5. "Urogenital system "	current control	General questioning, notes, practical task	3	5	17
	midterm examination	tests	5	9	
Attendance			2	2	
Total points per semester			40	70	

Midpoint assessment (tests)			20	30	
Semestral rating of descipline			60	100	

Remarks:

1. **For each absence in lecture or practical session – reduce 1 point.**

Discipline flow chart (General Medicine)

Discipline: Anatomy
Option/track: 31050150_15_13ld.pli.xml
Group:
Credits quantity: ZE = 5
Reporting: credit and exam report card
Senior lecturer:

Subject name	Control	Control forms			
Module 1					
1. "Central nervous system"	current control	General questioning, notes, practical task	3	5	24
	midterm examination	tests	5	9	
Module 2					
2. "Cranial nerves and sense organs"	current control	General questioning, notes, practical task	3	5	25
	midterm examination	tests	5	9	
Module 3					
3. "Heart, vessels and nerves of head and neck"	current control	General questioning, notes, practical task	3	5	27
	midterm examination	tests	5	9	
Module 4					
4. "Vessels and nerves of cavities"	current control	General questioning,	3	5	34

		notes, practical task			
	midterm examination	tests	5	9	
Module 5					
5. "Vessels and nerves of limbs "	current control	General questioning, notes, practical task	3	5	36
	midterm examination	tests	5	9	
Attendance			2	2	
Total points per semester			40	70	
Midterm examination (exam)			20	30	
Semestral rating of descipline			60	100	

Remarks:

1. **For each absence in lecture or practical session – reduce 1 point.**

Formative assessment: - mastering the educational material on the in-class session (lectures and practical session) and performance of the required tasks for independing work.

The scale of formative assessment

1st semester

Module	**Practical session, hour**	**Lectures, hour**	**Share in percentage, %**	**Points**	
				min	**max**
Module 1 Osteosyndesmology, skull	26	6	42	8	14
Module 2 Myology	10	6	17	3	6
Module 3 Digestive System	8	8	14	5	9
Module 4 Respiratory system	8	2	13	3	5
Module 5 Urogenital system	8	8	14	7	12
Total	60	30	100	26	46

№ п/п	Discipline control	Share in Percent	Points	
			min	max
1	General questioning	0-60 %	15	27
2	Conspectus	0-10 %	3	5
3	Practical session	0-30 %	8	14
4	Activity		2	2
5	Attendance		2	2
6	Midterm examination		10	20
7	Total		40	70

2nd semester

Module	Practical session, hour	Lectures, hour	Share in percentage, %	Points	
				min	max
Module 6 Central nervous system	16	10	26	8	15
Module 7 Sensory organs	8	6	14	5	9
Module 8 Vessels and nerves of the head and neck	14	4	23	3	4
Module 9 Vessels and nerves of cavities	12	6	20	5	9
Module 10 Nerves and vessels of the limbs	10	4	17	5	9
Total	60	30	100	26	46

№ п/п	Discipline control	Share in Percent	Points	
			min	max
1	General questioning	0-60 %	15	27
2	Conspectus	0-10 %	3	5
3	Practical session	0-30 %	8	14
4	Activity		2	2
5	Attendance		2	2
6	Midterm examination		10	20
7	Total		40	70

Criteria for educational work during 1st semester are the amount from 30 to 50 points – the admission to midpoint assessment.

The tasks for formative assessment – represent by questions

The KNOWLEDGE – 60 % of the right answers

CALL and SHOW – 40 % of the right answers

It is necessary to show on anatomical models ten parts of various organs.

The level of value:

0-100 % 26 – 30 points – excellent
0-85% 21 - 25 points – good
0-50% 15 - 20 points – satisfactory
less than 15 points – unsatisfactory

Midterm examination - checking the completeness of knowledge and abilities is carry out by testing. The level of ability values up to 40 points.

Criteria for testing results and the admission to examination is the positive answer on 60 % of the set questions.

The maximum value of control:
- Formative assessment – 30 points – 30 %;
- Midterm examination – 40 points – 40 %;
- Midpoint assessment (examination) – 30 points – 30 %.

The total result of examination is reflected by a scale:

85 – 100 points – excellent
70 – 84 points – good

60 – 69 points – satisfactory
less than 60 points – unsatisfactory

At the exam the student can get the maximum points - 30. The student can obtain the following marks based on the his/her answers:

21-30 points: He/she has skills in working with the literature. He/she is able to orient in topography and know the structure of organs. The student answers for the questions represented in the task and also can answers for additional questions.

11-20 points: He/she has basic skills in working with literature. He/she is able to find and show parts of the body on the specimens. The student answers for the questions represented in the task, but not fully answers for additional questions.

6-10 points – The student is able to navigate in the structure of the human body. He/she answers not fully for the questions represented in the task and for additional questions.

2-5 points - The student difficulty answers for questions of the task and demonstrates poor knowledge in answering additional questions.

0 points - The student does not know the material.