LINTERNATIONAL HIGHER SCHOOL OF MEDICINE
Department of Anatomy

SYLLABUS

2025-2026
academic year
for students of medical faculty
1 course 1st semester, groups 1-43 and 2nd semester, groups 1-3
17 credits (510 h, including auditorial 306 h, independent work – 204 h)

Teachers:
Dzhumashalieva A.U.
+996772872070(Whatsapp)
Email: d_aselya_28_02@mail.ru

Toktobekova A.T.
+996505905090 (Whatsapp)
Email:bekbol.begimkulov@mail.ru

Moldozhunusov E.U.
+996707407713 (Whatsapp)
Email: iboobi10@gmail.com

Imetkulova Zh.B.
+996709300730 (Whatsapp)
Email: imetkulova123@mail.ru

Duishenova K.Sh.
+996559338787 (Whatsapp)
Email:ms.kalyiman@mail.ru

Abdyldaeva N.Sh.
+996555237547 (Whatsapp)
Email: nur6986@mail.ru

Yusupaliev T. K.
+996777466558 (Whatsapp)
Email: taalaibekkamilovich@mail.ru

Teachers:
Kasmambetova Sh.K.
+996704598597
Email:shaiyrkulkasmambetova@yandex.ru

Erkegulova A.Sh.
+996501558558
Email:Adelyaerk1999@gmail.com

Abdurakhmanova A. A.
+996776095525 (Whatsapp)
Email: Aabdurahmanova769@gmail.com

Shamshieva E.L.
+996509993888
Email: Elya.shamshieva@gmail.com

Tagaev D.A.
+996507160695

Rakhmatov N.A.
+996555744715

Altynbekova A.A.
+996777400678

Venue: Lev Tolstoy 114/1, Morphological campus, 3rd and 4th floor

The Syllabus is considered

at the meeting of the department of _____
Protocol №_____dated_____2025
Head of the department_____

Course Objective: Formation of students' knowledge of human anatomy, topographic anatomy and human histology all the body as a whole and individual organs and systems, on the basis of modern achievements in macro- and microscopy; the ability to use knowledge in the subsequent study of other fundamental and clinical disciplines, as well as in the future professional activity of a doctor.

After study of the discipline the student must:

Knowledge:

1.Principles of using anatomical terminology and logical basis of argumentation
2. Basic rules and techniques for continuous professional and personal self-education as a student and doctor.
3. Regularities of the structure of the human body as a whole, anatomical, histological and functional relationships of individual parts of the body with each other.
4. Medical products provided for the procedure for carrying out research in the field of human anatomy and histology.
5. Basic information and communication technologies, information resources and bibliographic databases.
6. Anatomical and physiological features of the structure of an adult and child's body. Basic methods of clinical and laboratory examination and assessment of the functional state of the body.
7. Main sources of scientific and medical information in the field of anatomy and rules for working with library resources.

Skill:

1. Develop communication skills and interaction with the team
2. Find and work with quality resources for continuous professional and personal self-education.
3. Orient and describe the topography and details of the structure of organs and tissues on anatomical and histological preparations.
4. Determine the scope of application of medical devices provided for the procedure for carrying out research in the field of human anatomy and histology.
5. Use educational, scientific, popular science literature, the Internet; find and show organs, tissues, their parts, structural details on anatomical macro-preparations and histological micro-preparations, name them correctly in English and Latin; find and show the organs and tissues, their parts, details of their structure in images obtained by various visualization methods.
6. Interpret the results of the morphological analysis of the surgical and sectional material.
7. Conduct a primary search for scientific and medical information in the field of anatomy and use library resources.

Attitude:

1. The principles of humanism and mercy, respectful and careful attitude towards the object being studied - the tissues and organs of the human body, the corpse; instilling highly moral standards of behavior in the section halls of the university.
2. Rules and techniques for continuous professional and personal self-education, the ability to organize one's activities for self-education and self-improvement.
3. Medical-anatomical conceptual apparatus; the simplest medical instruments (tweezers, scalpel) and light microscopy methods.
4. Skills in determining the purpose of medical devices, the scope of their application and the algorithm for their use in the study of anatomical and histological structures.
5. Proficient in basic technologies for converting information: text, spreadsheet editors, Internet search.
6. Skills in expressing and using acquired knowledge about the structure of tissues, organs and systems of adults, children and adolescents for the timely diagnosis of diseases and pathological processes.
7. Skills in selecting high-quality sources of scientific and medical information in the field of anatomy on the topic of research.

Pre-requisites:

- School Chemistry
- School Biology

Post-requisites:

- All clinical subjects;
- Pathology

Anatomy

THEMATIC PLAN OF LECTURES

1st semestr				
№	Unit	Topic of Lecture	Hour	Date
1	Osteology and embryology	1.Introduction to Anatomy. The General anatomy of a skeleton. Development of bones and anomaly of development of bones.	2	According to the timetable
		2.The subject and objectives of histology, cytology and embryology, their place in medical education and their importance for medical science and practice. The tissue as one of the levels of organization of the living. Definition. Classification. Epithelial tissues: integumentary and glandular. The concept of cell populations. Stem cells and their properties. Regenerative capacity and limits of tissue variability.	2	According to the timetable
		3..Anatomy of the Skull and Trunk Bones	2	According to the timetable
		4.Bones of the upper limb.	2	According to the timetable
		5.Bones of the lower limb.	2	According to the timetable
		6. Mammalian embryology as a basis for understanding the characteristics of human embryonic development. Extra-embryonic organs. Medical embryology. The subject and tasks of human embryology. Human embryogenesis.	2	According to the timetable
		Total	**12**	
2	Syndesmology	7.Introduction. General anatomy of the joints. Classification	2	According to the timetable
		8.The joints of the skull and trunk	2	According to the timetable
		9.The joints of the shoulder girdle and upper limbs	2	According to the timetable
		10.The joints of the pelvic girdle and lower limbs	2	According to the timetable
		11. General histology. Histology of blood and lymph. Hematopoiesis. The connective tissues themselves. Skeletal connective tissues. Muscle tissue. Nerve tissue.	2	According to the timetable
		Total	**10**	
3	Myology	12.Introduction. General anatomy of the muscles and fascias. Development and anomalies during the development of muscles. Classification	2	According to the timetable
		13.The muscles and fascias of the head and neck	2	According to the timetable
		14.The muscles and fascias of the trunk	2	According to the timetable
		15.The muscles and fascias of the upper limbs	2	According to the timetable
		16.The muscles and fascias of the lower limbs	2	According to the timetable
		Total	**10**	
4	Splanchnology	17.Anatomy of organs of the Digestive system	2	According to the timetable
		18. Histology of the digestive system organs. Histology of the skin and its derivatives.	2	According to the timetable

		19.Anatomy of organs of the Respiratory system	2	According to the timetable
		20.Anatomy of organs of the Urinary system	2	According to the timetable
		21.Histology of organs of the respiratory system. Histology of organs of the urinary system.	2	According to the timetable
		22.Anatomy of organs of the Male and Female Reproductive systems	2	According to the timetable
		23. Histology of organs of the Male and Female Reproductive systems	2	According to the timetable
		24..Anatomy of organs of the Endocrine system	2	According to the timetable
		Total	**16**	
		Overall	**48**	
2nd - semester				
№	Unit	Topic of Lecture	Hour	
5	Cardiovascular system	1.Introduction to angiology. Development and anomalies of the heart and vessels. Classification	2	According to the timetable
		2.Anatomy of the heart	2	According to the timetable
		3. Histology of the organs of the cardiovascular system.	2	According to the timetable
		4.Anatomy of Blood Vessels of the Head, Neck and Thoracic Cavity	2	According to the timetable
		5. Histology of hematopoietic and immune organs	2	According to the timetable
		6.Anatomy of Blood Vessels of the Abdominal and Pelvic Cavities	2	According to the timetable
		7.Histology of organs of the endocrine system.	2	According to the timetable
		8.Anatomy of Blood Vessels of the upper limbs	2	According to the timetable
		9.Anatomy of Blood Vessels of the lower limbs	2	According to the timetable
		Total	**18**	
6	Central Nervous System	10.Introduction. General anatomy of the Central nervous system. Spinal cord. Tracts of the spinal cord	2	According to the timetable
		11. Histology of the organs of the central nervous system.	2	According to the timetable
		12.Anatomy of the brainstem and cerebellum	2	According to the timetable
		13.Anatomy of the diencephalon and limbic system	2	According to the timetable
		14.Anatomy of the cerebral cortex	2	According to the timetable
		15Anatomy of the internal structure of the cerebrum	2	According to the timetable
		16.Anatomy of the meninges, ventricles and dural sinuses	2	According to the timetable
		17.Anatomy of the sense organs	2	According to the timetable
		18. Histology of the sense organs.	2	According to the timetable
		Total	**18**	
7	Peripheral Nervous System	19.Introduction. General anatomy of the peripheral nervous system. Cervical plexus	2	According to the timetable
		20. Histology of organs of the peripheral nervous system.	2	According to the timetable
		21.Brachial plexus. Thoracic nerves	2	According to the timetable

		22.Lumbar plexus. Sacral plexus	2	According to the timetable
		23.Autonomic nervous system	2	According to the timetable
		24.Cranial nerves	2	According to the timetable
		Total	**12**	
		Overall	**48**	

THEMATIC PLAN OF PRACTICAL CLASSES

I-semester				
№	Unit	Topic of practical class	Hour	Date
1	Osteology	SC.1. Introduction to histology. The subject and objectives of histology and its role within the system of medical sciences. Methods of histological and cytological research and their significance for medical science and clinical practice. Stages of preparation of a histological slide. The Cell: Structural Components and Cytoplasmic Inclusions. The Cell Cycle. Main manifestations of cellular activity: cellular responses to external influences, regeneration, and cell death	2	According to the timetable
		SC.2. Tissues: Development, Structure, Classification, and Function	2	According to the timetable
		SC.3. General Embryology. Embryogenesis. The main stages of vertebrate embryonic development. Cleavage and blastocyst formation. Development of the primitive streak and notochord. Neurulation. Development of somites and intraembryonic structures.	2	According to the timetable
		SC.4. Development of the Trophoblast. The process of implantation and its abnormalities. Formation of extraembryonic organs. The role of the chorion in placental formation. Structure and functions of the placenta. The placental barrier and its significance in maternal–fetal exchange.	2	According to the timetable
		PC.5. Histology of extraembryonic organs: amnion, serous membrane, yolk sac, allantois, chorion. Placenta, its types and structure.	2	According to the timetable
		SC.6. General histology. Histology of epithelial tissues: integumentary, glandular. Histogenesis, regeneration.	2	According to the timetable
		SC 7.Anatomy Introduction. The General anatomy of the skeleton. Classification of bones. Development of bones and anomaly development of bones.	2	According to the timetable
		SC 8. The bones of rib cage. Vertebral column	2	According to the timetable
		PC 9. The bones of the shoulder girdle and upper limbs.	2	According to the timetable
		PC 10. The bones of the pelvic girdle and lower limbs	2	According to the timetable
		PC 11. The Neurocranium	2	According to the timetable
		SC 12. The Viscerocranium	2	According to the timetable
		SC 13. The Skull as a whole	2	According to the timetable

		PC 14.Unit control	2	According to the timetable
		Total	**28**	
2	Syndesmology	SC 15.General anatomy of the joints. Classification. Biomechanism of movements.	2	According to the timetable
		SC 16. The joints of the rib cage	2	According to the timetable
		SC 17. The joints of the vertebral column	2	According to the timetable
		PC 18. The joints of the upper limbs	2	According to the timetable
		PC 19. The joints of the pelvic girdle and knee joint	2	According to the timetable
		SC 20. The joints of the leg and foot.	2	According to the timetable
		PC 21. The joints of the skull	2	According to the timetable
		SC 22. General histology. Histology of cartilaginous connective tissues. Histogenesis, regeneration.	2	According to the timetable
		SC 23. General histology. Histology of skeletal connective tissues. Histogenesis, regeneration.	2	According to the timetable
		PC 24. General histology. Histology of fibrous connective tissues. Histogenesis, regeneration.	2	According to the timetable
		PC 25. General histology. Histology of blood and lymph. Hematopoiesis. Histogenesis, regeneration	2	According to the timetable
		PC 26.Unit control	2	According to the timetable
		Total	**24**	
3	Myology	SC 27. Introduction. General anatomy of the muscles and fascias. Classification. Anatomy of the superficial fascia and the regional distribution of adipose tissue.	2	According to the timetable
		PC 28. The muscles and fascias of the head and face	2	According to the timetable
		PC 29. The muscles and fascias of the neck	2	According to the timetable
		SC 30. The muscles and fascias of the thorax and back	2	According to the timetable
		PC 31. The muscles and fascias of the abdomen and pelvis. Development and anatomy of the anterior abdominal wall	2	According to the timetable
		SC 32.The muscles and fascias of the upper limbs	2	According to the timetable
		PS 33. The muscles and fascias of the pelvic girdle and thigh	2	According to the timetable
		SC 34. The muscles and fascias of the lower limbs	2	According to the timetable
		SC 35. General histology. Histology of muscle tissue. Histogenesis, regeneration.	2	According to the timetable
		PC 36. General histology. Histology of nervous tissue. Histogenesis, regeneration.	2	According to the timetable
		SC 37. Histology of thin and thick skin. Development, regeneration. Dermatomes of the skin.	2	According to the timetable
		PC 38. Histology of skin appendages: hair, nail plate, sweat and sebaceous glands. Development, regeneration.	2	According to the timetable
		PC 39. Unit control	2	According to the timetable
		Total	**26**	
		Overall	**78**	

II-semester				
№	Unit	Topic of practical class	Hour	Date

4	Splanchnology	PC 1. Anatomy of the oral cavity, pharynx, esophagus	2	According to the timetable
		SC 2. Anatomy of the stomach, small and large intestines and peritoneum	2	According to the timetable
		PC 3. Anatomy of the Liver, Pancreas, Gallbladder, Lesser and Greater Omenta	2	According to the timetable
		SC 4. Histology of the mucous membrane of the oral cavity organs: lip, gum, palate, tongue, pharynx. The development and histology of tooth tissues. Histology of digestive organs: esophagus, stomach, small and large intestines.	2	According to the timetable
		SC 5. Histology of the large salivary glands: parotid, submandibular and sublingual.	2	According to the timetable
		PC 6. Histology of liver, gallbladder, exocrine pancreas.		According to the timetable
		SC 7. Anatomy of the Nasal Cavity, Larynx and Trachea		According to the timetable
		PS 8. Anatomy of the Bronchi, Lungs, Pleura and Mediastinum	2	According to the timetable
		SC 9. Histology of the nasal cavity, larynx, trachea and bronchi	2	According to the timetable
		PC 10. Histology of the lungs and pleura.	2	According to the timetable
		PC 11. Anatomy of the Urinary system	2	According to the timetable
		SC 12. Development of the urinary system. Histology of the kidney.	2	According to the timetable
		PC 13. Histology of the ureter, bladder and urethra.	2	According to the timetable
		SC 14 . Anatomy of the Male Reproductive system	2	According to the timetable
		SC 15. Development of the male reproductive system. Histology of the testis and ductus deferens	2	According to the timetable
		PC 16. Histology of the epididymis, prostate, seminal vesicles, bulbo-urethral glands and external reproductive organs	2	According to the timetable
		PC 17. Anatomy of the Female Reproductive system and Mammary glands	2	According to the timetable
		SC 18. Development of organs of the female reproductive system. Histology of the ovary and mammary glands	2	According to the timetable
		PC 19. Histology of the oviduct, uterus, cervical canal and vagina	2	According to the timetable
		PC 20. Anatomy of the Endocrine system	2	According to the timetable
		SC 21. Histology of organs of the endocrine system: hypothalamus, pituitary gland and epiphysis.	2	According to the timetable
		PC 22. Histology of organs of the endocrine system: thyroid and parathyroid glands, adrenal glands, endocrine pancreas	2	According to the timetable
		PC 23. Unit control	2	According to the timetable
		Total	**46**	
5	Cardiovascular system	SC 24. Anatomy of the cardiovascular system. Classification. Systemic and pulmonary circulation. Fetal circulation and postnatal transitional changes.	2	According to the timetable
		PC 25. Anatomy of the heart, great vessels and coronary arteries. The cardiac conduction system.	2	According to the timetable
		SC 26. Arteries of the Head and Neck	2	According to the timetable
		PC 27. Veins of the Head and Neck	2	According to the timetable
		PC 28. Blood Vessels of the Thoracic Cavity	2	According to the timetable

		PC 29. Blood Vessels of the Abdominal Cavity	2	According to the timetable
		SC 30. Blood Vessels of the Upper Limbs	2	According to the timetable
		SC 31. Blood Vessels of the Pelvic Cavity	2	According to the timetable
		PC 32. Blood Vessels of the Lower Limbs	2	According to the timetable
		PC 33. Lymphatic System	2	According to the timetable
		SC 34. Histology of the organs of the cardiovascular system: arteries, veins, and microcirculatory vessels. Classification of blood vessels. General structural organization of the vessel wall and principles of regeneration.	2	According to the timetable
		PC 35. Histology of the heart, the origin and structure of its layers, valves, and conduction system. Cardiac regeneration and age-related features. Histology of lymphatic vessels.	2	According to the timetable
		PC 36. Histology of organs of the haemotopoiesis and immune response: bone marrow, thymus	2	According to the timetable
		PC 37. Histology of the spleen, lymph nodes, lymphoid follicles of the mucous membranes.	2	According to the timetable
		PC 38. Unit Control	2	According to the timetable
		Total	**30**	
6	Central Nervous System	SC 39.Introduction. General anatomy of the Central nervous system. Development, features and anomalies	2	According to the timetable
		SC 40. The Spinal cord	2	According to the timetable
		PC 41. The Brainstem	2	According to the timetable
		PC 42. The Cerebellum	2	According to the timetable
		PC 43. The Diencephalon, the limbic system	2	According to the timetable
		SC 44. The Cerebral cortex	2	According to the timetable
		PC 45. The internal structure of the cerebrum	2	According to the timetable
		SC 46. Ascending and Descending Tracts	2	According to the timetable
		PC 47. The meninges, ventricles, cerebrospinal fluid and dural sinuses. Cerebrospinal fluid circulation.	2	According to the timetable
		PC 48. Histology of the Organs of the Central Nervous System: Spinal Cord, Cerebral Cortex, Cerebellum, and Meninges	2	According to the timetable
		PC 49. Anatomy of the eye		According to the timetable
		SC 50. Histology of the organ of vision and its development. Histology of the layers of the eyeball (fibrous, vascular, and neural): cornea, lens, iris, retina. Lacrimal glands.	2	According to the timetable
		SC 51. Histology of the olfactory organ. Histology of the olfactory epithelium. Histology of taste receptors and types of receptors.	2	According to the timetable
		SC 52. Anatomy of the ear and vestibular system	2	According to the timetable
		PC 53. Histology of the auditory organ (organ of Corti) and the vestibular organ (maculae of the utricle and saccule, cristae ampullares).	2	According to the timetable
		PC 54. Unit Control	2	According to the timetable
		Total	**32**	

7	Peripheral Nervous System	SC 55. Introduction. General anatomy of the peripheral nervous system. Concept of joint innervation and Hilton's law.	2	According to the timetable
		PC 56. Cervical plexus	2	According to the timetable
		PC 57. Brachial plexus.	2	According to the timetable
		SC 58. Thoracic nerves. Dermatomes. Lumbar plexus	2	According to the timetable
		PC 59. Sacral plexus	2	According to the timetable
		PC 60. Autonomic nervous system	2	According to the timetable
		SC 61. Cranial nerves I,II,VIII	2	According to the timetable
		PC 62. Cranial nerves III,IV,VI,XI,XII	2	According to the timetable
		PC 63. Cranial nerves V,VII,IX,X	2	According to the timetable
		PC 64. Histology of nerve endings: receptors, synapses, effectors.	2	According to the timetable
		SC 65. Histology of the organs of the peripheral nervous system: nerves, spinal and autonomic ganglia.	2	According to the timetable
		PC 66. Unit Control	2	According to the timetable
		Total	**24**	
		Overall	**132**	

THEMATIC PLAN OF INDEPENDENT WORK OF STUDENTS

I-semestr				
№	Unit	Theme of independent work	Hour	Date
1	Osteology & embryology	1. Make the table of classification of bones	2	According to the timetable
		2.Make the table of differences between male and female pelves	2	According to the timetable
		3. Make the table of paranasal sinuses. Features, connections	2	According to the timetable
		4. Mark the names of importants parts of the internal skull base on the picture		
		5. Make a table: Embryonic rudiments of the embryo, differentiated from the corresponding germ layers: ectoderm, endoderm, mesoderm.	2	According to the timetable
		6. Fill out the table: The main stages of embryogenesis and their significance. Make a sketch and brief description of the types of cleavage in vertebrates depending on the types of oocytes.	2	According to the timetable
		7. Make a table about the critical periods of embryogenesis and the corresponding periods in days or weeks. Draw the structure placenta of hemochorial type.	2	According to the timetable
		8. Make a summary using Internet resources on the topic of methods of histological and cytological research. Make a table: Classification of organelles depending on their structure: membrane, non-membrane.	2	According to the timetable
Total			**16**	
2	Syndesmology & cytology.	1.Make the scheme of the joints of bones	2	According to the timetable

		2.Draw the projection lines of the rib cage	2	According to the timetable
		3.The biomechanics of the shoulder and elbow joints	2	According to the timetable
		4.Describe the temporo-mandibular joint	2	According to the timetable
		5.Describe the joints of the hand	2	According to the timetable
		6. .Describe the joints of the foot	2	According to the timetable
		7. Make tables: Classification of integumentary epithelial tissues by sources of development, by structure. Make a sketch of the exocrine glands based on their structure and type of secretion.	2	According to the timetable
		8. Make a table of blood hemogram indicators. Draw a diagram of hematopoiesis.	2	According to the timetable
		9. Make a table: Differences in the structure of the intercellular substance of different types of connective tissue. Draw the structure of cells of loose fibrous connective tissue and describe their brief characteristics depending on their function.	2	According to the timetable
Total			**18**	
3.	Myology	1. Make the table of differences between the mastication muscles and facial expression muscles	2	According to the timetable
		2. Draw and describe the triangles of the neck and fascias of the neck	2	According to the timetable
		3. Describe the structure of the diaphragm and its weak places	2	According to the timetable
		4. Write the walls of inguinal canal, its contents and the weak places of the abdomen	2	According to the timetable
		5. Describe the cubital fossa and anatomical snuffbox, its borders and contents	2	According to the timetable
		6. Describe the pelvic and urogenital diaphragm	2	According to the timetable
		7. Describe the femoral triangle, the contents of vascular and muscular lacunas	2	According to the timetable
Total			**14**	
Overall			**48**	

II-semester				
№	Unit	Theme of independent work	Hour	Date
4	Splanchnology	1. Write and Draw the Pharynx and it's structures on sagittal section	2	According to the timetable
		2. Form the plate of comparing small and large intestine, Jejunum and Ileum	2	According to the timetable
		3. Draw the "Wonderful net" (Rete Mirable) of the Liver and its ligaments.	2	According to the timetable
		4. Larynx cavity, vocal chords, vocal aperture	2	According to the timetable
		5. Draw a diagram of the blood supply to the kidney, the wonderful network of the kidney.	2	According to the timetable
		6. Make a summary using Internet resources on the topic: Sources and course of embryonic development of the organs of the endocrine system. Make a sketch of the histological structure of the various parts of the pituitary gland and a short description of them.	2	According to the timetable

		7. Make a summary using Internet resources on the topic: Sources and course of embryonic development of skin and its appendages. Draw the layer-by-layer histological structure of hair.		
		8. Make a summary using Internet resources on the topic: Sources and course of embryonic development of the respiratory system. Draw the layer-by-layer structure of the air-blood barrier of the lung and its short description.	2	According to the timetable
		9. Make a summary using Internet resources on the topic: Sources and course of embryonic development of the digestive tract organs. Make a sketch of the histological structure of the wall of various parts of the stomach and a short description of them.	2	According to the timetable
		10.Make a summary using Internet resources on the topic: Sources and course of embryonic development of the organs of the urinary system. Draw the layer-by-layer structure of the filtration barrier in the renal nephron corpuscle and its short description	2	According to the timetable
Total			**20**	
5	Cardiovascular system	1. Draw Circles of Blood Circulation	2	According to the timetable
		2. Conducting System of the Heart	2	According to the timetable
		3. Sketch the Willis Circle and provide a description	2	According to the timetable
		4. Draw Portocaval and Cava-caval Anastomoses	2	According to the timetable
		5. Write about Arteries and Veins of Pelvic Organs	2	According to the timetable
		6. Arteries of the Hand, Palmar Arch	2	According to the timetable
		7. Make a summary using Internet resources on the topic: Sources and course of embryonic development of the organs of the cardiovascular system. Make a sketch of the histological structure of the walls of blood vessels and their short description.	2	According to the timetable
Total			**14**	
6	Central Nervous System	1. Draw the cross section picture of spinal cord and formation of spinal nerves.	2	According to the timetable
		2. Draw and describe the ascending and descending tracts	2	According to the timetable
		3. Make the table of brainstem nuclei and their functions and locations	2	According to the timetable
		4. Draw the rhomboid fossa, its borders and contents	2	According to the timetable
		5. Draw the hypothalamus, its nuclei and functions	2	According to the timetable
		6. Conducting tracts of the cerebrum	2	According to the timetable
		7. Draw and describe the optic tract, and its all components	2	According to the timetable
		8. Make a summary using Internet resources on the topic: Sources and course of embryonic development of the nervous system organs. Draw the layer-by-layer structure of the blood-brain barrier in the brain and its short description.	2	According to the timetable
Total			**16**	
7		1. Draw and describe the reflex arc and its components	2	According to the timetable

	Peripheral Nervous System	2. Draw and describe phrenic nerve. Origin, structure and innervation	2	According to the timetable
		3. Draw and describe median nerve. Origin, structure and innervation	2	According to the timetable
		4. Make the comparative tables of somatic and autonomic, sympathetic and parasympathetic NS	2	According to the timetable
		5. Describe structure, function and origin of enteric nervous system	2	According to the timetable
		6. Sketch the path of the facial nerve and its innervation.	2	According to the timetable
		7. Make a summary using Internet resources on the topic: Sources and course of embryonic development of the senses: smell, vision, hearing and balance. Draw the layer-by-layer histological structure of the retina and its short description.	2	According to the timetable
Total			**64**	
Overall			**112**	

Recommended reading for the discipline:

Basic:

№	Authors	Name	Publish Year	Publisher	Amount in Library
1	Abaeva T.S.	Textbook of Human Anatomy	2017	Нео Принт Бишкек	250
2	Agur A.M.	Basic anatomy and examination of the eye	2013	Wolters Kluwer	120
3	Beg K.	Essence of anatomy	2013	CBS Publishers & Distributors Pvt Ltd	1
4	Chaurasia B.D.	Human anatomy vol-1	2013	CBS Publishers & Distributors Pvt Ltd	31
5	Chaurasia B.D.	Human anatomy vol-2	2016	CBS Publishers & Distributors Pvt Ltd	27
6	Chaurasia B.D.	Human anatomy vol-3	2013	CBS Publishers & Distributors Pvt Ltd	25
7	Netter F.H.	Atlas of Human Anatomy	2019	Saunders Elsevier	50
8	Junqueira L.S.	Basic Histology Text and Atlas	2021	McGraw-Hill	48
9	Siddiqui L.H.	Medical Histology	2004	Medtech	86
10	Eroschenko V.P.	Atlas of Histology with Functional Correlations	2013	Wolters Kluwer	51
11	Garg K.	Textbook of human histology	2011	CBS Publishers & Distributors Pvt Ltd	3

Additional:

№	Authors	Name	Publish Year	Publisher	Amount in Library

12	Romanes G.J.	Cunningham Manual of practical anatomy	2004	Oxford University press	1
13	Singh I.	Textbook of Human Histology	2014	Jaypee Brothers Medical Publishers Pvt Ltd	25
14	Young B.	Functional Histology	2000	Elsevier Ltd	3
15	Prakash G.B.	Inderbir Singh Human Histology	2016	Jaypee Brothers Medical Publishers Pvt Ltd	3

Grading policy and procedures for all types of work

For the period of studying the discipline, the student gains points for the relevant parameters (per unit):

- current score - 40 points
- independent work - 20 points
- unit/ module – 40 points
- the overall score - 100 (40+40+20)

For violations of t**he conduct policy**, the overall discipline score will be reduced by a maximum of 10 points.
For violations of **the academic ethics policy**, the overall score in the discipline is reduced by a maximum of 10 points.

Grading system for student's achievements

Grading criteria per discipline				
Maximum score	Intervals			
	«unsatisfactory»	«satisfactory»	«good»	«excellent»
Current control - 40	0-23	24-30	31-35	36-40
Interval description	Does not know most of the relevant section of the material being studied, presents the material erratically and uncertainly	Presents the material incompletely and allows for inaccuracies in defining concepts	Gives an answer that meets the same requirements as for an "excellent" rating, but makes 2-3 errors	Completely presents the studied material, gives correct definitions of concepts;
Independent work - 20	0-11	12-15	16-17	18-20
Interval description	The topic is not revealed, does not correspond to the plan, indicates superficial knowledge	The material is presented quite logically, but there are some irregularities in the sequence of expression of thoughts;	2-3 inaccuracies in the content, minor deviations from the topic are allowed	Excellent knowledge of the topic, targeted analysis of the material, correct conclusions and generalizations;
Control work (module) - 20	0-23	24-30	31-35	36-40

Interval description	Number of correct answers to MCQs –60% or less	Number of correct answers to MCQs – 60-75 %	Number of correct answers to MCQs – 76-89%	Number of correct answers to MCQs – 90% and above

Exam 100 points.

Grand total score for the discipline (average score for units max 100 + exam score max 100)/2 = 100 points
Grand total score for the discipline put into the record book.

Conduct Policy: (lateness, absence, behavior in the auditorium, late submission of work).
- Punctuality and completion of tasks.
- Mandatory attendance of classes.
- Attending class in a clean medical uniform.
- Eliminating conversations on a cell phone in the classroom.
- Active participation in the learning process.
- Doing homework on time.
- Academic detention at the time specified by the teacher.

For violations of the Conduct Policy, the total points for discipline might be reduced to 1-10 points.

Academic Ethics Policy.
- Be tolerant, respect the opinions of others.
- Formulate objections in the correct form.
- Constructively support feedback in all classes.
- Plagiarism and other forms of dishonest work are unacceptable. Plagiarism includes the following: the absence of references when using printed and electronic materials, quotes, thoughts and works of other authors or students.
- Prompting and cheating during tests, exams, classes is unacceptable as well as passing an exam for another student, unauthorized copying of materials.

For violations of the Academic Ethics Policy, the total points for the discipline may be reduced to 1-10 points.

Guidelines for the lessons of the discipline
Anatomy

Unit 1 Osteology

Key questions covered in Lesson 1. ***Introduction to histology. The subject and objectives of histology and its role within the system of medical sciences. Methods of histological and cytological research and their significance for medical science and clinical practice. Stages of preparation of a histological slide. The Cell: Structural Components and Cytoplasmic Inclusions. The Cell Cycle. Main manifestations of cellular activity: cellular responses to external influences, regeneration, and cell death.***

1. Subject and objectives of histology and its role in medical sciences.
2. Methods of histological and cytological research and their clinical significance.
3. Stages of preparation of a histological slide.
4. Cell structure: membrane, organelles, cytoplasmic inclusions.
5. Cell cycle, cellular responses, regeneration, and cell death.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 2. ***Tissues: Development, Structure, Classification, and Function.***

1. Embryonic origin of tissues and germ layers.
2. Classification of tissues.
3. Structural organization of epithelial, connective, muscle, and nervous tissues.
4. Cellular and extracellular components of tissues.
5. Functional specialization and interaction of tissues.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 3. ***General Embryology. Embryogenesis. The main stages of vertebrate embryonic development. Cleavage and blastocyst formation. Development of the primitive streak and notochord. Neurulation. Development of somites and intraembryonic structures.***

1. Main stages of vertebrate embryonic development.
2. Cleavage and formation of the blastocyst.
3. Gastrulation: development of the primitive streak and germ layers.
4. Formation of the notochord and neurulation.
5. Development of somites and intraembryonic structures.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 4. ***Development of the Trophoblast. The process of implantation and its abnormalities. Formation of extraembryonic organs. The role of the chorion in placental formation. Structure and functions of the placenta. The placental barrier and its significance in maternal–fetal exchange.***

1. Development and differentiation of the trophoblast.
2. Implantation: stages and mechanisms.
3. Abnormal implantation and its clinical forms.
4. Formation of extraembryonic organs and chorion.
5. Placenta: structure, functions, placental barrier and maternal–fetal exchange.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 5. ***Histology of extraembryonic organs: amnion, serous membrane, yolk sac, allantois, chorion. Placenta, its types and structure.***

1. Histological structure of extraembryonic membranes: amnion, serous membrane, yolk sac, allantois.
2. Formation and histological organization of the chorion and chorionic villi.
3. Placenta: types, structural organization, maternal and fetal parts.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 6. ***General histology. Histology of epithelial tissues: integumentary, glandular. Histogenesis, regeneration.***

1. General characteristics and classification of epithelial tissues.
2. Integumentary epithelium: types, structural features, functions.
3. Glandular epithelium: exocrine and endocrine glands, modes of secretion.
4. Histogenesis of epithelial tissues.
5. Regeneration and renewal of epithelial tissues.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 7. ***Anatomy Introduction. The General anatomy of the skeleton. Classification of bones. Development of bones and anomaly development of bones.***

1. General organization of the skeleton: axial and appendicular parts.
2. Classification of bones: long, short, flat, irregular, sesamoid.
3. External and internal structure of bones.
4. Development of bones: intramembranous and endochondral ossification.
5. Congenital anomalies and developmental disorders of bones.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 8. *The bones of rib cage. Vertebral column*.

1. Thoracic cage: ribs, sternum, thoracic vertebrae.
2. Classification and structural features of ribs.
3. Sternum: parts and anatomical features.
4. Vertebral column: regions and general structure of vertebrae.
5. Typical and atypical vertebrae: structural differences and functional features.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 9. *The bones of the shoulder girdle and upper limbs.*

1. Shoulder girdle: clavicle and scapula, anatomical features.
2. Humerus: parts and structural landmarks.
3. Radius and ulna: structural characteristics and articulations.
4. Bones of the hand: carpals, metacarpals, phalanges.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 10. *The bones of the pelvic girdle and lower limbs*

1. Hip bone: ilium, ischium, pubis, acetabulum, obturator foramen.
2. Pelvic girdle: structure, greater and lesser pelvis.
3. Femur: parts, anatomical features, blood supply landmarks.
4. Tibia and fibula: structural characteristics and articulations.
5. Bones of the foot: tarsals, metatarsals, phalanges, arches of the foot.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 11. *The Neurocranium.*

1. Bones of the neurocranium and their classification.
2. Frontal, parietal, occipital, temporal and sphenoid bones: structural features.
3. Cranial fossae: anterior, middle, posterior boundaries and contents.
4. External and internal surfaces of the cranial base.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 12. *The Viscerocranium.*

1. Bones of the viscerocranium and their classification.
2. Maxilla, mandible, zygomatic and nasal bones: structural features.
3. Palatine, lacrimal, vomer and inferior nasal concha: anatomical characteristics.
4. Orbits, nasal cavity and oral cavity boundaries.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 13. *The Skull as a whole*

1. Skull: neurocranium and viscerocranium, general organization.
2. External surface of the skull: norma frontalis, lateralis, occipitalis, verticalis, basalis.
3. Internal surface of the cranial base: anterior, middle, posterior cranial fossae.
4. Cranial sutures
5. Foramina of the skull and transmitted structures.
6. Age features of the skull

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 14. ***Unit Control***

1. Cytology, histology, embryology and their meaning for the medicine. Methods of research in histology and embryology. Cell. Cytoplasm. Chemical and morph-functional characteristic. Structural components. Cytolemma (cell membrane). Structure, function.
2. Types of cell junction.
3. Cell organelles and inclusions. Organelles. Morpho-functional classification. Structure and
4. General organelles: Golgi apparatus, endoplasmatic reticulum, mitochondria.
5. General membranous organelles: lysosomes, their types, structure, function.
6. General non-membranous organelles: ribosomes, centrioles, microfilaments, microtubules.
7. Special organelles: myofibrils, neurofibrils, tonofibrils, microvilli, cilia, synaptic vesicles.
8. Structure and function.
9. Cell nucleus: nucleolemma, chromatin, nucleoli, nucleoplasm.
10. Nucleus. Nuclear membrane. Structure, function.
11. Chromatin, chromosomes. Types, structure, function.
12. Nucleolus. Nucleolar components. Structure, function.
13. Non-cellular structures: symplast, synsytia, intercellular substance.
14. Cell cycle. Periods of interphase. Mitosis. Growth, differentiation, old and death of cell.
15. Epithelium tissue. Classification. Morpho-functional characteristic. Covering epithelia.
16. Structure, function, regeneration.
17. Glandular epithelium. Classification. Structure, function.
18. Glandular cells. Morphology of secretory cycle.
19. Medical embryology. Human embryogenesis. Fertilization Morphology of zygote. Type of cleavage. Structural components of blastula: embryoblast and trophoblast. Implantation. Gastrulation: 1 phase - delamination, 2 phase - immigration. Neurulation (3 phase - invagination) and formation of complex of axial organs. Formation and structure of extraembryonic organs (4 phase - epibolya): chorine, amnion, yolk sac, allantois.Formation of placenta (fetal, maternal), their structure and function. Differentiation of mesoderm. Histogenesis. Critical periods in human embryogenesis. Postnatal period.
20. The science of Human anatomy.
21. Methods of anatomical study
22. Constitution. Norm. Anomalies.
23. The Following classification of bone.
24. The vertebral column. The cervical vertebrae.
25. Thoracic vertebrae.
26. The lumbar vertebrae.
27. The sacral, coccygeal vertebrae.
28. The ribs. The sternum.
29. The clavicle. The scapula.
30. The humerus.
31. The ulna. The radius.
32. The bones of the Hand.
33. The pelvic girdle. The ilium.
34. The pubis. The ischium.
35. The femur. The patella.
36. The tibia. The fibula
37. The bones of the foot.
38. The occipital bone. The sphenoid bone.
39. The temporal bone.
40. The parietal bone. The frontal bone. The ethmoid bone.
41. The bones of viscerolcranium.
42. The skull as a whole.
43. The orbits. The anterior bony aperture of nose.
44. The temporal and infratemporal fossa.
45. The pterygopalatine fossa.
46. The external and internal structure of the skull.
47. Age features of the skull.

Recommended reading for the lesson: [1-15]

Unit 2 Syndesmology

Key questions covered in Lesson 15. ***General anatomy of the joints. Classification. Biomechanism of movements.***

1. General anatomy of the joints.
2. Classification of the joints.
3. Structural components of synovial joints.
4. Axes and planes of joint movements.
5. Types of movements in the joints.
6. Biomechanism of joint movements.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 16. ***The joints of the rib cage.***

1. General anatomy of the joints of the rib cage.
2. Classification of the joints of the rib cage.
3. Costovertebral and costotransverse joints.
4. Sternocostal and costochondral joints.
5. Ligaments of the rib cage joints.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 17. ***The joints of the vertebral column.***

1. General anatomy of the joints of the vertebral column.
2. Classification of the joints of the vertebral column.
3. Intervertebral joints and intervertebral discs.
4. Zygapophysial (facet) joints.
5. Ligaments of the vertebral column.
6. Movements of the vertebral column.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 18. ***The joints of upper limbs.***

1. General anatomy of the joints of the upper limb.
2. Classification of the joints of the upper limb.
3. Joints of the shoulder girdle.
4. Shoulder and elbow joints.
5. Wrist and hand joints.
6. Movements of the upper limb.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 19. ***The joints of the pelvic girdle and knee joint.***

1. General anatomy of the joints of the pelvic girdle.
2. Sacroiliac joint and pubic symphysis.
3. Ligaments of the pelvic girdle.
4. General anatomy of the knee joint.
5. Intra-articular structures of the knee joint.
6. Movements and stability of the hip and knee joints

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 20. ***The joints of the leg and foot.***

1. General anatomy of the joints of the leg and foot.
2. Proximal and distal tibiofibular joints.
3. Ankle (talocrural) joint.
4. Subtalar joint
5. Movements and arches of the foot.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 21. ***The joints of the skull.***

1. General anatomy of the joints of the skull.
2. Fibrous joints of the skull (sutures and syndesmoses).
3. Temporomandibular joint.
4. Ligaments of the temporomandibular joint.
5. Movements of the mandible.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 22. ***General histology. Histology of cartilaginous connective tissues. Histogenesis, regeneration.***

1. General characteristics of connective tissues.
2. Classification and structure of cartilaginous connective tissues.
3. Hyaline, elastic and fibrocartilage.
4. Histogenesis of cartilaginous tissue.
5. Regeneration and age features of cartilage.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 23. ***General histology. Histology of skeletal connective tissues. Histogenesis, regeneration.***

1. General characteristics of skeletal connective tissues.
2. Bone tissue: classification and structure.
3. Histogenesis of bone.
4. Intramembranous and endochondral ossification.
5. Regeneration and remodeling of skeletal tissues.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 24. ***General histology. Histology of fibrous connective tissues. Histogenesis, regeneration.***

1. General characteristics and classification of fibrous connective tissues.
2. Loose and dense fibrous connective tissue.
3. Histogenesis of fibrous connective tissues.
4. Regeneration and repair of fibrous connective tissues.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 25. ***General histology. Histology of blood and lymph. Hematopoiesis. Histogenesis, regeneration***

1. General characteristics of blood and lymph as connective tissues.
2. Formed elements of blood and their structure.
3. Lymph: composition and functions.
4. Hematopoiesis: stages and regulatory factors.
5. Histogenesis of blood cells.
6. Regeneration and renewal of blood and lymph.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 26. ***Unit Control***

1. Schematical representation of bone joints.
2. Joints between the vertebrae. Joints between the vertebral arches.
3. Joints between the sacrum and coccyx.
4. The joints of the shoulder girdle.
5. The shoulder joint.
6. The elbow joint.
7. Articulation between the forearm bones.
8. Joints of the Hand bones.
9. Joints of the pelvic bones.
10. The pelvic as a whole.
11. The Hip joint
12. The Knee joint.
13. Joints between the leg bones.
14. Joints of the bones of the foot.
15. Articulations of the skull
16. Temporo- mandibular joint
17. Types of the sutures
18. Atlanto- occipital joint.
19. Blood. Plasma and blood cells, their classification. Hemogram and leukocyte formula.
20. Erythrocytes: number, types, structure, function, life span.
21. Leukocytes. Classification. Number, structure, function, life span.
22. Neutrophils: number, structure, types, function, life span.
23. Eosinophils: number, structure, types, function, life span.
24. Basophiles: number, structure, function, life span.
25. Lymphocytes: number, types, structure, function, life span.
26. Monocytes: number, types, structure, function, life span.
27. Thrombocytes: number, structure, varieties, function, life span.
28. Immunity. Types. Role of blood cells in the immunity.
29. Cartilage tissue. Classification. Cells and intercellular substance. Histogenesis.
30. Hyaline cartilage. Development and growth. Structure and function. Regeneration.
31. Elastic and fibrous cartilage. Development, distribution, structure, function.
32. Bone tissue. Development and growth of bones. Regeneration. Cells and intercellular substance.
33. Bone tissue. Morpho-functional characteristic, classification. Lamellar bone tissues: compact and spongy. Development, structure, function.

Recommended reading for the lesson: [1-15]

Unit 3 Myology

Key questions covered in Lesson 27. ***Introduction. General anatomy of the muscles and fascias. Classification. Anatomy of the superficial fascia and the regional distribution of adipose tissue.***

1. General anatomy of skeletal muscles.
2. Classification of muscles and fascias
3. Structure and functions of muscles and fasciae.
4. Superficial fascia: structure and features.
5. Regional distribution of adipose tissue.
6. Functional significance of fasciae and subcutaneous tissue.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 28. ***The muscles and fascias of the head and face.***

1. General anatomy of the muscles of the head and face.
2. Muscles of facial expression.
3. Muscles of mastication.
4. Fasciae of the head, face and their spaces.

5. Functional significance of the muscles and fascias of the head and face.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 29. ***The muscles and fascias of the neck.***

1. General anatomy of the muscles of the neck.
2. Classification of the neck muscles.
3. Superficial and suprahyoid muscles.
4. Infrahyoid and deep neck muscles.
5. Cervical fasciae and fascial layers of the neck.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 30. ***The muscles and fascias of the thorax and back.***

1. General anatomy of the muscles of the thorax and back.
2. Superficial and deep muscles of the back.
3. Muscles of the thoracic wall.
4. Diaphragm: structure and function.
5. Fasciae of the thorax and back.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 31. ***The muscles and fascias of the abdomen and pelvis. Development and anatomy of the anterior abdominal wall***

1. General anatomy of the muscles of the abdomen and pelvis.
2. Anterolateral abdominal wall muscles.
3. Posterior abdominal wall muscles.
4. Pelvic floor muscles.
5. Fasciae of the abdomen and pelvis.
6. Development of the anterior abdominal wall.
7. Inguinal canal: structure and boundaries.
8. Functional significance and weak points of the anterior abdominal wall.
9. Functions of the abdominal and pelvic muscles.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 32. ***The muscles and fascia of the upper limbs.***

1. General anatomy of the muscles of the upper limb.
2. Muscles of the shoulder girdle.
3. Muscles of the arm and forearm.
4. Muscles of the hand.
5. Fasciae of the upper limb and fascial compartments.
6. Functions and movements of the upper limb muscles.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 33. ***The muscles and fascias of the pelvic girdle and thigh***

1. General anatomy of the muscles of the pelvic girdle and thigh.
2. Muscles of the gluteal region.
3. Anterior, medial and posterior groups of the thigh muscles.
4. Fascia lata and intermuscular septa of the thigh.
5. Femoral canal and femoral triangle.
6. Functions and movements of the hip and thigh muscles.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 34. ***The muscles and fascia of the lower limbs.***

1. General anatomy of the muscles of the lower limb.
2. Muscles of the leg: anterior, lateral and posterior groups.
3. Muscles of the foot.
4. Fasciae of the lower limb and fascial compartments.
5. Functions and movements of the lower limb muscles.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 35. ***General histology. Histology of muscle tissue. Histogenesis, regeneration.***

1. General characteristics and classification of muscle tissue.
2. Structure of skeletal, cardiac and smooth muscle.
3. Ultrastructure of muscle fibers.
4. Histogenesis of muscle tissue.
5. Regeneration and repair of muscle tissue.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 36. ***General histology. Histology of nervous tissue. Histogenesis, regeneration.***

1. General characteristics and classification of nervous tissue.
2. Neurons: structure, types, and functional organization.
3. Neuroglia: types and roles in the central and peripheral nervous systems.
4. Histogenesis of nervous tissue: development of neurons and glial cells.
5. Regeneration and repair of nervous tissue.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 37. ***Histology of thin and thick skin. Development, regeneration. Dermatomes of the skin.***

1. Histological structure of thin and thick skin: epidermal layers and dermis.
2. Differences between thin and thick skin: appendages and keratinization.
3. Development of the skin: embryonic origin of epidermis and dermis.
4. Regeneration and renewal of the epidermis.
5. Dermatomes: segmental innervation and clinical significance.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 38. ***Histology of skin appendages: hair, nail plate, sweat and sebaceous glands. Development, regeneration.***

1. Histological structure of hair and hair follicle: layers, growth cycle.
2. Histology of the nail plate and nail bed: epithelial specialization.
3. Sweat glands: eccrine and apocrine types, structure and secretion.
4. Sebaceous glands: structure, holocrine secretion.
5. Development and regeneration of skin appendages.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 38. ***Unit Control***

1. General anatomy of the muscles.
2. Types of muscles
3. Types of fascias
4. Classification of muscles and fascias
5. Classification head and face muscles.

6. Fascias head and face region.
7. Facial expression muscles.
8. Mastication muscles.
9. Classification of the neck muscles.
10. Fascias of the neck region.
11. Superficial muscles of the neck.
12. Deep muscles of the neck.
13. Triangles of the neck.
14. Classification of the thorax and back muscles.
15. Superficial and proper muscles of the thorax.
16. Superficial and deep muscles of the back.
17. Classification of the abdomen and pelvic muscles.
18. Anterior and lateral and posterior muscles of the abdomen.
19. External and internal muscles of the pelvis.
20. Classsification of upper limb muscles
21. Muscles of shoulder girdle
22. Anterior and posterior muscles of arm
23. Anterior and posterior muscles of forearm
24. Hand muscles.
25. Classification of lower limb muscles
26. Muscles of pelvic girdle
27. Anterior, posterior and medial muscles of thigh
28. Anterior, posterior and lateral muscles of leg
29. Foot muscles.
30. Muscle tissue. Classification. Morpho-functional characteristic. Histogenesis, structure, function. Regeneration. Smooth muscle. Development, types, structure, function and regeneration.
31. Skeletal muscle. Histogenesis and regeneration. Structure and function.
32. Cardiac muscle. Development, structure, function. Regeneration.
33. Nerve tissue. Morpho-functional characteristic. Histogenesis. Structural components.
34. Neurons. Classification. Structure, function. Glial cells. Classification, development, structure, function and distribution.
35. Nerve fibers: myelinated and unmyelinated. Structure, function.
36. Nerve terminations. Classification. Morpho-functional characteristic. Receptors.
37. Synapses. Effectors. Types, structure and function. Reflex arc. Components. Types of reflex arcs.
38. Integumentary system. General morpho-functional characteristic. Development and structure of the skin. Tissue components of the epidermis, dermis, hypodermis.
39. Appendages of the skin: hair, nails, sweat and sebaceous glands. Regeneration.

Recommended reading for the lesson: [1-15]

Unit 4 Splanchnology

Key questions covered in Lesson 1. ***Anatomy of the oral cavity, pharynx, esophagus***

1. Anatomy of the oral cavity: subdivisions, walls, functions.
2. Anatomy of the teeth: types, structure, blood supply, functions.
3. Anatomy of the tongue: parts, muscles, papillae, blood supply, functions.
4. Anatomy of the pharynx: parts, wall structure, muscles, functions.
5. Anatomy of the esophagus: parts, wall layers, constrictions, blood supply, function.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 2. ***Anatomy of the stomach, small and large intestines and peritoneum***

1. Anatomy of the stomach: parts, curvatures, wall structure, blood supply, functions.
2. Anatomy of the small intestine: subdivisions, mesentery, mucosal features, blood supply, functions.
3. Anatomy of the large intestine: parts, taeniae coli, haustra, blood supply, functions.
4. Anatomy of the rectum and anal canal: parts, sphincters, blood supply, functions.
5. Anatomy of the peritoneum: layers, peritoneal cavity, mesenteries, ligaments.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 3. ***Anatomy of the Liver, Pancreas, Gallbladder, Lesser and Greater Omenta***

1. Anatomy of the liver: lobes, surfaces, ligaments, blood supply, functions.
2. Anatomy of the pancreas: parts, duct system, blood supply, exocrine and endocrine functions.
3. Anatomy of the gallbladder: parts, wall structure, blood supply, functions .
4. Anatomy of the lesser omentum: attachments, components, hepatoduodenal ligament contents.
5. Anatomy of the greater omentum: layers, attachments, functions.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 4. ***Histology of the mucous membrane of the oral cavity organs: lip, gum, palate, tongue, pharynx. The development and histology of tooth tissues. Histology of digestive organs: esophagus, stomach, small and large intestines***.

1. Histology of the mucous membrane of the oral cavity: lip, gum, palate, tongue, pharynx.
2. Development and histology of tooth tissues: enamel, dentin, cementum, pulp.
3. Histology of the esophagus: wall layers and structural features.
4. Histology of the stomach: mucosa, glands, muscular layer.
5. Histology of the small and large intestines: mucosal structure, glands, regional differences.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 5. ***Histology of large salivary glands: parotid, submandibular, sublingual.***

1. General structural organization of the large salivary glands.
2. Parotid gland: serous acini, duct system, histological features.
3. Submandibular gland: mixed acini, duct system, histological features.
4. Sublingual gland: mucous acini, duct system, histological features.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 6. ***Histology of liver, gallbladder, exocrine pancreas.***

1. Histological structure of the liver: hepatic lobule, hepatocytes, sinusoids, portal triad.
2. Histology of the gallbladder: wall layers, mucosa, functional features.
3. Histology of the exocrine pancreas: acini, duct system, secretory cells.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 7. ***Anatomy of the Nasal Cavity, Larynx and Trachea***

1. Anatomy of the nasal cavity: parts, conchae, meatuses, blood supply, functions.
2. Anatomy of the larynx: cartilages, joints, muscles, cavity, functions.
3. Anatomy of the trachea: structure of the wall, cartilaginous framework, blood supply, functions.
4. Functional significance of the nasal cavity, larynx and trachea

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 8. ***Anatomy of the Bronchi, Lungs, Pleura and Mediastinum***

1. Anatomy of the bronchi: main, lobar and segmental bronchi, bronchial tree, blood supply, functions.
2. Anatomy of the lungs: lobes, surfaces, borders, hilum, bronchopulmonary segments, functions.
3. Anatomy of the pleura: visceral and parietal layers, pleural cavity, recesses, functions.
4. Anatomy of the mediastinum: divisions and contents.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 9. ***Histology of the nasal cavity, trachea, bronchi and trachea***

1. Histology of the nasal cavity: respiratory and olfactory regions.
2. Histological structure of the trachea: mucosa, cartilage, glands, muscular layer.
3. Histology of the bronchi: wall layers and structural changes along the bronchial tree.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 10. ***Histology of the lungs and pleura.***

1. Histological structure of the lung: bronchioles, alveolar ducts, alveoli.
2. Histology of the pleura: visceral and parietal layers.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 11. ***Anatomy of the Urinary system***

1. Anatomy of the kidneys: external features, internal structure, nephron, hilum, blood supply, functions.
2. Anatomy of the ureters: parts, wall structure, blood supply, function.
3. Anatomy of the urinary bladder: parts, wall layers, trigone, blood supply, function.
4. Anatomy of the urethra: parts, sphincters, structural features, function.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 12. ***Histology of the urinary system, kidneys.***

1. Histological structure of the kidney: cortex and medulla.
2. Nephron: renal corpuscle, proximal and distal tubules, loop of Henle.
3. Juxtaglomerular apparatus: structure and function.
4. Collecting system: collecting tubules and ducts.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 13. ***Histology of the calyces, pelvis, ureter, bladder, urinary duct.***

1. Histological structure of the renal calyces and pelvis.
2. Histology of the ureter: mucosa, muscular layer, adventitia.
3. Histology of the urinary bladder: urothelium, detrusor muscle, wall layers.
4. Histology of the urethra: epithelial types and structural differences.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 14. ***Anatomy of the Male Reproductive system.***

1. Anatomy of the testes: coverings, internal structure, blood supply, functions.
2. Anatomy of the epididymis: parts, duct system, structure, function.
3. Anatomy of the ductus deferens: parts, wall structure, blood supply, function.
4. Anatomy of the seminal vesicles: structure, ducts, blood supply, function.
5. Anatomy of the prostate: lobes, zones, structure, blood supply, function
6. Anatomy of the penis: parts, erectile tissues, blood supply, function.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 15. ***Histology of the male reproductive system, testis***

1. Histological structure of the testis: tunica albuginea, lobules, seminiferous tubules.
2. Seminiferous epithelium: Sertoli cells and spermatogenic cells.
3. Spermatogenesis: stages and cellular differentiation.
4. Interstitial tissue: Leydig cells and endocrine function.

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Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 16. ***Histology of the testicle, epididymis, vas deferens, prostate, seminal vesicles, bulbo-urethral glands.***

1. Histology of the epididymis: duct structure, epithelial features, sperm maturation.
2. Histology of the vas deferens: wall layers, muscular coat, functional features.
3. Histology of the prostate and seminal vesicles: glandular structure, secretion.
4. Histology of the bulbo-urethral glands: structure and functional significance.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 17. ***Anatomy of the Female Reproductive system and Mammary glands***

1. Anatomy of the ovaries: external features, internal structure, blood supply, functions.
2. Anatomy of the uterine tubes: parts, wall structure, function.
3. Anatomy of the uterus: parts, wall layers, ligaments, blood supply, functions.
4. Anatomy of the vagina: structure, blood supply, functions.
5. Anatomy of the external organs: structures, blood supply, functions
6. Anatomy of the mammary glands: structure, blood supply, lactation function.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 18. ***Histology of the organs of the female reproductive system, ovary.***

1. Histological structure of the ovary: cortex and medulla.
2. Ovarian follicles: stages of development and cellular composition.
3. Ovulation and formation of the corpus luteum and corpus albicans.
4. Stromal and interstitial cells of the ovary.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 19. ***Histology of the oviduct, uterus, cervical canal, vagina, mammary gland.***

1. Histology of the oviduct: wall layers, epithelial features, functional role.
2. Histology of the uterus: endometrium, myometrium, cyclic changes.
3. Histology of the cervical canal: epithelial types, glands, structural features.
4. Histology of the vagina: mucosa, muscular layer, functional adaptations.
5. Histology of the mammary gland: structure, lactational changes, functional organization.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 20. ***Anatomy of the Endocrine system***

1. Anatomy of the pituitary gland: parts, relations, blood supply, functions.
2. Anatomy of the thyroid and parathyroid glands: structure, blood supply, functions.
3. Anatomy of the adrenal glands: cortex, medulla, blood supply, functions.
4. Endocrine part of the pancreas: islets, blood supply, functions.
5. Anatomy of pineal gland: location, structure, functions

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 21. ***Histology of the organs of the endocrine system: hypothalamus, pituitary gland, epiphysis.***

1. Histology of the hypothalamus: nuclei, neurosecretory cells, hypothalamo-hypophyseal connections.
2. Histology of the pituitary gland: adenohypophysis and neurohypophysis.
3. Cellular composition of the adenohypophysis: chromophils and chromophobes.

4. Neurohypophysis: pituicytes and neurosecretory fibers.
5. Histology of the epiphysis (pineal gland): pinealocytes, glial cells, structural features.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 22. ***Histology organs of the thyroid and parathyroid glands, adrenal glands, endocrine islet of the pancreas***

1. Histology of the thyroid gland: follicles, follicular and parafollicular cells.
2. Histology of the parathyroid glands: chief and oxyphil cells.
3. Histology of the adrenal glands: cortex zones and medulla.
4. Endocrine islets of the pancreas: cellular composition and arrangement.
5. Structural organization and functional correlations of endocrine glands.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 23. ***Unit Control***

1. 1.The parts of digestive canal.
2. 2.The parts of oral cavity
3. 3.The structure of the teeth.
4. 4.The parts of pharynx
5. 5.The Structure of the esophagus
6. 6.The course of the peritoneum.
7. 7.The structure walls, parts of the stomach.
8. 8.The parts of the small intestine.
9. 9.The parts of the large intestine.
10. 10.The feature of the large intestine.
11. 11.The arteries, venous blood, lymphatic vessels, innervation of the small and large intestine.
12. 12.The parts, structure and blood supply of the pancreas
13. 13.The parts, structure, lobules and blood supply of the liver.
14. 14.The parts of gall bladder
15. 15.The parts of rectum.
16. 16.The walls of the nasal cavity.
17. 17.Structure of the larynx.
18. 18.Structure of the trachea.
19. 19.Structure of the bronchi.
20. 20.Structure of the lungs.
21. 21.Mediastinum and its contents
22. 22.The pleura, parts of pleura.
23. 23.The urinary system.
24. 24.The kidneys. Topography, structure of the kidney. Layers of kidney.
25. 25.Nephron.
26. 26.The fornical apparatus of the calyces.
27. 27.Development of the kidneys, anomalies.
28. 28.Structure, parts of the ureter.
29. 29.The urinary bladder, trigonum vesicae.
30. 30.Blood supply, lymph drains, nerve supply of the organs of urinary system.
31. 31.The structure of the testis
32. 32.The parts of the epidydymis
33. 33.The prostate, parts, zones
34. 34.The external genitals organs.
35. 35.The male urethra, parts, sphincters.
36. 36.The structure of the endocrine system.
37. 37.Topography of the given organs.
38. 38.Classification of the endocrine system organs.
39. 39.Features characteristic for the organs of the endocrine system.
40. Respiratory system. General morpho-functional characteristic. Development.
41. Conducting part. Structural and tissue components. Morpho-functional characteristic of mucosa in conducting part. Respiratory part (acinus) of lung. Structure of alveoli and interalveolar septum. Air-blood barrier. Pleura. Regeneration.

42. Digestive system. General morpho-functional characteristic. Classification. Development. Oral cavity. Structure of mucosa layer of lips, cheeks, palate, tongue, gums, tonsils. Structure of mucosa layer in dorsal and ventral surface of tongue. Types of papillae. Tissue components of papillae.
43. Teeth. Development. Tissue components: enamel, dentin, cement, pulp, periodont. Structure and function.
44. Alimentary canal: esophagus, stomach, intestine. General morpho-functional characteristic. Development. Structural components: mucosa, submucosa, muscularis externa, adventitia or serosa.
45. Esophagus. Histologic characteristic. Mucous glands of esophagus. Esophago-stomach junction.
46. Stomach. Histologic characteristic. Structures of mucosa layer. Cellular components of cardiac, fundic and pyloric glands.
47. Small intestine. Histologic characteristic of duodenum, ileum, jejunum. Structural components of crypts, villi.
48. Small intestine. System of crypt-villum, their cellular components of epithelium.
49. Large intestine. Morpho-functional characteristic of colon, appendix, rectum. Structure of mucosa layer. Epithelium in different zones of rectum. Age changes. Regeneration.
50. Large digestive glands. General morpho-functional characteristic. Development. Structural and tissue components.
51. Salivary glands. Classification. Large salivary glands: parotid, submandibular, sublingual. Structural and tissue components. Types of secretion.
52. Pancreas. Structure of exocrine part (acinus) of pancreas. Cyto-physiology of acinar cells.
53. Liver. Structural components. Histologic characteristic of classic lobule, portal lobule, acinus. Regeneration.
54. Urinary system. General morpho-functional characteristic. Development. Kidney: cortex and medulla. Tissue components. Nephron. Structure and types of nephron.
55. Histophysiology of nephrons and collecting ducts. Morphology of endocrine apparatus: juxtaglomerular and prostaglandin. Regeneration.
56. Excretory passages of urinary system. General morpho-functional characteristic.
57. Structural and tissue components of calyces, papillae, renal pelvis. Morpho-functional characteristic of ureter, urinary bladder, urethra.
58. Male reproductive system. General morpho-functional characteristic. Development. Testis. Structural and tissue components. Seminiferous tubules. Spermatogenesis. Supporting cells and spermatogenic epithelium. Hematotesticular barrier.
59. Histophysiology of straight tubules, rete testis, efferent ductules. Extratesticular genital ducts. Structure of ductus epididymis, ductus deferens.
60. Male reproductive system. Accessory glands: seminal vesicles, bulbourethral glands, prostate. Structure and function.
61. Female reproductive system. General morpho-functional characteristic. Classification.
62. Development. Ovaries. Histologic characteristic of ovarian follicles. Ovulation, and formation of corpus luteum. Age changes of ovaries.
63. Uterus. Structural components: endometrium, myometrium, perimetrium. Histologic characteristic of endometrium in menstrual, postmenstrual, premenstrual phases of the menstrual cycle. Uterine tube and vagina. Structure and function.
64. Mammary gland. Development, structure of prepubertal and postpubertal gland. Regeneration.
65. Endocrine system. General morpho-functional characteristic. Classification. Central and peripheral endocrine glands. Diffuse endocrine system. Development of endocrine glands. Structural components. Regeneration.

Recommended reading for the lesson: [1-15]

Unit 5 Cardiovascular system

Key questions covered in Lesson 24. ***Anatomy of the cardiovascular system. Classification. Systemic and pulmonary circulation. Fetal circulation and postnatal transitional changes***.

1. General anatomy of the cardiovascular system.
2. Classification of the cardiovascular system
3. Systemic circulation: major arteries, veins, functional significance.
4. Pulmonary circulation: pulmonary trunk, arteries, veins, functional role.
5. Fetal circulation and postnatal transitional changes.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 25. ***Anatomy of the heart, great vessels and coronary arteries. The cardiac conduction system.***

1. Anatomy of the heart: chambers, septa, valves, wall structure.
2. Great vessels of the heart: aorta, pulmonary trunk, venae cavae, pulmonary veins.
3. Coronary arteries: origin, branches, areas of blood supply.
4. Cardiac veins and coronary sinus.
5. Cardiac conduction system: components, structure, functional significance.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 26. ***Arteries of the Head and Neck***

1. Common carotid arteries: origin, course, bifurcation.
2. External carotid artery: branches and areas of supply.
3. Internal carotid artery: parts, branches, areas of supply.
4. Subclavian artery: branches related to the head and neck.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 27. ***Veins of the Head and Neck***

1. Internal jugular vein: origin, course, tributaries.
2. External and anterior jugular veins: formation, drainage.
3. Venous sinuses of the dura mater: structure, drainage pathways.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 28. ***Blood Vessels of the Thoracic Cavity***

1. Aorta: parts, branches
2. Thoracic aorta: parts, branches, areas of supply.
3. Pulmonary trunk and pulmonary arteries.
4. Superior vena cava: formation, tributaries.
5. Azygos venous system: components and drainage.
6. Vascular supply and venous drainage of the thoracic organs.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 29. ***Blood Vessels of the Abdominal Cavity*****.**

1. Visceral branches of the abdominal aorta.
2. Parietal branches of the abdominal aorta.
3. Paired branches of the abdominal aorta.
4. Unpaired branches of the abdominal aorta.
5. Inferior vena cava.
6. Vena portae.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 30. ***Blood Vessels of the Upper Limbs.***

1. Subclavian and axillary arteries: course, branches, areas of supply.
2. Brachial artery: course, branches, terminal divisions.
3. Radial and ulnar arteries: course, branches, palmar arches.
4. Superficial and deep veins of the upper limb.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 31. ***Blood Vessels of the Pelvic Cavity.***

1. Common and internal iliac arteries: divisions, branches, areas of supply.
2. External iliac artery: course, transition to femoral artery.
3. Venous drainage of the pelvis: internal and external iliac veins.

Recommended reading for the lesson: [1,2,5,6,7]

Key questions covered in Lesson 32. ***Blood Vessels of the Lower Limbs.***

1. Femoral artery: course, branches, areas of supply.
2. Popliteal artery: branches and terminal divisions.
3. Anterior and posterior tibial arteries: course, branches, plantar arch.
4. Superficial and deep veins of the lower limb.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 33. ***Lymphatic System.***

1. General organization of the lymphatic system.
2. Lymphatic capillaries and vessels: structure and function.
3. Lymph nodes: structure, groups, drainage patterns.
4. Thoracic duct and right lymphatic duct: formation and termination.
5. Regional lymphatic drainage of major body areas.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 34. ***Histology of the organs of the cardiovascular system: arteries, veins, and microcirculatory vessels. Classification of blood vessels. General structural organization of the vessel wall and principles of regeneration.***

1. Classification of blood vessels: arteries, veins, microcirculatory vessels.
2. General structural organization of the vessel wall: tunica intima, media, adventitia.
3. Histological features of elastic and muscular arteries.
4. Histological features of veins and microcirculatory vessels.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 35. ***Histology of the heart, the origin and structure of its layers, valves, and conduction system. Cardiac regeneration and age-related features. Histology of lymphatic vessels.***

1. Histological structure of the heart wall: endocardium, myocardium, epicardium.
2. Origin and histological features of the cardiac layers and valves.
3. Structure of the cardiac conduction system.
4. Cardiac regeneration and age-related changes.
5. Histology of lymphatic vessels: structure and functional features.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 36. ***Histology of haemopoiesis and immune response: bone marrow, thymus.***

1. Histological structure of bone marrow: stroma, hematopoietic cells, vascular sinusoids.
2. Stages and regulation of haemopoiesis in bone marrow.
3. Histological structure of the thymus: cortex, medulla, stromal components.
4. Thymic epithelial cells and Hassall's corpuscles.
5. Role of bone marrow and thymus in immune response.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 37. ***Histology of spleen, lymph nodes, lymphoid follicles of the mucous membranes.***

1. Histological structure of the spleen: white pulp, red pulp, vascular organization.

2. Histological structure of lymph nodes: cortex, medulla, sinuses, stromal framework.
3. Lymphoid follicles: primary and secondary follicles, germinal centers.
4. Lymphoid tissue of mucous membranes (MALT): structure and localization.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 38. ***Unit Control***

1. General anatomy of the cardiovascular system.
2. Classification of the cardiovascular system
3. Systemic circulation: major arteries, veins, functional significance.
4. Pulmonary circulation: pulmonary trunk, arteries, veins, functional role.
5. Fetal circulation and postnatal transitional changes.
6. Anatomy of the heart: chambers, septa, valves, wall structure.
7. Great vessels of the heart: aorta, pulmonary trunk, venae cavae, pulmonary veins.
8. Coronary arteries: origin, branches, areas of blood supply.
9. Cardiac veins and coronary sinus.
10. Cardiac conduction system: components, structure, functional significance.
11. Common carotid arteries: origin, course, bifurcation.
12. External carotid artery: branches and areas of supply.
13. Internal carotid artery: parts, branches, areas of supply.
14. Subclavian artery: branches related to the head and neck.
15. Internal jugular vein: origin, course, tributaries.
16. External and anterior jugular veins: formation, drainage.
17. Venous sinuses of the dura mater: structure, drainage pathways
18. Aorta: parts, branches
19. Thoracic aorta: parts, branches, areas of supply.
20. Pulmonary trunk and pulmonary arteries.
21. Superior vena cava: formation, tributaries.
22. Azygos venous system: components and drainage.
23. Vascular supply and venous drainage of the thoracic organs.
24. Visceral branches of the abdominal aorta.
25. Parietal branches of the abdominal aorta.
26. Paired branches of the abdominal aorta.
27. Unpaired branches of the abdominal aorta.
28. Inferior vena cava.
29. Vena portae.
30. Subclavian and axillary arteries: course, branches, areas of supply.
31. Brachial artery: course, branches, terminal divisions.
32. Radial and ulnar arteries: course, branches, palmar arches.
33. Superficial and deep veins of the upper limb.
34. Common and internal iliac arteries: divisions, branches, areas of supply.
35. External iliac artery: course, transition to femoral artery.
36. Venous drainage of the pelvis: internal and external iliac veins.
37. Femoral artery: course, branches, areas of supply.
38. Popliteal artery: branches and terminal divisions.
39. Anterior and posterior tibial arteries: course, branches, plantar arch.
40. Superficial and deep veins of the lower limb.
41. General organization of the lymphatic system.
42. Lymphatic capillaries and vessels: structure and function.
43. Lymph nodes: structure, groups, drainage patterns.
44. Thoracic duct and right lymphatic duct: formation and termination.
45. Regional lymphatic drainage of major body areas.
46. Classification of blood vessels: arteries, veins, microcirculatory vessels.
47. General structural organization of the vessel wall: tunica intima, media, adventitia.
48. Histological features of elastic and muscular arteries.
49. Histological features of veins and microcirculatory vessels.
50. Regeneration and structural adaptation of blood vessels.
51. Histological structure of the heart wall: endocardium, myocardium, epicardium.
52. Origin and histological features of the cardiac layers and valves.
53. Structure of the cardiac conduction system.
54. Cardiac regeneration and age-related changes.

55. Histology of lymphatic vessels: structure and functional features.
56. Histological structure of bone marrow: stroma, hematopoietic cells, vascular sinusoids.
57. Stages and regulation of haemopoiesis in bone marrow.
58. Histological structure of the thymus: cortex, medulla, stromal components.
59. Thymic epithelial cells and Hassall's corpuscles.
60. Role of bone marrow and thymus in immune response.
61. Histological structure of the spleen: white pulp, red pulp, vascular organization.
62. Histological structure of lymph nodes: cortex, medulla, sinuses, stromal framework.
63. Lymphoid follicles: primary and secondary follicles, germinal centers.
64. Lymphoid tissue of mucous membranes (MALT): structure and localization

Recommended reading for the lesson: [1-15]

Unit 6 Central Nervous System

Key questions covered in Lesson 39. ***Introduction. General anatomy of the Central nervous system. Development, features and anomalies.***

1. General organization of the central nervous system.
2. Development of the brain and spinal cord.
3. Structural features of the spinal cord.
4. Structural features of the brain.
5. Congenital anomalies of the central nervous system.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 40. ***The Spinal cord.***

1. External structure of the spinal cord: segments, enlargements, roots.
2. Internal structure: gray and white matter, nuclei, central canal.
3. Ascending and descending tracts of the spinal cord.
4. Blood supply of the spinal cord.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 41. ***The Brainstem.***

1. General organization of the brainstem: medulla oblongata, pons, midbrain.
2. External features of the brainstem.
3. Internal structure: nuclei, tracts, reticular formation.
4. Cranial nerve nuclei and their functional groups.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 42. ***The Cerebellum.***

1. External structure of the cerebellum: hemispheres, vermis, lobes.
2. Internal structure: cerebellar cortex, white matter, deep nuclei.
3. Cerebellar peduncles: connections and pathways.
4. Functional divisions of the cerebellum.
5. Blood supply and functional significance of the cerebellum.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 43. ***The Diencephalon, limbic system***

1. Thalamus: nuclei, connections, functional significance
2. Hypothalamus: nuclei, connections, functional significance.
3. Epithalamus and pineal gland: structure and role.
4. Components of the limbic system: structures and connections.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 44. ***The Cerebral Cortex.***

1. Lobes and external features of the cerebral hemispheres.
2. Cytoarchitectonic layers of the cerebral cortex.
3. Functional areas of the cerebral cortex.
4. Cortical connections and fibres
5. Blood supply and functional organization of the cerebral cortex.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 45. ***The internal structure of the cerebrum.***

1. White matter of the cerebral hemispheres: projection, association, commissural fibers.
2. Basal nuclei: components, structure, functional significance.
3. Internal capsule: parts and fiber arrangement.
4. The corpus callosum:parts and functional significance

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 46. ***Ascending and Descending Tracts***

1. General organization of ascending and descending pathways.
2. Major ascending tracts: posterior columns, spinothalamic, spinocerebellar pathways.
3. Major descending tracts: corticospinal, rubrospinal, vestibulospinal pathways.
4. Course and termination of spinal tracts.
5. Functional significance of ascending and descending tracts.

Recommended reading for the lesson: [1-7,12]

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Key questions covered in Lesson 47. ***The meninges, ventricles, cerebrospinal fluid and dural sinuses. Cerebrospinal fluid circulation.***

1. Meninges of the brain and spinal cord: layers, structure, functions.
2. Ventricular system of the brain: parts and connections.
3. Dural venous sinuses: names, structure and drainage.
4. Choroid plexuses and formation of cerebrospinal fluid.
5. Circulation and absorption of cerebrospinal fluid.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 48. ***Histology of the Organs of the Central Nervous System: Spinal Cord, Cerebral Cortex, Cerebellum and Meninges***.

1. Histological structure of the spinal cord: gray and white matter organization.
2. Histological structure of the cerebral cortex: layers and neuronal types.
3. Histological structure of the cerebellar cortex and deep nuclei.
4. Neuroglia in the central nervous system: types and functions.
5. Histological structure of the meninges and their functional significance.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 49. ***Anatomy of the eye.***

1. Fibrous layer: components, function
2. Vascular layer: components, function

3. Neural layer: components, features, function
4. Chambers of the eye and intraocular fluids.
5. Extraocular muscles and movements of the eyeball.
6. Blood supply and Lacrimal apparatus

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 50. ***Histology of the organ of vision and its development. Histology of the layers of the eyeball (fibrous, vascular, and neural): cornea, lens, iris, retina. Lacrimal glands.***

1. Development of the eye and its tunics.
2. Histological structure of the fibrous layer: cornea and sclera.
3. Histological structure of the vascular layer: choroid and iris.
4. Histological structure of the neural layer: retina and optic nerve.
5. Histology of the lens and lacrimal glands.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 51. ***Histology of the olfactory organ. Histology of the olfactory epithelium. Histology of taste receptors and types of receptors.***

1. Histological structure of the olfactory organ.
2. Histology of the olfactory epithelium: cellular composition and organization.
3. Olfactory receptor cells: structure and regeneration.
4. Histology of taste buds and their cellular types.
5. Types of sensory receptors and functional classification.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 52. ***Anatomy of the ear and vestibular system.***

1. External ear: auricle, external acoustic meatus, tympanic membrane.
2. Middle ear: tympanic cavity, auditory ossicles, auditory tube.
3. Internal ear: bony and membranous labyrinth.
4. Cochlea and organ of hearing.
5. Vestibular apparatus: semicircular canals, utricle, saccule, functional significance.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 53. ***Histology of the auditory organ (organ of Corti) and the vestibular organ (maculae of the utricle and saccule, cristae ampullares).***

1. Histological structure of the cochlea and membranous labyrinth.
2. Organ of Corti: cellular composition and structural organization.
3. Supporting and sensory cells of the organ of Corti.
4. Maculae of the utricle and saccule: structure and functional features.
5. Cristae ampullares: structure and role in vestibular perception.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 54. ***Unit Control.***

1. Classifications of nerves system.
2. Structures of nervous system.
3. Development of nervous system
4. Anomalies of nervous system.
5. Anatomical structures of the spinal cord
6. Topography of the grey matters.

7. Topography of the white matters.
8. To define the spinal cord segment.
9. To draw the scheme cross section of spinal cord.
10. The conducting tracts of the spinal cord.
11. The parts of the brain stem.
12. Development of the brainstem.
13. External and internal structures of the medulla oblongata.
14. External and internal structures of the pons.
15. External and internal structures of the midbrain.
16. The lobes of the cerebellum.
17. Development of the cerebellum.
18. External and internal structures of the cerebellum.
19. The parts of the Diencephalon.
20. Development of the diencephalon.
21. External and internal structures of the thalamus.
22. External and internal structures of the hypothalamus.
23. External and internal structures of the epithalamus.
24. The lobes of the brain.
25. Sulci, gyri of the telencephalon.
26. Centres of the cerebral cortex.
27. The basal ganglia of the brain
28. The internal capsule and its parts
29. The corpus callosum and its parts
30. The white matter structures
31. The conducting tracts of the cerebrum.
32. The meninges and the spaces between them.
33. The ventricles and their connections, functions and significance
34. The dural sinuses and their functions
35. The cerebrospinal fluid and its function, significance and pathway.
36. The organ vision (eye) and the accessory apparatus of the eye.
37. The visual tract and it's all compartments
38. The center of vision.
39. The organ of hearing: the external, middle, internal ear.
40. The structure of the auditory analyser.
41. The structure of vestibular system.
42. Central nervous system. General morpho-functional characteristic. Development. Classification of the nervous centers (morphological and functional). Spinal cord, cerebrum, cerebellum. Structural components of organs: grey and white matter.
43. Histological structure of dura mater and pia mater. Blood-brain barrier.
44. Peripheral nervous system. General morpho-functional characteristic. Development.
45. Nerves. Sensitive nerve ganglia (spinal and cranial). Ganglia of autonomic nervous system (extra- and intramural). Structural components of organs: grey and white matter.
46. Peripheral nerve endings. Structure of reflex arcs.
47. Sense organs. General morpho-functional characteristic. Classification. Primary sensory organs: retina of eye, olfactory epithelium. Tissue components. Cyto-physiology of receptor cells.
48. Sense organs. General morpho-functional characteristic. Classification. Secondary sensory organs. Tissue components. Ear: cristae of semicircular canals, maculae of the vestibule, organ of Corti. Taste buds of tongue. Cyto-physiology of receptor cells.

Recommended reading for the lesson: [1-15]

Unit 7 Peripheral Nervous System

Key questions covered in Lesson 55. ***Introduction. General anatomy of the peripheral nervous system. Concept of joint innervation and Hilton's law.***

1. General organization of the peripheral nervous system.
2. Spinal nerves: roots, branches, formation of plexuses.
3. Reflex arc and its components
4. Concept of joint innervation.
5. Hilton's law and its anatomical basis.

Recommended reading for the lesson: : [1-7,12]

Key questions covered in Lesson 56. ***Cervical plexus.***

1. Formation of the cervical plexus: roots and location.
2. Cutaneous branches: course and areas of innervation.
3. Muscular branches: distribution and functions.
4. Phrenic nerve: origin, course, innervation.

Recommended reading for the lesson: : [1-7,12]

Key questions covered in Lesson 57. ***Brachial plexus.***

1. Formation of the brachial plexus: roots, trunks, divisions, cords.
2. Topography and relations of the brachial plexus.
3. Terminal branches and areas of innervation.
4. Collateral branches and their distribution.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 58. ***Thoracic nerves. Dermatomes. Lumbar plexus.***

1. Thoracic spinal nerves: formation, branches, intercostal nerves.
2. Dermatomes: segmental innervation and clinical significance.
3. Formation of the lumbar plexus: roots and location.
4. Major branches of the lumbar plexus and areas of innervation.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 59. ***Sacral plexus.***

1. Formation of the sacral plexus: roots and location.
2. Short branches of the sacral plexus.
3. Sciatic nerve: formation, course, terminal branches.
4. Pudendal nerve: course and areas of innervation.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 60. ***Autonomic nervous system***

1. General organization of the autonomic nervous system.
2. Sympathetic division: central and peripheral components.
3. Parasympathetic division: cranial and sacral outflow.
4. Autonomic ganglia and plexuses.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 61. ***Cranial nerves I,II,VIII***

1. Olfactory nerve (I): origin, pathway, functional significance.
2. Optic nerve (II): formation, course, optic chiasm, visual pathway.
3. Vestibulocochlear nerve (VIII): cochlear and vestibular parts, nuclei, functions.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 62. ***Cranial nerves III,IV,VI,XI,XII***

1. Oculomotor nerve (III): nuclei, course, branches, functions.

2. Trochlear nerve (IV): nucleus, course, innervation.
3. Abducens nerve (VI): nucleus, course, function.
4. Accessory nerve (XI): roots, course, innervation.
5. Hypoglossal nerve (XII): nucleus, course, tongue innervation.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 63. ***Cranial nerves V,VII,IX,X***

1. Trigeminal nerve (V): nuclei, divisions, sensory and motor functions.
2. Facial nerve (VII): nuclei, course, branches, parasympathetic components.
3. Glossopharyngeal nerve (IX): nuclei, course, branches, functional components.
4. Vagus nerve (X): nuclei, course, branches, visceral innervation.

Recommended reading for the lesson: [1-7,12]

Key questions covered in Lesson 56. ***Histology of nerve endings: receptors, synapses, effectors.***

1. Classification of nerve endings: sensory and motor.
2. Structure of sensory receptors: free and encapsulated endings.
3. Histology of synapses: types and ultrastructure.
4. Neuromuscular junction: structure and functional features.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 57. ***Histology of the organs of the peripheral nervous system: nerves, spinal cord and autonomic ganglia.***

1. Histological structure of peripheral nerves: nerve fibers, endoneurium, perineurium, epineurium.
2. Myelinated and unmyelinated nerve fibers: structure and differences.
3. Spinal (sensory) ganglia: structure and cellular composition.
4. Autonomic ganglia: structure and functional features.

Recommended reading for the lesson: [8,9,10,11,13,14,15]

Key questions covered in Lesson 66. Unit Control.

1. The spinal nerves. Cervical plexus. Formation. Zone innervation.
2. The short branches of brachial plexus.
3. The median nerve of brachial plexus
4. The ulnar nerve of brachial plexus
5. The radial nerve of brachial plexus
6. The musculocutaneus nerve of brachial plexus.
7. The short branches of sacral plexus.
8. The long branches of the sacral plexus.
9. The olfactory nerve. The optic nerve.
10. The occulomotor nerve.
11. The trochlear nerve.
12. The ophthalmic nerve of trigeminal nerve.
13. The maxillary nerve of trigeminal nerve.
14. The mandibular nerve of trigeminal nerve.
15. The abducens nerve.
16. The Facial nerve.
17. Auditory nerve.
18. Glossopharyngeal nerve.
19. Vagus nerve.
20. Accessory nerve.
21. Hypoglossal nerve.

22. The parasympathetic system.
23. The sympathetic system.
24. Peripheral nervous system. General morpho-functional characteristic. Development.
25. Nerves. Sensitive nerve ganglia (spinal and cranial). Ganglia of autonomic nervous system (extra- and intramural). Structural components of organs: grey and white matter.
26. Peripheral nerve endings. Structure of reflex arcs.
27. Nerve terminations. Classification. Morpho-functional characteristic. Receptors.
28. Synapses. Effectors. Types, structure and function. Reflex arc. Components. Types of reflex arcs.

1.

Recommended reading for the lesson: [1-15]

Methodological instructions for the implementation of independent work on the discipline

Methodological instructions for making an abstract:

1. To study the curriculum and the working curriculum.
2. Determine the place of the topic of this lecture in the structure of the discipline according to the thematic plan.
3. Find out all the issues that need to be studied.
4. To study material, which is in the syllabus, to clarify the amount of missing material on the basis of control questions, tasks for control work and questions submitted for the module (see the program discipline and the working curriculum).
5. Determine the literature in which there is the necessary educational material, and the sequence of its assimilation.
6. To process each educational material in the following way.
7. Read it in dynamics to understand the general essence..
8. Read the study material a second time, understanding each word and sentence
9. For the third time to identify the basic concepts, the essence of phenomena and processes, their structure and content, as well as the links between them.
10. Write it all down in a synopsis.
11. To establish a connection with the previous educational material.
12. Independently answer all control questions on this topic.

Methodological instructions for independent work:

1. Study the theoretical material well; master the method of applying knowledge in practice.
2. Be able to use the necessary equipment, materials, equipment for measurements.
3. To study the recommendations for specific laboratory or practical work, which are set out in textbooks and methodological developments.
4. Make a plan for laboratory or practical work.
5. Prepare the necessary material.
6. Perform tasks of laboratory or practical work.
7. Interpret the results and describe the identified phenomena.
8. Draw conclusions.
9. Draw up everything accordingly.