

**MEDICAL UNIVERSITY OF PLOVDIV
FACULTY OF DENTISTRY**

PROGRAM

IN

Anatomy and Histology

Approved by the Department Council on 26.02. 2024

Confirmed by the Faculty Council - Protocol № 5/ 24.04.2024

Syllabus

Discipline	Final exam/ semester	Auditorium classes				ECTS non- auditorium classes	ECTS total	Academic hours in years and semesters		
		Total	Lectures	Practices	ECTS			1 st year		2 nd year
Anatomy and Histology	After 3 rd semester						I	II	III	
				257	86	168	19.1	-	1/4	2/4

DISCIPLINE:

Anatomy, cytology, histology and embryology

TYPE OF DISCIPLINE ACCORDING TO THE UNIFORM STATE REQUIREMENTS:

Compulsory

LEVEL OF QUALIFICATION:

Master /M/

FORMS OF TRAINING:

Lectures, practicals, self-study.

YEAR OF TRAINING:

First and second years

DURATION OF TRAINING:

Three semesters

ACADEMIC HOURS:

254

TECHNICAL EQUIPMENT APPLIED IN THE TRAINING:

Slides, multimedia (CD - ADAM, Anatomist, How the body works), light microscope, videos, anatomical pictures, models, SECTRA virtual dissection table, native preparations.

FORMS OF EVALUATION:

Current semester tests, discussion and presentation of topographic regions in the end of third semester, final examination after the third semester.

EVALUATION CRITERIA:

Practical and theoretical knowledge of macroscopic and microscopic structure of organs and systems in the human body, as well as their topographic organization. Evaluation is formed by 70% of the exam evaluation (including equally weighted MCQ test and written essay) and 30% of the current assessment during the three semesters.

ASPECTS OF EVALUATION CRITERIA:

Evaluation is formed by 70% of the exam evaluation (including equally weighted MCQ test and written essay) and 30% of the current assessment during the three semesters.

SEMESTER EXAM:

Anatomy and histology after 3rd semester. The examination is conducted in two parts: a practical test and a written exam, including test and written essay.

LECTURER:

Professors and associate professors from the Department of Anatomy, Histology and Embryology.

DEPARTMENT:

Anatomy, Histology and Embryology

ANNOTATION

The course increased knowledge of the structure of the human body systems and organs at various levels of the organization - from macroscopic to ultramicroscopic.

MAIN TASKS OF THE CURRICULUM

1. Study of the macroscopic structure of organs and systems in the human body.
2. Study of the microscopic structure of the organs in the human body.
3. Study of the embryonic development of organs and systems in the human body.
4. Study of the topography of the organs in the human body.

EXPECTED RESULTS

Thorough knowledge of the macroscopic and microscopic structure and topography of organs and systems in the human body.

LECTURE SYLLABUS
I year, I semester
LOCOMOTORY SYSTEM

№	TOPIC	HOURS
1.	Introduction to human anatomy.	2h.
2.	Osteogenesis. Joints between bones.	2h.
3.	Myology.	2h.
4.	MVN of the upper limb.	2h.
5.	MVN of the upper limb. Topographic structures.	2h.
6.	MVN of the lower limb.	2h.
7.	MVN of the lower limb. Topographic structures.	2h.

TOTAL: 14 h.

LECTURES

I year, II semester

Internal organs and topographic anatomy of the human body

№	Topic	Hours
1.	Principal structure of a tube and parenchymatous organs. Cardiovascular system. Greater and lesser blood circuits. Fetal blood circuit.	2 h.
2.	Lymph (immune) system.	2 h.
3.	Respiratory system- general structure of the organs of the respiratory system. Nasal cavity, trachea, bronchi and lungs.	2h.
4.	Endocrine system. Hypophysis, thyroid gland, adrenal gland.	2 h.
5.	Digestive system – oral cavity. Compartments. Tongue, salivary glands, tooth – microscopic structure, embryonic development.	2h.
6.	Digestive system. Pharynx, oesophagus and stomach. Small and large intestine.	2 h.
7.	Digestive system. Liver and pancreas.	2 h.
8.	Urinary system. Kidney, ureter and urinary bladder.	2 h.
9.	Male and female reproductive systems.	2 h.
10.	Neck. Topography.	2 h.

11.	Axillary fossa. Thorax. Thoracic wall.	2 h.
12.	Thorax. Thoracic cavity. Pleural cavity. Mediastinum.	2 h.
13.	Abdomen. Abdominal wall. Abdominal cavity. Peritoneal cavity – upper region.	2 h.
14.	Peritoneal cavity – lower region. Retroperitoneum.	2 h.
15.	Pelvic cavity. Perineum.	2h.

TOTAL: 30 h.

LECTURE SYLLABUS

2nd year, 1st semester

Nervous system, sensory organs and topography of the head

№	SUBJECT	HOURS
1.	Introduction to morphology of nervous system. Development of nervous system. Spinal cord. Spinal nerves. Formation, characteristics.	3 h
2.	Brain. General description. Medulla oblongata. Pons.	3 h
3.	Midbrain. Cerebellum.	3 h
4.	Diencephalon. Thalamus.	2 h
5.	Diencephalon. Hypothalamus, subthalamus. III-ventricle.	2 h

6.	Forebrain – brain cortex, white matter, basal ganglia.	2 h
7.	Meninges, ventricular system and blood supply of CNS.	2 h
8.	Rhinencephalon. Limbic system.	2 h
9.	Pathways in CNS.	2 h
10.	Eye. Visual system.	2 h
11.	Ear. Auditory and vestibular systems.	2 h
12.	Cranial nerves.	2 h
13.	Cranial nerves.	2 h
14.	Autonomic nervous system.	2 h
15.	Topography of the head. Regions. Blood and nerve supply, lymph drainage. Epicranial region.	2 h
16.	Temporal region, parotidomasseteric region, buccal region.	2 h
17.	Infratemporal region, orbital region.	2 h
18.	Oral region. Tongue, salivary glands. Sublingual region.	2 h
19.	Oral region. Tongue, salivary glands – macroscopic structure, blood supply, innervation.	2 h

20.	Oral region. Tooth. Functional groups of teeth. Dentition.	2 h
21.	Nasal region. Peripharyngeal space.	2 h

TOTAL: 45 hrs

PRACTICAL SEMINARS

I year, I semester

Locomotory system

№	TOPIC	HOURS
1.	1. Bones of the skeleton. Vertebral column. a. Vertebrae. Typical vertebrae. Principal structure. Regional characteristics. First and second atypical vertebrae. б. Curves of the vertebral column. Skeleton of the thorax – bony and cartilaginous part of the ribs, classification. Sternum – parts.	2 h.
2.	2. Bones of the shoulder girdle and upper limb. Clavicle – shape, location. Scapula – location, surfaces, joint surface. Humerus – proximal and distal end, joint surfaces.	2h.
3.	Bones of the shoulder girdle and upper limb. Ulna and radius – proximal and distal end - joint surfaces, bony elements. Bones of the wrist, hand and fingers.	2 h.
4.	Bones of the pelvic girdle and lower limb. Pelvic girdle: hip bone – parts, joint surfaces. Sacrum - development and function. Femur – proximal and distal end - joint surfaces. Knee cap. Tibia and fibula – joint surfaces of the proximal and distal end. Bones of the ankle and foot.	2 h.
5.	Bones of the vault. Frontal and parietal bone. Vault. Skull of the newborn.	2h.

6.	Occipital and temporal bones. Cavities and canals of the temporal bone.	2 h.
7.	Bones of the skull base. Sphenoid and ethmoid bones.	2 h.
8.	Facial skull. Maxilla. Mandible. Age characteristics. Small facial bones.	2 h.
9.	Skull as a whole. Nasal cavity and paranasal air sinuses. Age characteristics of the skull.	2 h.
10.	Skull as a whole. Orbit, temporal, infratemporal and pterygopalatine fossas.	2 h.
11.	Skull as a whole. Internal and external base of the skull.	2 h.
12.	Skull topography. Openings and elements, passing through them. Names of the cranial nerves.	2 h.
13.	Test on skull and bones of the trunk and limbs.	2 h.
14.	Joints between bones. Joints of the limbs – shoulder and elbow joints. Principle structure, biomechanics.	2 h.
15.	Joints between bones. Joints of the limbs – hip and knee joints. Principle structure, biomechanics.	2h.
16.	Joints between bones. Joints of the limbs - hip and knee joints. Principle structure, biomechanics.	2h.
17.	MVN of the upper limb. Muscles of the forearm and hand.	2h.
18.	MVN of the upper limb, topography.	2h.
19.	MVN of the lower limb. Muscles of the pelvis and thigh.	2h.

20.	MVN of the lower limb. Muscles of the leg and foot.	2h.
21.	MVN of the lower limb, topography.	2h.
22.	Review on muscles of the limbs.	2h.
23.	Test on joints and MVN of the limbs.	2h.
24.	Connections of the normal locomotory system morphology with clinical practice.	2h.

TOTAL: 48 h.

PRACTICAL SEMINARS

I year, II semester

Internal organs and topographic anatomy of the human body

№	Topic	Hours
1.	Principal structure of a tube and parenchymatous organs.	2 h.
2.	Cardiovascular system – macro- and microscopic anatomy of the blood vessels.	2 h.
3.	Heart — macro-and microscopic anatomy.	2 h.
4.	Immune system-bone marrow, thymus, lymph nodes - macro-and microscopic anatomy.	2 h.
5.	Immune system - spleen and tonsils - macro-and microscopic anatomy.	2 h.
6.	Respiratory system. Nasal cavity, paranasal air sinuses and larynx – macro-and microscopic anatomy.	2 h.

7.	Respiratory system. Trachea, bronchi and the lungs – macroscopic anatomy.	2 h.
8.	Respiratory system. Trachea, bronchi and the lungs – microscopic anatomy.	2 h.
9.	Endocrine system. Macro-and microscopic anatomy of the glands.	2 h.
10.	Test, practical test in: cardiovascular, immune, respiratory and endocrine systems.	2h.
11.	Digestive system. Oral cavity. Palate, lips, cheeks. Tongue. Microscopic anatomy.	2h.
12.	Digestive system. Oral cavity. Teeth. Salivary glands. Macroscopic and microscopic anatomy.	2h.
13.	Digestive system. Pharynx and oesophagus. Stomach. Macroscopic and microscopic anatomy.	2h.
14.	Digestive system. Small and large intestine. Pancreas. Macroscopic and microscopic anatomy.	2h.
15.	Digestive system. Liver, intra- and extrahepatic ducts. Macroscopic and microscopic anatomy.	2h.
16.	Urinary system – kidney, ureter and urinary bladder. Macroscopic and microscopic anatomy.	2h.
17.	Male reproductive system. Macroscopic and microscopic anatomy of external and internal genitalia.	2h.
18.	Female reproductive system. Ovary, uterus, oviduct and vagina. Macroscopic and microscopic anatomy.	2h.
19.	Test, practical test in: digestive, urinary and reproductive systems.	2h.

20.	Neck. Cervical fascia and superficial elements. Lateral cervical region.	2h.
21.	Neck. Submandibular trigone. Carotid trigone. Sternocleidomastoid region.	2h.
22.	Neck. Infrahyoid region. "Root" of the neck.	2h.
23.	Axillary fossa.	2h.
24.	Thoracic wall, thoracic cavity. Situs thoracis. Pleura. Mediastinum. Diaphragm.	2h.
25.	Mediastinum – Superior, anterior, middle and posterior mediastinum.	2h.
26.	Abdomen: Anterior abdominal wall. Inguinal canal. Peritoneum – morphological characteristics and structures.	2h.
27.	Abdomen: Abdominal cavity. Peritoneal compartment of the abdominal cavity. Peritoneal compartment –upper region. Celiac trunk.	2h.
28.	Test, practical test in neck, axillary fossa, thorax, abdomen – abdominal wall, upper region.	2h.
29.	Abdomen: Peritoneal compartment – lower and pelvic regions. Superior and inferior mesenteric vessels.	2h.
30.	Abdomen: Extraperitoneal organs. Retroperitoneal and subperitoneal compartments of the abdominal cavity. Perineum.	2h.

TOTAL: 60 h.

PRACTICAL SYLLABUS

2nd year, 1st semester

Nervous system, sensory organs and topography of the head

№	SUBJECT	HOURS
1.	Cranium – review.	2h
2.	Spinal cord. Meninges of spinal cord. Blood supply.	2h
3.	Brainstem – medulla. External and internal structure.	2h
4.	Brainstem – pons. External and internal structure.	2ч.
5.	Midbrain. Cerebellum. IVth ventricle.	2h
6.	Spinal cord, spinal ganglion, peripheral nerve – microscopic structure.	2h
7.	Diencephalon. IIIrd ventricle.	2h
8.	Telencephalon. Gross brain. Brodman’s areas. Rhinencephalon. Limbic system.	2h
9.	White matter. Basal ganglia.	2h
10.	Cerebral and cerebellar cortex – microscopic structure.	2h
11.	Practical and theoretical quiz.	2h
12.	Lateral ventricles. Meninges Blood supply.	2h
13.	Eye and ear – Macroscopic structure.	2h

14.	Sensory organs – eye, ear – microscopic structure.	2h
15.	Cranial nerves – III, IV, VI, XII.	2h
16.	Cranial nerves – V.	2h
17.	Cranial nerves – VII.	2h
18.	Cranial nerves – IX, X, XI.	2h
19.	Practical and theoretical quiz.	2h
20.	Epicranial region. Temporal region. Muscles of facial expression.	2h
21.	Superficial (lateral) regions of the face (without parotideomasseteric region).	2h
22.	Parotideomasseteric, buccal and infratemporal regions. Temporomandibular joint. Muscles of mastication.	2h
23.	Oral region. Parts. Oral Cavity. Palate, floor of the mouth, fauces. Tongue. Sublingual region.	2h
24.	Oral region. Teeth. Anatomy, functional groups, tooth numbering, occlusion, types of occlusion. Blood and nerve supply, lymph drainage, innervation.	2h
25.	Nasal region. Paranasal sinuses.	2h
26.	Orbital region.	2h

27.	Practical and theoretical quiz on the head topography.	2h
28.	Discussion on the dissection preparations.	2h
29.	1. Retropharyngeal space. 2. Lateropharyngeal space.	2h
30.	Review on topographic anatomy of the head.	2h

TOTAL: 60 hrs

LECTURES – SYNOPSES

LECTURE № 1 – 2 hours

INTRODUCTION TO NORMAL MORPHOLOGY

1. Anatomy within the system of biological sciences.
2. Subject and tasks of anatomy.
3. Importance of anatomy for dental practice.
4. Anatomical nomenclature.
5. Morphological organization of the human body.
 - 5.1 Compartments, regions, systems and elements.
 - 5.2 Orientation in the human body.

LECTURE № 2 – 2 hours

OSTEOLOGY.

1. General remarks.
2. Bone as an organ.
3. Bone shape and structure.
4. Clasification of bones.
5. Growth and development of bones.

JOINTS BETWEEN BONES.

1. General remarks.
2. Types of joints between bones.
3. Solid joints.
 - 3.1. Types.
4. Synovial joints.
 - 1.1 Characteristic
 - 1.2 Clasification
 - 1.3 Biomechanics

LECTURE № 3 – 2 hours

MYOLOGY.

1. General remarks.
2. Muscle as an organ.
 - 2.1 Structure of the muscle
 - 2.2 Classification of muscles
3. Auxiliary structures of the muscles.
4. Biomechanics.

LECTURE № 4 – 2 hours

MUSCLE GROUPS, BLOOD SUPPLY AND INNERVATION OF THE UPPER LIMB.

1. Muscle groups.
2. Main blood vessels.
3. Innervation.
 - 3.1 General remarks
 - 3.2 Brachial Plexus
 - 3.3 Main branches of the upper limb.

LECTURE № 5 – 2 hours

TOPOGRAPHY OF THE UPPER LIMB

1. Topographic regions.
 - 1.1. Boundaries
 - 1.2. Topography
2. Topographic structures.
 - 2.1. Boundaries
 - 2.2. Content

LECTURE № 6 – 2 hours

MUSCLE GROUPS, BLOOD SUPPLY AND INNERVATION OF THE LOWER LIMB.

1. Muscle groups.
2. Main blood vessels.
3. Innervation.
 - 3.1 General remarks
 - 3.2 Lumbo-sacral Plexus
 - 3.3 Main branches of the lower limb

LECTURE № 7 – 2 hours

TOPOGRAPHY OF THE LOWER LIMB

1. Topographic regions.
 - 1.1. Boundaries
 - 1.2. Topography
2. Topographic structures.
 - 2.1. Boundaries
 - 2.2. Content

LECTURE № 8 – 2 hours

CARDIOVASCULAR SYSTEM.

1. Greater and lesser blood circuits.
2. Fetal blood circuit.
3. Heart.
 - 3.1 Macroscopic anatomy
 - 3.2 Microscopic anatomy
 - 3.3 Blood and nerve supply

LECTURE № 9 – 2 hours

IMMUNE SYSTEM.

1. General characteristic.
2. Embryogenesis.
3. Bone marrow, thymus, lymph nodes and spleen.
 - 3.1. Macroscopic anatomy
 - 3.2. Microscopic anatomy
 - 3.3. Blood and nerve supply

LECTURE № 10 – 2 hours

RESPIRATORY SYSTEM

1. Embryogenesis.
2. General structure of the organs of the respiratory system.
3. Nasal cavity, larynx, trachea and lungs.
 - 3.1. Macroscopic anatomy
 - 3.2. Microscopic anatomy
 - 3.3. Blood and nerve supply

LECTURE № 11 – 2 hours

ENDOCRINE SYSTEM

1. General characteristic and classification.
2. Hypothalamus - hypophysial system.
3. Hypophysis, thyroid gland, adrenal gland.
 - 3.1. Embryogenesis
 - 3.2. Macroscopic anatomy
 - 3.3. Microscopic anatomy
 - 3.4. Blood and nerve supply

LECTURE № 12 – 2 hours

DIGESTIVE SYSTEM

1. Oral cavity. Compartments.
2. Tongue, salivary glands, tooth.
 - 2.1. Embryogenesis
 - 2.2. Macroscopic anatomy
 - 2.3. Microscopic anatomy
 - 2.4. Blood and nerve supply

LECTURE № 13 – 2 hours

DIGESTIVE SYSTEM

1. Pharynx, oesophagus, stomach, small and large intestine.
 - 1.1. Embryogenesis
 - 1.2. Macroscopic anatomy
 - 1.3. Microscopic anatomy
 - 1.4. Blood and nerve supply

LECTURE № 14 – 2 hours

DIGESTIVE SYSTEM

1. Liver and pancreas.
 - 1.1. Embryogenesis
 - 1.2. Macroscopic anatomy
 - 1.3. Microscopic anatomy
 - 1.4. Blood and nerve supply

LECTURE № 15 – 2 hours

URINARY SYSTEM

1. Embryogenesis and general structure of the organs.
2. Kidney, ureter and urinary bladder.
 - 2.1. Macroscopic anatomy
 - 2.2. Microscopic anatomy
 - 2.3. Blood and nerve supply

LECTURE № 16 – 2 hours

FEMALE AND MALE REPRODUCTIVE SYSTEMS

1. Ovary, uterus, oviduct, vagina and external genitalia.
 - 1.1. Embryogenesis
 - 1.2. Macroscopic anatomy
 - 1.3. Microscopic anatomy
 - 1.4. Blood and nerve supply
2. Testis, epididymis, ductus deferens, prostate, seminal vesicles, penis and urethra.
 - 2.1. Macroscopic anatomy
 - 2.2. Microscopic anatomy
 - 2.3. Blood and nerve supply

LECTURE № 17 – 2 hours

TOPOGRAPHIC ANATOMY OF NECK

1. Superficial elements.
2. Cervical fascia.
3. Regions.
 - 3.1 Borders
 - 3.2 Topography
 - 3.3 Content

LECTURE № 18 – 2 hours

TOPOGRAPHIC ANATOMY OF THORAX

1. Axillary fossa.
 - 1.1 Anterior, posterior, medial, lateral and inferior walls – elements
 - 1.2 Content
 - 1.2.1 Blood vessels
 - 1.2.2 Nerves
 - 1.2.3 Lymph elements
2. Thorax.
 - 2.1 Regions
 - 2.1.2 Boundaries
3. Thoracic wall.

LECTURE № 19 – 2 hours

TOPOGRAPHIC ANATOMY OF THORAX

1. Thoracic cavity.
2. Pleural cavity.
3. Mediastinum.
 - 3.1 Compartments
 - 3.2 Content

LECTURE № 20 – 2 hours

TOPOGRAPHIC ANATOMY OF ABDOMINAL CAVITY

1. Abdominal wall.
 - 1.1 Muscles, vessels, nerves
 - 1.2 Topography
2. Inguinal canal.
 - 2.1 Morphological description
 - 2.2 Content
3. Abdominal and peritoneal cavities.
 - 3.1 Compartments
4. Upper peritoneal region.
 - 4.1 Borders
 - 4.2 Peritoneal structures and spaces
 - 4.3 Organs

LECTURE № 21 – 2 hours

TOPOGRAPHIC ANATOMY OF ABDOMINAL CAVITY

1. Lower peritoneal region.
 - 1.1. Borders
 - 1.2. Peritoneal structures and spaces
 - 1.3. Organs
2. Retroperitoneum.
 - 2.1. Borders
 - 2.2. Primary and secondary retroperitoneal organs
 - 2.3. Vessels and nerves

LECTURE № 22 – 2 hours

TOPOGRAPHIC ANATOMY OF PELVIS

1. Peritoneal, subperitoneal regions and perineum.
2. Organs, spaces, muscles and fascias.

LECTURE № 23 – 2 hours

INTRODUCTION TO MORPHOLOGY OF THE NERVOUS SYSTEM. SPINAL CORD

1. General information.
2. Ontogenesis and phylogeny.
3. Spinal cord.
 - 3.1 External structure.
 - 3.2 Internal structure.
 - 3.2.1 Cytoarchitecture
 - 3.2.2 Myeloarchitecture
4. Spinal nerves.
 - 4.1 Formation
5. Meninges.
6. Blood supply.

LECTURE № 24 – 2 hours

BRAIN. GENERAL INFORMATION. MEDULLA. PONS

1. Brain.
 - 1.1 Embryonic development.
 - 1.2 Divisions
2. Medulla.
 - 2.1 External morphology.
 - 2.2 Internal morphology.
 - 2.2.1 Gray matter.
 - 2.2.2 White matter
3. Pons.
 - 3.1 External morphology.
 - 3.2 Internal morphology.
 - 3.2.1 Gray matter.
 - 3.2.2 White matter
4. Rhomboid fossa.

LECTURE № 25 – 2 hours

MIDBRAIN. CEREBELLUM

1. Midbrain.
 - 1.1 Parts.
 - 1.2 External morphology
 - 1.3 Internal morphology
 - 1.3.1 Grey matter
 - 1.3.2 White matter
2. Cerebellum.
 - 2.1. Divisions.
 - 2.1.1 Vermis – lobules
 - 2.1.2 Cerebellar hemispheres – lobules

- 2.2 Cerebellar cortex – microscopic structure
- 2.3 Grey and white matter.
- 2.4 Functions.

LECTURE № 26 – 2 hours

DIENCEPHALON. THALAMUS. EPITHALAMUS. METATHALAMUS

- 1. Thalamus.
 - 1.1 External morphology
 - 1.2 Internal morphology. Nuclei
 - 1.3 Functional aspects
- 2. Epithalamus.
 - 2.1 Morphology
 - 2.2 Functional aspects
- 3. Metathalamus.
 - 3.1 Morphology
 - 3.2 Functional aspects

LECTURE № 27 – 2 hours

DIENCEPHALON. HYPOTHALAMUS. SUBTHALAMUS

- 1. Hypothalamus.
 - 1.1 Included structures
 - 1.2 Nuclei - characteristics
 - 1.3 Connections
- 2. Subthalamus
 - 2.1 Grey matter
 - 2.2 Connections

LECTURE № 28 – 2 hours

BRAIN. GENERAL CHARACTERISTICS. CEREBRAL CORTEX. WHITE MATTER. BASAL GANGLIA

- 1. General characteristics.
- 2. Relief of the hemispheres.
- 3. Cerebral cortex.
 - 3.1 Microscopic structure
 - 3.2 Cortical areas.
- 4. White matter
 - 4.1 Association fibers
 - 4.2 Commissural fibers
 - 4.3 Projection fibers .
- 5. Basal ganglia
 - 5.1. Location
 - 5.2 Functional aspects

LECTURE № 29 – 2 hours

MENINGES, VENTRICULAR SYSTEM AND BLOOD SUPPLY OF THE BRAIN

- 1. Meninges of the brain.

- 1.1 Dura matter
- 1.2 Arachnoidea matter
- 1.3 Pia matter
2. Ventricular system.
 - 2.1 Fourth ventricle
 - 2.2 Third ventricle
 - 2.3 Lateral ventricle
3. Blood supply of the brain.

LECTURE № 30 – 2 hours

RHINENCEPHALON. LIMBIC SYSTEM

1. Rhinencephalon
 - 1.1 Olfactory bulb
 - 1.2 Olfactory tract
 - 1.3 Olfactory triangle
 - 1.4 Olfactory cortex
2. Limbic system
 - 2.1 Limbic cortex
 - 2.2 Limbic nuclei
 - 2.3 Limbic pathways

LECTURE № 31 – 2 hours

PATHWAYS

1. Afferent pathways
 - 1.1 Pathways for external sensation
 - 1.2 Pathways for deep sensation
 - 1.3 Pathway for internal sensation
 - 1.4 Pathways for specific sensation
2. Efferent pathways
 - 2.1 Pyramidal motor system
 - 2.2 Extrapyramidal motor system

LECTURE № 32 – 2 hours

SENSORY ORGANS. EYE

1. Eye bulb
 - 1.1 Fibrous coat
 - 1.2 Vascular coat
 - 1.3 Inner coat
 - 1.3.1 Retina – microscopic structure
 - 1.4 Internal nucleus
2. Auxiliary organs of the eye
 - 2.1 Muscles of the eye
 - 2.2 Palpebrae
 - 2.3 Conjunctiva
 - 2.4 Lacrimal apparatus
3. Pathway of vision

LECTURE № 33 – 2 hours

SENSORY ORGANS. EYE

1. External ear.

- 1.1 Auricle
- 1.2 External auditory meatus
2. Middle ear.
 - 2.1 Tympanic membrane
 - 2.2 Tympanic cavity
 - 2.3 Auditory tube
 - 2.4 Auditory ossicles
3. Internal ear.
 - 3.1 Bony labyrinth
 - 3.2 Membranous labyrinth. Organ of Corti – microscopic structure.
4. Pathway of hearing and equilibrium.

LECTURE № 34 – 2 hours

CRANIAL NERVES

1. General characteristics
 - 1.1 Number
 - 1.2 Types of fibers in the nerve
 - 1.3 Groups of cranial nerves
 - 1.4 Functional aspects
2. Nuclei of cranial nerves in the brain stem.

LECTURE № 35 – 2 hours

CRANIAL NERVES

1. Cranial nerves
 - 1.1. Appearance on the brain surface, path and exit of the cranial cavity.
 - 1.2. Branches and areas of innervation.

LECTURE № 36 – 2 hours

AUTONOMIC NERVOUS SYSTEM

1. Morphological and functional characteristics.
2. Divisions.
 - 2.1 Sympathetic division – centers, ganglia and plexuses
 - 2.2 Parasympathetic division – centers, ganglia and plexuses
 - 2.3 Morphological and functional differences.

LECTURE № 37 – 2 hours

TOPOGRAPHIC ANATOMY OF THE HEAD

1. Regions.
2. Blood supply, lymph drainage and innervation.
3. Regio frontoparietooccipitalis.
 - 3.1 Boundaries
 - 3.2 Topography
 - 3.3 Content

LECTURE № 38 – 2 hours

TOPOGRAPHIC ANATOMY OF THE HEAD

1. Regions.
2. Blood supply, lymph drainage and innervation.
3. Regio frontoparietooccipitalis.
 - 3.1 Boundaries

- 3.2 Topography
- 3.3 Content

LECTURE № 39 – 2 hours

TOPOGRAPHIC ANATOMY OF THE HEAD

- 1. Regio parotideomasseterica.
 - 1.1 Boundaries
 - 1.2 Topography
 - 1.3 Content
- 2. Regio temporalis.
 - 2.1 Boundaries
 - 2.2 Topography
 - 2.3 Content
- 3. Regio bucalis.
 - 3.1 Boundaries
 - 3.2 Topography
 - 3.3 Content

LECTURE № 40 – 2 hours

TOPOGRAPHIC ANATOMY OF THE HEAD

- 1. Regio infratemporalis.
 - 1.1 Boundaries
 - 1.2 Topography
 - 1.3 Content
- 2. Regio orbitalis.
 - 2.1 Boundaries
 - 2.2 Content

LECTURE № 41 – 2 hours

TOPOGRAPHIC ANATOMY OF THE HEAD

- 1. Regio oralis.
 - 1.1 Boundaries
 - 1.2 Content
- 2. Tongue and salivary glands.
 - 2.1 Macroscopic description
- 3. Regio sublingualis.
 - 3.1 Boundaries
 - 3.2 Content

LECTURE № 42 – 2 hours

TOPOGRAPHIC ANATOMY OF THE HEAD

- 1. Tongue and salivary glands
 - 1.1 Gross anatomy
 - 1.2. Blood supply
 - 1.3. Nerve supply

LECTURE № 43 – 2 hours

TOPOGRAPHIC ANATOMY OF THE HEAD

1. Teeth.
 - 1.1. Gross anatomy
 - 1.2. Groups, morphological characteristic
 - 1.3. Dentition

LECTURE № 44 – 2 hours

TOPOGRAPHIC ANATOMY OF THE HEAD

1. Regio nasalis.
 - 1.1 External nose
 - 1.2 Nasal cavity
 - 1.2.1 Bony skeleton
 - 1.2.2 Nasal mucosa
 - 1.3 Paranasal air sinuses
2. Parapharyngeal space.

PRACTICALS –SYNOPSIS I SEMESTER LOCOMOTORY SYSTEM

PRACTICAL SEMINAR № 1 – 2 hours

BONES OF THE TRUNK

1. Vertebral column.
 - 1.1 General remarks.
 - 1.2 Vertebrae-principle structure
 - 1.2.1 Typical vertebrae. Regional characteristics.
 - 1.2.2. Atypical vertebrae.
 - 1.3. Vertebral column as a whole.
2. Bones of the thorax.
 - 1.1. Ribs. Types. General and specific morphological characteristic.
 - 1.2. Sternum. Morphological characteristic.

PRACTICAL SEMINAR № 2 – 2 hours

BONES OF THE SHOULDER GIRDLE AND UPPER LIMB

1. Bones of the shoulder girdle and upper limb.
 - 1.1. Clavicle – shape, location.
 - 1.2. Scapula – location, surfaces, joint surface.
 - 1.3. Humerus – proximal and distal end, joint surfaces.

PRACTICAL SEMINAR № 3 – 2 hours

BONES OF THE SHOULDER GIRDLE AND UPPER LIMB

1. Ulna and radius –
 - 1.1. Proximal end
 - 1.1.1. Joint surfaces, bony elements.

- 1.2. Distal end
 - 1.2.1. Joint surfaces, bony elements
2. Bones of the wrist, hand and fingers.

PRACTICAL SEMINAR № 4 – 2 hours

PELVIC GIRDLE AND LOWER LIMB

1. Pelvic girdle: hip bone – parts, joint surfaces.
2. Sacrum - development and function.
3. Femur – proximal and distal end - joint surfaces.
4. Knee cap.
5. Tibia and fibula – joint surfaces of the proximal and distal end.
6. Bones of the ankle and foot.

PRACTICAL SEMINAR № 5 – 2 hours

BONES OF THE VAULT

1. Frontal bone.
2. Parietal bone.
3. Vault.
4. Vault of the newborn.

PRACTICAL SEMINAR № 6 – 2 hours

BONES OF THE VAULT

1. Occipital bone.
2. Temporal bone.
 - 2.1. Cavities and canals of the temporal bone.

PRACTICAL SEMINAR № 7 – 2 hours

BONES OF THE SKULL BASE

1. Sphenoid bone.
2. Ethmoid bone.

PRACTICAL SEMINAR № 8 – 2 hours

FACIAL BONES

1. Maxilla.
2. Mandible.
3. Small facial bones.

PRACTICAL SEMINAR № 9 – 2 hours

SKULL AS A WHOLE

1. Nasal cavity.
2. Paranasal air sinuses.
3. Age characteristics of the skull.

PRACTICAL SEMINAR № 10 – 2 hours

SKULL AS A WHOLE

1. Orbit.
2. Temporal fossa.
3. Infratemporal fossa.
4. Pterygopalatine fossa.

PRACTICAL SEMINAR № 11 – 2 hours

SKULL AS A WHOLE

1. Internal and external base of the skull.

PRACTICAL SEMINAR № 12 – 2 hours

SKULL TOPOGRAPHY

1. Openings and elements, passing through them.
2. Names of the cranial nerves.

PRACTICAL SEMINAR № 13 – 2 hours

TEST. PRACTICAL TEST

PRACTICAL SEMINAR № 14 – 2 hours

JOINTS BETWEEN BONES

1. Joints of the upper limb.
 - 1.1 Shoulder joint
 - 1.2 Elbow joint
2. Principle structure and biomechanics.

PRACTICAL SEMINAR № 15 – 2 hours

JOINTS BETWEEN BONES

1. Joints of the lower limb.
 - 1.1 Hip joint
 - 1.2 Knee joint
2. Principle structure and biomechanics.

PRACTICAL SEMINAR № 16 – 2 hours

MUSCLES, VESSELS AND NERVES OF THE UPPER LIMB

1. Muscles of the upper limb.
 - 1.1 Muscles of the shoulder girdle
 - 1.2 Muscles of the arm

PRACTICAL SEMINAR № 17 – 2 hours

MUSCLES, VESSELS AND NERVES OF THE UPPER LIMB

1. Muscles of the upper limb.
 - 1.1 Muscles of the forearm
2. Brachial Plexus.
 - 2.1 Origin
 - 2.2 Main branches for the upper limb
3. Blood supply.

PRACTICAL SEMINAR № 18 – 2 hours

TOPOGRAPHIC ANATOMY OF THE UPPER LIMB

1. Topographic structures.
 - 1.1 Boundaries
 - 1.2 Content

PRACTICAL SEMINAR № 19 – 2 hours

MUSCLES, VESSELS AND NERVES OF THE LOWER LIMB

1. Muscles of the lower limb.
 - 1.1 Muscles of the pelvic girdle
 - 1.2 Muscles of the thigh

PRACTICAL SEMINAR № 20 – 2 hours

MUSCLES, VESSELS AND NERVES OF THE LOWER LIMB

1. Muscles of the lower limb.
 - 1.1 Muscles of the leg
2. Lumbo-sacral Plexus.
 - 2.1 Origin
 - 2.2 Main branches for the lower limb
3. Blood supply.

PRACTICAL SEMINAR № 21 – 2 hours

TOPOGRAPHIC ANATOMY OF THE LOWER LIMB

1. Topographic structures.
 - 1.1 Boundaries
 - 1.2 Content

PRACTICAL SEMINAR № 22 – 2 hours

REVIEW

PRACTICAL SEMINAR № 23 – 2 hours

TEST. PRACTICAL TEST

PRACTICAL SEMINAR № 24 – 2 hours

CONNECTIONS OF THE NORMAL MORPHOLOGY OF THE LOCOMOTORY SYSTEM WITH THE CLINICAL PRACTICE

**PRACTICALS –SYNOPSSES
SECOND SEMESTER**

INTERNAL ORGANS AND TOPOGRAPHIC ANATOMY OF THE HUMAN BODY

PRACTICAL SEMINAR № 1 – 2 hours

PRINCIPAL STRUCTURE OF A TUBE AND PARENCHYMATOUS ORGANS

1. Principal structure of a tube organ.
 - 1.1 Tunica interna
 - 1.2 Tunica media
 - 1.3 Tunica externa
2. Principal structure of a parenchymatous organ.
 - 2.1 Stroma
 - 2.2 Parenchyme

PRACTICAL SEMINAR № 2 – 2 hours

CARDIOVASCULAR SYSTEM

1. Macro-and microscopic anatomy of the blood vessels.

- 1.1 Arteries
 - 1.1.1 Arteries of muscular type
 - 1.1.2 Arteries of elastic type
 - 1.1.3 Arteries of mixed type
- 1.2 Veins
 - 1.2.1 Vankov`s classification according to the structure of the venous wall
- 1.3 Capillaries
 - 1.3.1 Continuous capillaries
 - 1.3.2 Fenestrated capillaries
 - 1.3.3 Non-continuous capillaries
- 2. Histological sections.
 - 2.1 Artery and vein of muscular type - staining H-E
 - 2.2 Aorta – staining orcein
 - 2.3 Capillaries - staining H-E
- 3. Electronograms.
 - 3.1 Capillary
 - 3.2 Fenestrated capillary

PRACTICAL SEMINAR № 3 – 2 hours

CARDIOVASCULAR SYSTEM. HEART

- 1. Macroscopic structure.
 - 1.1 Shape and surfaces
 - 1.2 Description of left and right atrium
 - 1.3 Description of left and right ventricle
 - 1.4 Description of the valves
- 2. Microscopic structure.
 - 2.1 Histological sections
 - 2.1.1 Heart wall – staining H-E

PRACTICAL SEMINAR № 4 – 2 hours

IMMUNE SYSTEM. BONE MARROW, THYMUS AND LYMPH NODES

- 1. Macroscopic anatomy of the bone marrow, thymus and lymph nodes.
 - 1.1 Location
 - 1.2 Parts – morphological description
- 2. Microscopic anatomy.
 - 2.1 Histological sections
 - 2.1.1 Bone marrow – staining H-E
 - 2.1.2 Thymus – staining H-E
 - 2.1.3 Lymph node – staining H-E

PRACTICAL SEMINAR № 5 – 2 hours

IMMUNE SYSTEM. SPLEEN, TONSIL

- 1. Macroscopic anatomy of the spleen and tonsils.
 - 1.1 Location
 - 1.2 Parts – morphological description
- 2. Microscopic anatomy.
 - 2.1 Histological sections
 - 2.1.1 Spleen – staining H-E
 - 2.1.2 Tonsill – staining H-E

PRACTICAL SEMINAR № 6 – 2 hours

RESPIRATORY SYSTEM. NASAL CAVITY, PARANASAL AIR SINUSES AND LARYNX

1. Macroscopic anatomy of the nasal cavity, paranasal air sinuses and larynx.
 - 1.1 Location
 - 1.2 Parts – morphological description
2. Microscopic anatomy.
 - 2.1 Histological sections
 - 2.1.1 Nasal mucosa – staining H-E

PRACTICAL SEMINAR № 7 – 2 hours

RESPIRATORY SYSTEM. TRACHEA, BRONCHI AND LUNGS

1. Macroscopic anatomy of the trachea, bronchi and lungs.
 - 1.1 Location
 - 1.2 Parts – morphological description

PRACTICAL SEMINAR № 8 – 2 hours

RESPIRATORY SYSTEM. TRACHEA, BRONCHI AND LUNGS

1. Microscopic anatomy.
 - 1.1 Histological sections
 - 1.1.1 Trachea – staining H-E
 - 1.1.2 Lungs – staining H-E
 2. Electronograms.
 - 2.1 Alveolocyte II type
 - 2.2 Blood-air barrier

PRACTICAL SEMINAR № 9 – 2 hours

ENDOCRINE SYSTEM. HYPOPHYSIS, THYROID GLAND, ADRENAL GLAND

1. Macroscopic anatomy of the hypophysis, thyroid gland and adrenal glands.
 - 1.1 Location
 - 1.2 Parts – morphological description
2. Microscopic anatomy.
 - 2.1 Histological sections
 - 2.1.1 Hypophysis – staining H-E
 - 2.1.2 Thyroid gland – staining H-E
 - 2.1.3 Adrenal gland – staining H-E
 3. Electronograms.
 - 3.1 Cells of adenohypophysis
 - 3.2 Thyroid gland follicle

PRACTICAL SEMINAR № 10 – 2 hours

TEST. PRACTICAL TEST

PRACTICAL SEMINAR № 11 – 2 hours

DIGESTIVE SYSTEM. ORAL CAVITY. TONGUE

1. Oral cavity. Compartments. Palate, lips, cheeks. Tongue.
 - 1.1 Location
 - 1.2 Parts – morphological description
2. Microscopic anatomy.

- 2.1 Histological sections
 - 2.1.1. Lip - staining H-E
 - 2.1.2. Uvula – staining H-E
 - 2.1.3. Tongue – staining H-E
 - papilla filiformis
 - papilla circumvalata

PRACTICAL SEMINAR № 12 – 2 hours

DIGESTIVE SYSTEM. ORAL CAVITY. SALIVARY GLANDS. TOOTH

- 1. Macroscopic anatomy of the salivary glands and tooth.
 - 1.1 Location
 - 1.2 Parts – morphological description
- 2. Microscopic anatomy.
- 3. Embryonic development of tooth.
 - 3.1 Histological sections
 - 3.1.1 Parotid gland - staining H-E
 - 3.1.2. Submandibular gland - staining H-E
 - 3.1.3 Sublingual gland - staining H-E
 - 3.1.4. Embryonic tooth - staining H-E
 - 3.1.5 Adult tooth
 - Decalcinated tooth - staining H-E
 - Schliff

PRACTICAL SEMINAR № 13 – 2 hours

DIGESTIVE SYSTEM. PHARYNX AND OESOPHAGUS. STOMACH

- 1. Macroscopic anatomy of the pharynx, oesophagus and stomach.
 - 1.1 Location
 - 1.2 Parts – morphological description
- 2. Microscopic anatomy.
 - 2.1 Histological sections
 - 2.1.1 oesophagus – staining H-E
 - 2.1.2 stomach – fundus - staining H-E
- 3. Electronograms.
 - 3.1 Chief cells
 - 3.2 Parietal cells

PRACTICAL SEMINAR № 14 – 2 hours

DIGESTIVE SYSTEM. SMALL AND LARGE INTESTINE. PANCREAS

- 1. Macroscopic anatomy of the small and large intestine and pancreas.
 - 1.1 Location
 - 1.2 Parts – morphological description
- 2. Microscopic anatomy.
 - 2.1 Histological sections
 - 2.1.1 Small intestine – staining H-E
 - 2.1.2 Large intestine – staining H-E
 - 2.1.3. Pancreas - staining H-E
- 3. Electronograms.
 - 3.1 Enterocyte
 - 3.2 Caliciform cell
 - 3.3 Argentafin cell

PRACTICAL SEMINAR № 15 – 2 hours

DIGESTIVE SYSTEM. LIVER, PANCREAS, INTRA- AND EXTRAHEPATIC DUCTS

1. Macroscopic anatomy of the liver and gall bladder.
 - 1.1 Location
 - 1.2 Parts – morphological description
2. Microscopic anatomy.
 - 2.1 Histological sections
 - 2.1.1 Liver – staining H-E
3. Electronograms.
 - 3.1 Hepatocyte

PRACTICAL SEMINAR № 16 – 2 hours

URINARY SYSTEM–KIDNEY, URETER AND URINARY BLADDER

1. Macroscopic anatomy of the kidney, ureter and urinary bladder.
 - 1.1 Location
 - 1.2 Parts – morphological description
2. Microscopic anatomy.
 - 2.1 Histological sections
 - 2.1.1 Kidney – staining H-E
 - 2.1.2 Ureter – staining H-E
3. Electronograms.
 - 3.1 Blood-urinary barrier

PRACTICAL SEMINAR № 17 – 2 hours

MALE REPRODUCTIVE SYSTEM

1. Macroscopic anatomy of the internal and external genitalia.
 - 1.1 Location
 - 1.2 Parts – morphological description
2. Microscopic anatomy.
 - 2.1 Histological sections
 - 2.1.1 Testis – staining H-E
 - 2.1.2 Prostate – staining H-E
3. Electronograms.
 - 3.1 Leydig cell of human testis

PRACTICAL SEMINAR № 18 – 2 hours

FEMALE REPRODUCTIVE SYSTEM

1. Macroscopic anatomy of the internal and external genitalia.
 - 1.1 Location
 - 1.2 Parts – morphological description
2. Microscopic anatomy.
 - 2.1 Histological sections
 - 2.1.1 Ovary – staining H-E
 - 2.1.2 Uterus – staining H-E

PRACTICAL SEMINAR № 19 – 2 hours

TEST. PRACTICAL TEST

PRACTICAL SEMINAR № 20 – 2 hours

TOPOGRAPHIC ANATOMY OF THE NECK

1. Cervical fascia.
 - 1.1 Superficial layer
 - 1.2 Pretracheal layer
 - 1.3 Prevertebral layer
2. Superficial elements of the neck.
 - 2.1 Platysma
 - 2.2 V. jugularis anterior
 - 2.3 V. jugularis externa
 - 2.4 Plexus cervicalis
 - 2.4.1 Origin
 - 2.4.2 Branches
3. Lateral cervical region.
 - 3.1 Boundaries
 - 3.2 Topography
 - 3.3 Content

PRACTICAL SEMINAR № 21 – 2 hours

TOPOGRAPHIC ANATOMY OF THE NECK

1. Submandibular trigone.
 - 1.1. Boundaries
 - 1.2. Topography
 - 1.3. Content
2. Suprahyoid muscles.
 - 2.1 Origin and insertion
 - 2.2 Function
 - 2.3 Innervation
3. Carotid trigone.
 - 3.1 Boundaries
 - 3.2 Topography
 - 3.3 Content
4. Sternocleidomastoid region.
 - 4.1 Boundaries
 - 4.2 Topography
 - 4.3 Content

PRACTICAL SEMINAR № 22 – 2 hours

TOPOGRAPHIC ANATOMY OF THE NECK

1. Infrahyoid region.
 - 1.1. Boundaries
 - 1.2. Topography
 - 1.3. Content
2. Root of the neck.
 - 2.1 Boundaries
 - 2.2 Spaces
 - 2.3 Content

PRACTICAL SEMINAR № 23 – 2 hours

TOPOGRAPHIC ANATOMY OF THE THORAX

1. Axillary fossa.
 - 1.1 Walls and topographic structures
 - 1.2 Blood vessels
 - 1.3 Brachial Plexus
 - 1.3.1 Origin
 - 1.3.2 Main branches for the upper limb
 - 1.4 Lymph nodes
 - 1.4.1 Groups

PRACTICAL SEMINAR № 24 – 2 hours

TOPOGRAPHIC ANATOMY OF THE THORAX. THORACIC WALL. THORACIC CAVITY

1. Thoracic wall.
2. Situs thoracis.
 - 2.1 Borders of lungs and pleura
3. Diaphragm.

PRACTICAL SEMINAR № 25 – 2 hours

TOPOGRAPHIC ANATOMY OF THE THORAX. MEDIASTINUM

1. Mediastinum
 - 1.1 Borders
 - 1.2 Compartments
2. Superior mediastinum
 - 2.1 Retrosternal group – elements
 - 2.2 Middle group – elements
 - 2.3 Prevertebral group – elements
3. Middle mediastinum
 - 3.1. Boundaries of the heart
 - 3.2. Pericardium
3. Posterior mediastinum

PRACTICAL SEMINAR № 26 – 2 hours

TOPOGRAPHIC ANATOMY OF THE ABDOMEN

1. Anterior abdominal wall.
 - 1.1 Boundaries
 - 1.2 Topography
 - 1.3 Muscles of the anterior abdominal wall
 - 1.4 Blood vessels and nerves
2. Inguinal canal.
 - 2.1 Walls - elements
 - 2.2 Superficial and deep inguinal rings
 - 2.3 Content in males and females
3. Peritoneum – morphological characteristic

PRACTICAL SEMINAR № 27 – 2 hours

TOPOGRAPHIC ANATOMY OF THE ABDOMEN

1. Abdominal cavity.

- 1.1 Boundaries
- 1.2 Peritoneal compartment
- 2. Upper region of the peritoneal cavity.
 - 2.1 Borders
 - 2.2 Peritoneal structures and spaces
 - 2.3 Organs
- 3. Celiac trunk
 - 3.1 Branches

PRACTICAL SEMINAR № 28 – 2 hours

TEST. PRACTICAL TEST

PRACTICAL SEMINAR № 29 – 2 hours

TOPOGRAPHIC ANATOMY OF THE ABDOMEN

- 1. Lower region of the peritoneal cavity.
 - 1.1 Borders
 - 1.2 Peritoneal structures and spaces
- 2. Pelvic compartment of the peritoneal cavity.
 - 2.1 Borders
 - 2.2 Peritoneal structures and spaces
 - 2.3 Organs
- 3. Superior and inferior mesenteric vessels.
 - 3.1 Branches

PRACTICAL SEMINAR № 30 – 2 hours

TOPOGRAPHIC ANATOMY OF THE ABDOMEN

- 1. Retroperitoneal compartment of the abdominal cavity.
 - 1.1 Borders
 - 1.2 Organs
 - 1.3 Blood vessels and nerves
- 2. Subperitoneal compartment of the abdominal cavity.
 - 2.1 Borders
 - 2.2 Organs
 - 2.3 Blood vessels and nerves
- 3. Perineum.

PRACTICALS –SYNOPSES

THIRD SEMESTER

CENTRAL NERVOUS SYSTEM AND REGIONAL ANATOMY OF THE HEAD

Practical № 1 – 2 hours

SKULL. REVIEW

Practical № 2 – 2 hours

SPINAL CORD

- 1. Macroscopic structure.
- 2. Spinal nerves.
 - 2.1 Groups

- 2.2 Formation
- 3. Meninges.
- 4. Blood supply

Practical № 3 – 2 hours

BRAIN STEM

- 1. Medulla oblongata.
 - 1.1 Extrenal morphology
 - 1.2 Internal morphology
 - 1.2.1 Grey matter
 - 1.2.2 White matter

Practical № 4 – 2 hours

BRAIN STEM

- 1. Pons.
 - 1.1 Extrenal morphology
 - 1.2 Internal morphology
 - 1.2.1 Grey matter
 - 1.2.2 White matter

Practical № 5 – 2 hours

MIDBRAIN. CEREBELLUM. FOURTH VENTRICLE

- 1. Midbrain.
 - 1.1 Extrenal morphology
 - 1.2 Internal morphology
 - 1.2.1 Grey matter
 - 1.2.2 White matter
- 2. Cerebellum.
 - 2.1 Cerebellar hemispheres - lobuli
 - 2.2 Vermis - lobuli
 - 2.3. Cerebellar nuclei
 - 2.4. Afferents to and efferents from the cerebellum
- 3. Fourth ventricle

Practical № 6 – 2 hours

MICROSCOPIC PRACTICAL

- 1. Spinal cord.
 - 1.1 Microscopic structure
- 2. Spinal ganglion
 - 2.1 Microscopic structure
- 3. Peripheral nerve.
 - 3.1 Microscopic structure
- 4. Microscopic preparations.
 - 4.1 Spinal cord, H-E
 - 4.2 Spinal ganglion, H-E
 - 4.3 Peripheral nerve, H-E

Practical № 7 – 2 hours

DIENCEPHALON. THIRD VENTRICLE

- 1. Thalamus.

- 1.1. Extrenal morphology
- 1.2. Internal morphology. Nuclei
- 1.3. Functions
2. Epithalamus.
 - 2.1. Morphological structures.
 - 2.2. Functions
3. Metathalamus.
 - 3.1. Parts.
 - 3.2. Functions.
4. Hypothalamus.
 - 4.1 Included structures.
 - 4.2 Nuclei – functions.
 - 4.3 Connections.
5. Subthalamus.
 - 5.1 Gray matter.
 - 5.2 Connections.
6. Third ventricle.

Practical № 8 – 2 hours

GROSS BRAIN. OLFACTORY BRAIN. LIMBIC SYSTEM

1. Cerebrum.
 - 1.1. Gyri and sulci.
 - 1.2. Localization of brain functions
2. Olfactory brain.
 - 2.1. Location
 - 2.2. Parts – morphological characteristics
3. Limbic system.
 - 3.1. Limbic cortex
 - 3.2. Limbic nuclei
 - 3.3. Limbic pathways

Practical № 9 – 2 hours

CEREBRUM

1. White matter.
 - 1.1. Association fibers
 - 1.2. Commissural fibers
 - 1.3. Projection fibers
2. Basal ganglia.

Practical № 10 – 2 hours

MICROSCOPIC PRACTICAL

1. Cerebellar cortex.
 - 1.1 Microscopic structure
2. Cerebral cortex.
 - 2.1 Microscopic structure
3. Microscopic preparations
 - 3.1 Cerebellar cortex, H-E
 - 3.2 Cerebral cortex, H-E

Practical № 11 – 2 hours

TEST

Practical № 12 – 2 hours

LATERAL VENTRICLE. MENINGES AND BLOOD SUPPLY OF BRAIN

1. Lateral ventricle.
2. Meninges of the brain.
 - 2.1. Dura matter
 - 2.2. Arachnoid matter
 - 2.3. Pia matter
2. Blood supply of the brain
 - 2.1. A. carotis interna
 - 2.1.1. Branches
 - 2.1.1.1. A. cerebri anterior
 - 2.1.1.2. A. cerebri media
 - 2.2. A. vertebralis
 - 2.3. A. basilaris
 - 2.4. Circulus arteriosus cerebri

Practical № 13 – 2 hours

**ORGAN OF VISION. ORGAN OF HEARING AND EQUILIBRIUM.
MACROSCOPIC STRUCTURE**

Organ of vision:

1. Eye ball
 - 1.1 Fibrous coat
 - 1.1.1 Sclera
 - 1.1.2 Cornea
 - 1.2 Vascular coat
 - 1.2.1 Choroid
 - 1.2.2 Ciliary body
 - 1.2.3 Iris
 - 1.3 Inner coat
 - 1.4 Inner nucleus
 - 1.4.1 Vitreous body
 - 1.4.2 Lens
 - 1.4.3 Humour aquosus
 - 1.4.4 Eye chambers
2. Auxiliary organs of the eye.
 - 2.1 Muscles of the eye
 - 2.2 Eye lid
 - 2.3 Conjunctiva
 - 2.4 Lacrimal apparatus
3. Pathway of vision

Organ of hearing and equilibrium:

1. External ear.
 - 1.1 Auricle
 - 1.2 External auditory meatus
2. Middle ear.
 - 2.1 Tympanic membrane
 - 2.2 Tympanic cavity

- 2.3 Auditory tube
- 2.4 Auditory ossicles
- 3. Internal ear.
 - 3.1 Bony labyrinth
 - 3.2 Membranous labyrinth. Organ of Corti – microscopic structure.
- 4. Pathway of hearing and equilibrium.

Practical № 14 – 2 hours

SENSORY ORGANS. MICROSCOPIC STRUCTURE

- 1. Eye.
 - 1.1 Microscopic structure
- 2. Ear.
 - 2.1 Microscopic structure.
- 3. Microscopic preparations.
 - 3.1 Retina, H-E
 - 3.2 Organ of Corti, H-E

Practical № 15 – 2 hours

CRANIAL NERVES. III, IV, VI AND XII

- 1. Nuclei in the brain stem.
- 2. Nerve characteristics.
- 3. Appearance on the brain surface.
- 4. Course in the cranial cavity.
- 5. Branches and areas of supply.

Practical № 16 – 2 hours

CRANIAL NERVES. V.

- 1. Nuclei in the brain stem.
- 2. Nerve characteristics.
- 3. Appearance on the brain surface.
- 4. Course in the cranial cavity.
- 5. Branches and areas of supply.

Practical № 17 – 2 hours

CRANIAL NERVES. VII.

- 1. Nuclei in the brain stem.
- 2. Nerve characteristics.
- 3. Appearance on the brain surface.
- 4. Course in the cranial cavity.
- 5. Branches and areas of supply.

Practical № 18 – 2 hours

CRANIAL NERVES. IX, X AND XI.

- 1. Nuclei in the brain stem.
- 2. Nerve characteristics.
- 3. Appearance on the brain surface.
- 4. Course in the cranial cavity.
- 5. Branches and areas of supply.

Practical № 19 – 2 hours

PRACTICAL AND THEORETICAL QUIZ.

Practical № 20 – 2 hours

TOPOGRAPHIC ANATOMY OF HEAD

1. Epicranial region.
 - 1.1 Borders
 - 1.2 Layers
 - 1.3 Contents
2. Temporal region.
 - 2.1 Borders
 - 2.2 Layers
 - 2.3 Contents
3. Muscles of facial expression.
 - 2.1 Groups
 - 2.2 Function
 - 2.3 Nerve supply

Practical № 21 – 2 hours

TOPOGRAPHIC ANATOMY OF HEAD

1. Superficial regions of the face.
 - 1.1 Borders
 - 1.2 Layers
 - 1.3 Contents

Practical № 22 – 2 hours

TOPOGRAPHIC ANATOMY OF HEAD

1. Parotidomasseteric region.
 - 1.1 Borders
 - 1.2 Layers
 - 1.3 Contents
- 2 Buccal region.
 - 2.1 Borders
 - 2.2 Layers
 - 2.3 Contents
3. Infratemporal region.
 - 3.1 Borders
 - 3.2 Layers
 - 3.3 Contents
4. Temporomandibular joint.
 - 4.1. Articular surfaces
 - 4.2. Articular capsule
 - 4.3. Ligaments
 - 4.4. Biomechanics
5. Muscles of mastication.
 - 5.1. Attachments
 - 5.2. Nerve supply
 - 5.3. Function

Practical № 23 – 2 hours

ORAL REGION

1. Compartments.
 - 1.1 Vestibule
 - 1.2 Oral cavity proper
2. Palate.
 - 2.1 Hard palate
 - 2.2 Soft palate
3. Floor of mouth cavity.
4. Isthmus of the fauces.
5. Tongue.
 - 5.1 Gross anatomy structure
6. Sublingual region.

Practical № 24 – 2 hours

ORAL REGION. TEETH

1. Microscopic structure
2. Tooth types
3. Occlusion
4. Types of bites
5. Blood vessels, lymphatic drainage and nerves.

Practical № 25 – 2 hours

NASAL REGION. PARANASAL SINUSES

1. External nose
2. Nasal cavity
 - 2.1 Nasal skeleton
 - 2.2 Nasal mucosa
 - 2.3 Nasal meatuses
3. Blood and nerve supply
4. Maxillary sinus.
5. Frontal sinus.
6. Ethmoid sinus.
7. Sphenoid sinus.
8. Function.
9. Blood vessels, lymphatic drainage and nerves.

Practical № 26 – 2 hours

ORBITAL REGION

1. Borders
2. Palpebral region.
3. Orbit.
 - 3.1 Skeleton of orbit
 - 3.2 Contents

Practical № 27 – 2 hours

PRACTICAL AND THEORETICAL QUIZ

Practical № 28 – 2 hours

DISCUSSION ON THE DISSECTION PREPARATIONS.

Practical № 29 – 2 hours

PARAPHARYNGEAL SPACE

1. Retropharyngeal space.
 - 1.1 Borders
 - 1.2 Contents
2. Lateropharyngeal space.
 - 2.1 Anterior compartment, contents
 - 2.2 Posterior compartment, contents

Practical № 30 – 2 hours

REVIEW ON THE TOPOGRAPHIC ANATOMY OF THE HEAD

DENTAL STUDENTS FINAL EXAM QUESTIONS

I. Locomotory system and Skull

1. Bone as an organ. Structure of mature bone: osseous (bone) tissue, compact and spongy bone tissue. Types of bones. The skeleton – definition and function. Development and growth of the bones.
2. Joints between bones. Solid joints. Synovial joints (diarthroses) - the structure of the synovial joints: basic and additional elements. The classification of the synovial joints.
3. Vertebral column. Joints of the vertebral column. The vertebral column as a whole. Biomechanics. Joints between the vertebral column and the skull. Joints between the skull bones.
4. Skeleton of the thorax. Joints of the thorax. The thorax as a whole. Biomechanics.
5. Joints of the shoulder girdle. Shoulder joint.
6. Elbow joint. Joints between the bones of the forearm.
7. Joints of the wrist and the hand - general remarks.
8. The pelvic girdle as a whole. Joints of the pelvic girdle. Hip joint. Biomechanics.
9. Knee joint. Joints between the leg bones.
10. Ankle joint. Joints of the foot - general remarks.
11. Structure of skeletal muscle: auxiliary structures, classification of muscles, biomechanics.
12. Muscles of the shoulder girdle and the upper arm. Topography of the upper limb.
13. Muscles of the forearm and the hand.
14. Muscles around the hip joint and of the femoral region.
15. Muscles of the leg and foot. Topography of the lower limb.
16. Arteries of the upper limb.
17. Arteries of the lower limb.
18. The superficial veins of the upper and lower limbs.
19. Brachial plexus. Formation, position, branches.
20. Lumbar plexus. Formation, position, branches.
21. Sacral and coccygeal plexus. Formation, position, branches.

22. Skull (cranium) - facial cranium and neurocranium (cranial skull). Calvaria (calva, vault).
23. Internal surface of the base of the skull - elements, passing through the openings and canals.
24. External surface of the base of the skull - elements, passing through the openings and canals.
25. Orbit. Walls, communications, and elements passing through them.
26. Skeleton of the nasal cavity. Walls, communications and elements passing through them.
27. Lateral aspect of the skull: temporal, infratemporal, and pterygopalatine fossae. Walls, boundaries, communications and elements passing through them.

II. Splanchnology

28. The circulatory system. Definition. Constituting elements. Major (or systematic) circulation. Lesser (or pulmonary) circulation. Fetal circulation.
29. Heart - position, size, shape and external features. Surface projection on the chest wall. Cardiac atriums and chambers. The valves of the heart.
30. Cardiac wall (endocardium, myocardium, epicardium) - structure. Fibrous skeleton. Coordination of cardiac activities - the conducting system. Cardiac nerve supply. Blood supply of the heart. Pericardium.
31. Arteries - definition, position in the body, structure of arterial wall. Types of arteries.
32. The aorta – position and division in parts. The ascending aorta, the arch of the aorta, the thoracic aorta and the abdominal aorta – position, branches.
33. Veins - definition, position in the body, structure of venous wall. Types of veins. Venous valves.
34. The superior and inferior vena cava. Portal vein- position and main tributaries. Anastomoses between the two caval veins. Anastomoses between the portal and systematic circulation.
35. Microcirculatory blood system. Arterioles, capillaries- types of capillaries. Venules. Arteriovenous anastomoses.
36. The lymphoid system. Definition and constituting elements. The thoracic duct and the right lymphatic duct - formation and tributaries. Movements of the lymph. Lymph capillaries and lymph nodes - morphological characteristic.
37. The immune system- definition, classification and principle structure. The thymus and the spleen- position, morphological characteristic, blood supply and nerve supply.
38. Digestive system- the constituting organs. Principle structure.
39. Pharynx - shape, position, description. Parts of the pharynx. Structure. Blood and nerve supply.
40. Esophagus - position, parts, description. Structure of the esophag wall. Blood supply and nerves.
41. Stomach - position, description. Peritoneal relation of the stomach. Morphological characteristic. Blood supply and nerves.
42. Small intestine. Duodenum, jejunum and ileum - position, parts, description, peritoneal relation. Structure of the wall. Blood supply and nerves.
43. Large intestine – anatomical parts, position. Peritoneal relation. The colon and rectum. Morphological characteristic. Blood supply and nerves.
44. Pancreas - position, description, and peritoneal relation. Morphological characteristic. Blood supply and nerves.

45. Liver –size, position, description. Peritoneal connection of the liver. Morphological characteristic. Blood supply and nerves of the liver. Intra-and extrahepatic biliary ducts. The gall bladder.
46. Abdomen. Anterior abdominal wall. Inguinal canal.
47. Abdominal cavity. Peritoneum. Peritoneal cavity- upper region.
48. Peritoneal cavity- lower region.
49. Peritoneal cavity- pelvic region.
50. Retroperitoneal space- organs, vessels and nerves.
51. Respiratory system. The major organs of the respiratory system -principle structure. Larynx - position,description. Laryngeal cartilages. The cavity of the larynx.Vocal folds. Laryngeal muscles. Blood supply and nerve supply.
52. Trachea and the bronchial tree - position, morphological characteristic. Blood supply and nerves.
53. Lungs - position, description. Lobes, segments, lobules. Morphological characteristic. Blood supply and nerves.
54. Thoracic cavity. Pleura. Pleural cavity.
55. Superior mediastinum.
56. Anterior and posterior mediastinum.
57. Thoracic diaphragm-position, description, blood and nerve supply.
58. The axillary fossa. Shape, walls, and content.
59. Urinary system. Components. Kidneys- position, description. Morphological characteristic. Blood supply and nerves.
60. Excretory structures of the kidneys - minor and major calyces, pelvis. The ureter and urinary bladder. Position, description. Peritoneal relations. Structure of the wall. Blood and nerve supply.
61. Endocrine system- organs, classification. General characteristics. The pituitary gland, the thyroid and suprarenal glands – position, morphological characteristic. Blood and nerve supply.
62. Male reproductive system. Organs. Testis. Epididymis.Accessory ducts- ductus deferens, ejaculatory duct. Position, coats and morphological characteristic. Blood and nerve supply.
63. Male reproductive system. Seminal vesicles. Prostate gland. Penis. Male urethra. Position, morphological characteristic. Blood and nerve supply.
64. Female reproductive system. Organs. Ovary- position, morphological characteristic. Peritoneal relations. Blood and nerve supply.
65. Female reproductive system. Uterus and uterine tubes. Position and peritoneal relations. Morphological characteristic Ovarian-menstrual cycle. Blood and nerve supply.
66. Female reproductive system. Vagina and external genitalia. Blood and nerve supply.
67. Subperitoneal space of the pelvis. Perineum.
68. Muscles of the neck.
69. Cervical fascia.
70. External carotid artery - position and branches.
71. Submandibular triangle.
72. Sternocleidomastoid region and the carotid triangle.
73. Cervical plexus- formation and branches.
74. Cervical lateral region.
75. Infrahyoid region.
76. The root of the neck.

III. Nervous System, Sensory Organs and Regional Anatomy of the Head

77. Spinal cord - position, shape, size, segments. Roots of spinal nerves and spinal ganglion. Grey matter - arrangement and structure.
78. Spinal cord. The white matter - ascending (sensory) and descending (motor) tracts. Intersegmental tracts.
79. Medulla oblongata - position, size, the external view (aspect), the internal structure.
80. Pons - position, parts, external view, internal structure. The fourth ventricle.
81. Midbrain - position, parts. External view and internal structure.
82. Cerebellum - position, shape, size, parts. Grey and white matter. Cerebellar peduncles.
83. Diencephalon - thalamus, epithalamus, metathalamus. Position, parts, external view, internal structure.
84. Diencephalon - hypothalamus, subthalamic area. Position, external view, internal structure. The third ventricle.
85. Cerebrum (forebrain) - position, shape, lobes. Exterior of the cerebral hemispheres - sulci and gyri. Important functional areas of the cerebral cortex.
86. Cerebral cortex - structure. Variations in the structure.
87. White matter of the hemispheres. Internal capsule.
88. Basal nuclei of the cerebrum. The lateral ventricle. Cerebrospinal fluid - formation and circulation, and drainage.
89. Olfactory apparatus (rhinencephalon). Olfactory pathway. Limbic system.
90. The meninges of the spinal cord and the brain. Blood supply of the brain.
91. Efferent pathways from the cerebral cortex (the pyramid system).
92. Efferent pathways from the cerebral cortex. The extrapyramidal system.
93. Ascending pathways for general sensation and proprioception from the body.
94. Ascending pathways for general sensation and proprioception from the head.
95. Spinal nerves - number, groups, formation. Functional analysis of the spinal nerves.
96. Autonomic nervous system - definition, criteria for division into sympathetic and parasympathetic divisions. Reflex arch. Analysis of its neurons. Sympathetic division - sympathetic trunk.
97. Parasympathetic division of the autonomic nervous system. Cranial and sacral parasympathetic outflow - nuclei, ganglia, nerves.
98. External and middle ear.
99. Internal ear. The bony and membranous labyrinth - cochlear part. Organ of Corti. Pathway of hearing.
100. Internal ear. The bony and membranous labyrinth - vestibular part. Organ of equilibrium. Pathway of equilibrium.
101. Organ of vision - general remarks. Outer (fibrous) and middle (vascular) coat - parts, description.
102. Retina. Visual pathway.
103. Refracting media of the eye - cornea, lens, vitreous body, aqueous humour.
104. Facial artery - position, branches and anastomoses.
105. Maxillary artery - position and division in parts, branches.
106. Veins of head and neck.
107. Lymph nodes of head and neck.
108. Cranial nerves - number, names, groups. General principles of formation. Nuclei (motor, sensory, parasympathetic), ganglia.
109. Third, fourth, and sixth cranial nerves - nuclei, position, characteristics. Course of the nerve, branches, area of distribution.

110. Trigeminal nerve. Nuclei - position, characteristic. The ganglion of the nerve. The first branch of the nerve - course, branches, area of distribution.
111. Trigeminal nerve. Nuclei - position, characteristic. The ganglion of the nerve. The second branch of the nerve - course, branches, area of distribution.
112. Trigeminal nerve. Nuclei - position, characteristic. The ganglion of the nerve. The third branch of the nerve - course, branches, area of distribution.
113. Facial nerve. Nuclei - position, characteristic. The course, branches, area of distribution.
114. Glossopharyngeal nerve. Nuclei - position, characteristic. The course, branches, area of distribution.
115. Vagus nerve. Nuclei - position, characteristic. The course, branches, area of distribution.
116. Accessory nerve, hypoglossal nerve. Nuclei - position, characteristic. The course of the nerves, branches, area of distribution.
117. Oral region. Oral cavity – oral vestibule, lips, cheeks. Structure. Blood and nerve supply.
118. Oral cavity. Hard and soft palate. Structure. Blood and nerve supply. Palatine tonsils.
119. Tooth – general description and structure. Dental cuticle, enamel and cementum – structure and physical properties. Types of cementum. Cementoenamel junction.
120. Tooth – general description and structure. Dentine - structure and physical properties. Dental pulp. Periodontium.
121. Gingiva (Gums) – structure. Gingival fibers. Parodontium. Blood and nerve supply.
122. Blood and nerve supply of the teeth. Lymph nodes collecting lymph from gums, upper and lower teeth.
123. Dentition – deciduous and permanent. Tooth eruption. Stages of dentition. Characteristics of human dentition. Types of occlusion.
124. Stages of tooth development (odontogenesis). Peculiarities of deciduous teeth.
125. Tongue – position, parts and surfaces. Morphological characteristics – lingual papillae. Muscles of the tongue. Blood and nerve supply.
126. Salivary glands. Classification, position, structure. Blood and nerve supply.
127. Parapharyngeal Space – Lateral pharyngeal and retropharyngeal spaces.
128. Nasal region. Nasal cavity – parts, description and nasal mucosa. Blood and nerve supply.
129. Paranasal sinuses.
130. Muscles of facial expression.
131. Muscles of mastication. Temporomandibular joint.
132. Frontoparietooccipital region.
133. Temporal region.
134. Infratemporal region.
135. Orbital region.
136. Infraorbital, zygomatic, mental and buccal region.
137. Parotidomasseteric region.
138. Sublingual region.

Literature:

Textbooks:

MCQs in anatomy, a self-testing supplement to human anatomy – All System (For Dental Students), S.S.Novakov, Y.A. Koeva, A.V. Fusova, F.A. Popova, ed S.T. Sivkov, Med Publ House “Lax Book”, Plovdiv, 2014

A Practicum – Organ Histology, P. Atanassova, I. Koeva, e. Petrova et al.
Romanes GJ. Cunningham’s manual of practical anatomy. Head and Neck and Brain. Oxford University Press. New York, 1996
Patrick W. Tank. Grant's Dissector (Tank, Grant's Dissector). 14th Edition. Lippincott Williams & Wilkins, 2008.
Chaurasia BD. Human anatomy. Regional and applied. Third edition. CBS Publishers & distributors. New Delhi, India, 1998.
Central Nervous System. Vankov’s Anatomy by M. Vankova, 2012.

1. Junqueira, Carneiro. Histology, 13th edition, Springer, 2013
2. Stevens, Lowe, Human Histology, 2nd edition, Chapman and Hall, 1997
3. Sobotta Anatomy Textbook: English Edition with Latin Nomenclature. Jens Waschke, Tobias M. Böckers, Friederich Paulsen eds., 1st edition, Urban & Fischer, 2019.
<https://www.elsevier.com/books/sobotta-anatomy-textbook/paulsen/978-0-7020-6760-0>
4. Gray's Anatomy for Students, Elsevier; 4th edition, 2019
5. Chaurasia BD. Human anatomy. Regional and applied. 3rd edition. CBS Publishers & distributors. New Delhi, India, 1998.
6. Romanes GJ. Cunningham’s manual of practical anatomy. Thorax and abdomen. Oxford University Press. New York, 1996
7. Atanassova P, Koeva I, Petrova E, Penkova N, Trichkova V. A Practicum of Organ Histology with CD – Interactive atlas of anatomy and histology of internal organs, edition of the Department of anatomy, histology and embryology, Medical University of Plovdiv
8. S. Novakov, Y. Koeva, A. Fusova, F. Popova. MCQs in anatomy, a self-testing supplement to human anatomy - All Systems (For Dental Students), Med Publ House “Lax Book”, Plovdiv, 2014.
9. A Manual to joints and topographic anatomy of the limbs with a dissection guide, Antoaneta Fasova, Elena Bozhikova, Ferihan Popova, Zdravka Harizanova, Slavi Delchev, Stefan Sivkov, Stoyan Novakov, editor S. Sivkov, Lax Book, Plovdiv, 1st edition, 202310.
10. MCQs in anatomy, a self-testing supplement to human anatomy – All System (For Dental Students), S.S. Novakov, Y.A. Koeva, A.V. Fusova, F.A. Popova, ed S.T. Sivkov, Med Publ House “Lax Book”, Plovdiv, 2014
11. Cunningham's Manual of Practical Anatomy: Volume I: Upper and Lower Limbs. Oxford University Press, 15th edition, 1996
12. Gray's Anatomy for Students, Churchill Livingstone; 2nd edition, 2009

Atlases:

1. Sobotta. Atlas of Human anatomy, 15th edition, Urban & Fisher, 2011
2. Delchev S., Novakov S., Ivanova R. Photographic ATLAS of human anatomy, ed. S. Sivkov, Lax book, Plovdiv, 2019.
3. Krstic, Human Microscopic Anatomy, Springer, 1997
4. Drake R, Wayne Vogl A., Mitchell A, Gray's Atlas of Anatomy, 2nd edition, 2015, Churchill Livingstone
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