

# **EUROPEAN MEDICAL UNIVERSITY**

## **SYLLABUS OF THE EDUCATIONAL DISCIPLINE "HUMAN ANATOMY"**

|                                    |                                                               |
|------------------------------------|---------------------------------------------------------------|
| <b>Cycle of Higher Education:</b>  | <b>second cycle of higher education<br/>(Master's degree)</b> |
| <b>Field of Study:</b>             | <b>22 «Healthcare»</b>                                        |
| <b>Specialty:</b>                  | <b>222 «Medicine»</b>                                         |
| <b>Educational qualification:</b>  | <b>Master of Medicine</b>                                     |
| <b>Professional qualification:</b> | <b>doctor</b>                                                 |

## **1. Name, Code of the discipline and number of credits**

Syllabus of the educational discipline "Human anatomy"

Cycle of Higher Education: second cycle of higher education (Master's degree)

Field of Study: 22 «Healthcare»

Specialty: 222 «Medicine» (1, 2 courses)

Educational qualification: Master of Medicine

Professional qualification: doctor

Semester: 1, 2, 3

Number of credits ECTS (number of hours): 14 credits ECTS (420 hours).

Distribution by types of trainings and hours of study – Lectures 36 hours, Practical lessons – 220 hours, Independent work – 164 hours.

## **2. Time and place of educational discipline**

Semester: 1, 2, 3

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## **3. Prerequisites and Postrequisites of educational discipline**

**Prerequisites:** Human anatomy as an educational discipline is based on students' study of medical biology, histology, cytology and embryology, biophysics, and the Latin language and is integrated with these disciplines. Lays the foundations for students to study normal physiology, propaedeutics of clinical disciplines and the formation of skills to apply knowledge of human anatomy in the process of further study of all clinical disciplines and in future professional activities.

**Postrequisites:** The study discipline "Human Anatomy" lays the foundations for students to study normal and pathological physiology, pathological anatomy, clinical anatomy and operative surgery, deontology, propaedeutics of clinical disciplines and the formation of skills to apply knowledge of human anatomy in the process of further study of all clinical disciplines and in future professional activities.

## **4. Characteristic of the educational discipline**

### **4.1. Purpose and definition of the educational discipline:**

"Human anatomy" consists in ensuring that students acquire the greatest number of practical skills in dissection, independent study of the structure, mutual location of numerous organs and parts of the human body.

"Human anatomy": the science of the structure of the human body, all its organs and systems. It studies the human body in relation to its functions, development and environment. Anatomy is a part of biology - the science of life and the laws of its development. Biology, in turn, is divided into morphology - the science that studies the form and structure of the human body, and physiology - the science of its functions. A different approach to the study of the structure of the human body and the methods used at the same time led to the separation of a number of sciences in morphology, including anatomy. For a long time, anatomy remained a descriptive science because it could answer only one question: how is the body arranged? - because they used a single method of research - the method of dissection or preparation (hence its name: anatomia - I dissect).

Modern anatomy seeks not only to describe the structure of one or another part of the human body, but also to explain why it is so arranged, to reveal the laws of its development taking into account the environment, age, sex and individual characteristics of the human body, which allows a purposeful approach to their management and change.

#### 4.2. The task of studying the discipline

- analyze information about the structure of the human body, the systems that make it up, organs and tissues;
- determine the topographical and anatomical relationships of human organs and systems;
- to interpret the patterns of prenatal and early postnatal development of human organs, variants of organ variability, developmental defects;
- interpret gender, age and individual characteristics of the structure of the human body;
- predict the interdependence and unity of the structures and functions of human organs, their variability under the influence of environmental factors;
- determine the influence of social conditions and work on the development and structure of the human body;
- demonstrate mastery of moral and ethical principles of attitude towards a living person and his body as an object of anatomical and clinical research.

#### 4.3. Competences and learning outcomes

##### Competencies.

*General competencies (GC):*

|       |                                                                                               |
|-------|-----------------------------------------------------------------------------------------------|
| GC 1  | Ability to think abstractly, analyses and synthesize.                                         |
| GC 2  | Ability to learn and master modern knowledge.                                                 |
| GC 3  | Ability to apply knowledge in practical situations.                                           |
| GC 4  | Knowledge and understanding of the subject area and understanding of professional activities. |
| GC 6  | Ability to make justified decisions.                                                          |
| GC 10 | Ability to use information and communication technologies.                                    |
| GC 11 | Ability to search, process and analyses information from various sources.                     |
| GC 12 | Certainty and perseverance in relation to the tasks set and responsibilities assumed.         |

*Special (professional, subject) competencies (SC):*

|       |                                                                                                                            |
|-------|----------------------------------------------------------------------------------------------------------------------------|
| SC 23 | Ability to develop and implement scientific and applied projects in the healthcare sector.                                 |
| SC 24 | Compliance with ethical principles when working with patients and laboratory animals.                                      |
| SC 25 | Compliance with professional and academic integrity, being responsible for reliability of the obtained scientific results. |

*Program learning outcomes (PLO):*

|        |                                                                                                                                                                                                                                                                                             |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PLO 1  | Have a thorough knowledge of the structure of professional activity. Be able to carry out professional activities that require updating and integrating knowledge. Be responsible for professional development, the ability to further professional training with a high level of autonomy. |
| PLO 2  | Understanding and knowledge of fundamental and clinical biomedical sciences at a level sufficient to solve professional problems in the field of healthcare.                                                                                                                                |
| PLO 3  | Specialized conceptual knowledge that includes scientific achievements in the field of healthcare and is the basis for conducting research, critical understanding of problems in the field of Medicine and related interdisciplinary problems.                                             |
| PLO 21 | Searching for the necessary information in professional literature and databases of other sources, analyzing, evaluating and applying this information.                                                                                                                                     |

#### 4.4 Content of the discipline

##### Lectures plan (L)

| No.                         | TOPICS                                                                                                                                                        | hours     |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| <b>1 course, 1 semester</b> |                                                                                                                                                               |           |
| 1                           | Introduction to anatomy. Initial stages of ontogeny. Embryonic leaf derivatives. Development and derivatives of finch arcs.                                   | 2         |
| 2                           | Introduction to osteology. Stages of bone development. Skull development in ontogeny. Anomalies of skull development.                                         | 2         |
| 3                           | General syndesmology. Anatomical and biomechanical classification of bone junction.                                                                           | 2         |
| 4                           | Introduction to myology. Development of the muscular system. Developmental                                                                                    | 2         |
| 5                           | Special myology. Topography of the neck, torso and limbs.                                                                                                     | 2         |
| 6                           | Central nervous system: spinal cord. Peripheral nervous system: morpho-functional characteristic of spinal nerves.                                            | 2         |
| 7                           | Introduction to angiology. Vascular system and its classification. Large and small circulation. Features of blood supply to the limbs (arterial anastomoses). | 2         |
| 8                           | Morpho-functional characteristics of the venous system. Venous anastomoses.                                                                                   | 2         |
| 9                           | Morpho-functional characteristic of the lymphatic system.                                                                                                     | 2         |
| <b>total in 1 semester</b>  |                                                                                                                                                               | <b>18</b> |
| <b>1 course, 2 semester</b> |                                                                                                                                                               |           |
| 10.                         | Introduction to planchology. Facial development. Facial development abnormalities. Primary gut development and derivatives.                                   | 2         |
| 11.                         | Anatomical characteristic of the peritoneum.                                                                                                                  | 2         |
| 12.                         | Development and examination of the respiratory system.                                                                                                        | 2         |
| 13.                         | Development and anatomy of the urinary system. Developmental disorders. Structure of                                                                          | 2         |
| 14.                         | Development and anatomy of the sexual system. Malformations.                                                                                                  | 2         |
| 15.                         | General anatomy of the vegetative the nervous system.                                                                                                         | 2         |
| 16.                         | Development and anatomy of the heart. Heart malformations.                                                                                                    | 2         |
| 17.                         | Descending aorta: departments, branches, topography. Characteristics of blood supply to the trunk and internal organs.                                        | 2         |

|                            |                                                                                                                      |           |
|----------------------------|----------------------------------------------------------------------------------------------------------------------|-----------|
| 18.                        | Morpho-functional characteristic of the lymphatic system. Examination of hematopoietic organs and immune protection. | 2         |
| <b>total in 2 semester</b> |                                                                                                                      | <b>18</b> |
| <b>total:</b>              |                                                                                                                      | <b>36</b> |

### Practical lessons plan (PL)

| No.                                                                                | TOPICS                                                                                                                           | hours |
|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|-------|
| <b>first year</b>                                                                  |                                                                                                                                  |       |
| <b>1 semester</b>                                                                  |                                                                                                                                  |       |
| <b>SECTION 1. "Musculoskeletal system. Innervation and blood supply to limbs."</b> |                                                                                                                                  |       |
| <b>Content section №1. Osteology and craniology.</b>                               |                                                                                                                                  |       |
| 1                                                                                  | Anatomical techniques. Terminology. Axes and planes. General signs of vertebrae.                                                 | 2     |
| 2                                                                                  | Cervical, thoracic, lumbar vertebrae. Sacrum, coccyx. Curves of the spine, its functions.                                        | 2     |
| 3                                                                                  | Humerus. Bones of the forearm and bones (wrist, finger skeleton).                                                                | 2     |
| 4                                                                                  | Bones of the girdle of the lower limb (buttock, ilium and pubic bone). Astragalus. Patella, tibia bones.                         | 2     |
| 5                                                                                  | Bones of the foot (phalanges, metatarsals, skeleton of the fingers). X-ray anatomy of limb bones.                                | 2     |
| 6                                                                                  | Examination of the skull. Frontal, parietal and occipital bones.                                                                 | 2     |
| 7                                                                                  | Lattice and sphenoid bones.                                                                                                      | 2     |
| 8                                                                                  | Temporal bone, its cavities and canals.                                                                                          | 2     |
| 9                                                                                  | Upper and lower jaws.                                                                                                            | 2     |
| 10                                                                                 | Skull as a whole. Structures of the outer and inner base of the skull. Cavities of the skull (orbit, nasal cavity). Hard palate. | 2     |
| 11                                                                                 | Pits of the skull (temporal, subtemporal, pterygopalatine).                                                                      | 2     |
| 12                                                                                 | Test control and practical skills in osteology and craniology. Control of students' independent work outside the classroom.      | 2     |
| <b>Content section №2 Arthrology and myology.</b>                                  |                                                                                                                                  |       |
| 13                                                                                 | Connection of skull bones. Temporomandibular joint. Connection of vertebrae. Connection of the spine with the skull.             | 2     |
| 14                                                                                 | Connection of the bones of the girdle of the upper limb. Shoulder joint.                                                         | 2     |
| 15                                                                                 | Elbow joint. Connection of the bones of the forearm and hand. Connection of the bones of the hand.                               | 2     |
| 16                                                                                 | Connection of the bones of the girdle of the lower limb. Hip joint.                                                              | 2     |
| 17                                                                                 | Knee joint. Connection of the bones of the lower leg and foot.                                                                   | 2     |

|                                                                                                       |                                                                                                                                          |           |
|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 18                                                                                                    | Neck muscles. Fasciae and topography of the neck.                                                                                        | 2         |
| 19                                                                                                    | Abdominal muscles and fascia. Inguinal canal.                                                                                            | 2         |
| 20                                                                                                    | Muscles and fascia of the chest                                                                                                          | 2         |
| 21                                                                                                    | Muscles and fascia of the shoulder girdle and shoulder.                                                                                  | 2         |
| 22                                                                                                    | Muscles of the forearm. Muscles of the hand.                                                                                             | 2         |
| 23                                                                                                    | Pelvic and thigh muscles and fascia.                                                                                                     | 2         |
| 24                                                                                                    | Muscles and fascia of the lower leg and foot.                                                                                            | 2         |
| 25                                                                                                    | Test control and practical skills in arthrology and myology. Control of students' independent work outside the classroom.                | 2         |
| <b>Content section №3. Innervation and blood supply of limbs.</b>                                     |                                                                                                                                          |           |
| 26                                                                                                    | Structure and topography of the spinal cord. Membranes of the spinal cord. Cervical plexus.                                              | 2         |
| 27                                                                                                    | Short branches of the brachial plexus.                                                                                                   | 2         |
| 28                                                                                                    | Long branches of the brachial plexus.                                                                                                    | 2         |
| 29                                                                                                    | Lumbar-sacral plexus                                                                                                                     | 2         |
| 30                                                                                                    | Aorta: topography, departments, regional vessels. Subclavian, inguinal                                                                   | 2         |
| 31                                                                                                    | Brachial, ulnar and radial arteries.                                                                                                     | 2         |
| 32                                                                                                    | Common iliac artery. Femoral artery.                                                                                                     | 2         |
| 33                                                                                                    | Veins of the extremities.                                                                                                                | 2         |
| 34                                                                                                    | System of upper and lower vena cava.                                                                                                     | 2         |
| 35                                                                                                    | Test control and practical skills on innervation and blood supply of limbs. Control of students' independent work outside the classroom. | 2         |
| 36                                                                                                    | Practical skills from the material of Chapter 1 on blood supply and innervation of limbs.                                                | 2         |
| 37                                                                                                    | Final control for 1 semester.                                                                                                            | 2         |
| <b>Total hours for 1 semester</b>                                                                     |                                                                                                                                          | <b>74</b> |
| <b>2 semester</b>                                                                                     |                                                                                                                                          |           |
| <b>SECTION 2. "Splanchnology. Innervation and blood supply of internal organs and body cavities".</b> |                                                                                                                                          |           |
| <b>Content section № 4. Digestive and respiratory systems.</b>                                        |                                                                                                                                          |           |
| 38                                                                                                    | Oral cavity, tongue, palate, salivary glands, pharynx, tonsils.                                                                          | 3         |
| 39                                                                                                    | Anatomy of teeth.                                                                                                                        | 3         |
| 40                                                                                                    | Structure and topography of the pharynx, esophagus, stomach.                                                                             | 3         |
| 41                                                                                                    | Structure and topography of the small and large intestine.                                                                               | 3         |
| 42                                                                                                    | Digestive glands: structure, topography and functions of the liver, pancreas. Formation of the common bile duct. Spleen.                 | 3         |

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|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| 43                                                                                             | Peritoneum, topography, derivatives, relation to organs.                                                                                               | 3 |
| 44                                                                                             | Cavities and pockets of the peritoneum.                                                                                                                | 3 |
| 45                                                                                             | External nose. Nasal cavity: walls, sinuses, nasal passages and connections. Pharynx.                                                                  | 3 |
| 46                                                                                             | Larynx: topography, cartilages. Connection of cartilages of the larynx, classification and structure of the muscles of the larynx.                     | 3 |
| 47                                                                                             | Trachea. Structure and topography of the bronchial tree.                                                                                               | 3 |
| 48                                                                                             | Structure and topography of lungs: lobes, segments. Concept of acinus.                                                                                 | 3 |
| 49                                                                                             | Anatomy and topography of the pleura. Mediastinum.                                                                                                     | 3 |
| 50                                                                                             | Test control and practical skills in the anatomy of the digestive and respiratory system. Control of students' independent work outside the classroom. | 3 |
| <b>Content section № 5. Urogenital and endocrine systems.</b>                                  |                                                                                                                                                        |   |
| 51                                                                                             | Structure, topography and function of kidneys. Nephron.                                                                                                | 3 |
| 52                                                                                             | Structure, topography and function of ureters, urinary bladder, ureters.                                                                               | 3 |
| 53                                                                                             | Structure, topography and function of male genital organs.                                                                                             | 3 |
| 54                                                                                             | Structure, topography and function of internal female genital organs.                                                                                  | 3 |
| 55                                                                                             | Perineum: anatomy, topography.                                                                                                                         | 3 |
| 56                                                                                             | Endocrine system: classification, development, topography.                                                                                             | 3 |
| 57                                                                                             | Test control and practical skills in the anatomy of the genitourinary and endocrine system.                                                            | 3 |
| <b>Content section № 6. Innervation and blood supply of internal organs and body cavities.</b> |                                                                                                                                                        |   |
| 58                                                                                             | Overview of the autonomic nervous system. Parasympathetic department of the autonomic nervous system. X pair of cranial nerves: vagus nerve.           | 3 |
| 59                                                                                             | The sympathetic division of the autonomic nervous system. Cerebral trunk. Node branches. Sympathetic plexuses                                          | 3 |
| 60                                                                                             | Circles of blood circulation. Heart anatomy: structure of chambers and walls.                                                                          | 3 |
| 61                                                                                             | Conductive system of the heart. Heart vessels and nerves. Topography of the heart. Pericardium.                                                        | 3 |
| 62                                                                                             | Aorta: topography, departments. Subclavian, inguinal arteries and their branches.                                                                      | 3 |
| 63                                                                                             | Thoracic aorta. Branches and objects of blood supply. Superior vena cava system.                                                                       | 3 |
| 64                                                                                             | Parietal branches of the abdominal aorta. Paired visceral branches of the abdominal aorta.                                                             | 3 |
| 65                                                                                             | Unpaired visceral branches of the abdominal aorta. Anastomoses between visceral arteries.                                                              | 3 |
| 66                                                                                             | Portal and inferior vena cava system. Venous anastomoses (cava-caval and porto-caval anastomoses).                                                     | 3 |

|                                                                                                           |                                                                                                                                                              |            |
|-----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 67                                                                                                        | Private lymphology. Regional lymph nodes. Anatomy of hematopoietic organs and immune protection.                                                             | 3          |
| 68                                                                                                        | Innervation and blood supply of organs and walls of the chest cavity.                                                                                        | 3          |
| 69                                                                                                        | Innervation and blood supply of organs and walls of the abdominal cavity and pelvis.                                                                         | 3          |
| 70                                                                                                        | Innervation and blood supply of pelvic organs and walls.                                                                                                     | 3          |
| 71                                                                                                        | Test control and practical skills on innervation and blood supply of internal organs and body cavities.                                                      | 3          |
| 72                                                                                                        | Practical skills from the material Section 2. Splanchnology. Innervation and blood supply of internal organs and body cavities.                              | 3          |
| 73                                                                                                        | Final control for the 2nd semester (1 year).                                                                                                                 | 3          |
| <b>Total hours for 2 semester</b>                                                                         |                                                                                                                                                              | <b>108</b> |
| <b>2 semester</b>                                                                                         |                                                                                                                                                              | <b>182</b> |
| <b>SECOND YEAR</b>                                                                                        |                                                                                                                                                              |            |
| <b>3 SEMESTER</b>                                                                                         |                                                                                                                                                              |            |
| <b>CHAPTER 3. NERVOUS SYSTEM AND SENSE ORGANS.</b>                                                        |                                                                                                                                                              |            |
| <b>HEAD AND NECK BLOOD SUPPLY.</b>                                                                        |                                                                                                                                                              |            |
| <b>Content section №7. central nervous system</b>                                                         |                                                                                                                                                              |            |
| 74                                                                                                        | Examination of the brain. Lateral and medial surfaces. The basis of the brain. Medulla oblongata: external and internal structure. Anatomy of the hindbrain. | 2          |
| 75                                                                                                        | The relief of a rhomboid fossa. IV ventricle. Projection of cranial nerve nuclei on the rhomboid fossa.                                                      | 2          |
| 76                                                                                                        | Structure of the diencephalon. III ventricle. The middle brain.                                                                                              | 2          |
| 77                                                                                                        | Terminal brain: basal ganglia and white matter of the hemispheres. Lateral ventricles.                                                                       | 2          |
| 78                                                                                                        | Test control and practical skills of the central nervous system. Control of students' independent work outside the classroom.                                | 2          |
| <b>Content section №8. Test control and practical skills in sense organs and cranial nerves</b>           |                                                                                                                                                              |            |
| 79                                                                                                        | Senses: skin, organ of smell and taste. Organ of vision: structure of the eyeball. Pupil reflex. Conductive paths of the visual analyzer.                    | 2          |
| 80                                                                                                        | The structure of the parenchymal organ. Conductive paths of hearing and balance.                                                                             | 2          |
| 81                                                                                                        | Peripheral part of the nervous system. Topography of the skull. Cranial nerves: III, IV, VI, XI, XII pairs.                                                  | 2          |
| 82                                                                                                        | V pair of cranial nerves: trigeminal nerve. Innervation of the scalp.                                                                                        | 2          |
| 83                                                                                                        | Facial (VII) and glossopharyngeal (IX) cranial nerves.                                                                                                       | 2          |
| 84                                                                                                        | Vagus nerve (X pair). Parasympathetic nervous system.                                                                                                        | 2          |
| 85                                                                                                        | Test control and practical skills in sense organs and cranial nerves. Control of students' independent work outside the classroom.                           | 2          |
| <b>Content section №9. Test control and practical skills in the blood supply of head and neck organs.</b> |                                                                                                                                                              |            |
| 86                                                                                                        | Aortic arch. Common carotid and subclavian arteries.                                                                                                         | 2          |

|                                          |                                                                                                                                                                                       |            |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 87                                       | External carotid artery. Innervation and blood supply of the walls and organs of the nasal and oral cavity. Innervation and blood supply of organs and cavities of the head and neck. | 2          |
| 88                                       | Internal carotid artery. Innervation and blood supply of organs and walls of the cranial cavity. Anastomoses between the internal carotid and subclavian arteries.                    | 2          |
| 89                                       | Veins of the head and neck. Anatomy of lymphatic vessels and nodes of the head and                                                                                                    | 2          |
| 90                                       | Test control and practical skills in the blood supply of head and neck organs. Control of independent extracurricular work of students.                                               | 2          |
| 91                                       | Practical skills from the material Chapter 3. Nervous system and sense organs. Blood supply to the head and neck.                                                                     | 2          |
| 92                                       | Final control.                                                                                                                                                                        | 2          |
| <b>Total hours for 2 year 3 semester</b> |                                                                                                                                                                                       | <b>38</b>  |
| <b>Total hours for 2 year:</b>           |                                                                                                                                                                                       | <b>38</b>  |
| <b>Total:</b>                            |                                                                                                                                                                                       | <b>220</b> |

### Independent work topics (IW)

#### List of topics for self-study

#### 1 year 1 semester

#### CHAPTER 1.

#### Locomotor apparatus. Innervation and blood supply of limbs.

| No.                                  | TOPICS                                                                                                         | hours |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------|-------|
| <b>THEME: "SKELETON OF THE BODY"</b> |                                                                                                                |       |
| 1                                    | Structure, classification, development of bones. Age and typical features of bones.                            | 3     |
| 2                                    | Ribs, brisket. The concept of the chest, its size and shape. Bones of the girdle of the upper limb.            | 2     |
| 3                                    | Departments of the foot, anatomy of the bones of the foot. X-ray anatomy of limb bones.                        | 3     |
| <b>THEME: "SKELETON SKULL"</b>       |                                                                                                                |       |
| 4                                    | Examination of the skull. Frontal, parietal, occipital bones.                                                  | 3     |
| 5                                    | Small facial bones. Hyoid bone.                                                                                | 3     |
| 6                                    | Connection of cavities and pits of the skull.                                                                  | 2     |
| 7                                    | Development of skull bones. Age and typical features of the skull, its X-ray anatomy.                          | 3     |
| <b>TOPIC: "CONNECTING BONES"</b>     |                                                                                                                |       |
| 8                                    | Connection of bones, their classification. Signs of joints and types of movements in joints.                   | 3     |
| 9                                    | Connection of ribs with vertebrae and sternum. Chest. Connection of the bones of the girdle of the upper limb. | 2     |

|                                                           |                                                                                                                                                      |           |
|-----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 10                                                        | Connection of the bones of the pelvis. Dimensions and sexual characteristics of the pelvis. Age features and X-ray anatomy of trunk and limb joints. | 3         |
| <b>TOPIC: "MYOLOGY"</b>                                   |                                                                                                                                                      |           |
| 11                                                        | General myology. Muscles and fascia of the head.                                                                                                     | 3         |
| 12                                                        | Muscles and fascia of the back, chest. Diaphragm.                                                                                                    | 3         |
| 13                                                        | Topography of the upper and lower extremities.                                                                                                       | 3         |
| 14                                                        | Muscle development. Auxiliary apparatus of muscles. Features of the synovial sheaths of the muscles of the limbs.                                    | 3         |
| <b>TOPIC: "SPINAL NERVES"</b>                             |                                                                                                                                                      |           |
| 15                                                        | Development of the spinal cord. Formation of the spinal nerve. Posterior branches of the spinal nerves.                                              | 2         |
| 16                                                        | Innervation of the muscles of the upper limb.                                                                                                        | 3         |
| 17                                                        | Innervation of muscles of the lower limb.                                                                                                            | 3         |
| <b>THEME: "INNERVATION AND BLOOD SUPPLY OF THE LIMBS"</b> |                                                                                                                                                      |           |
| 18                                                        | Heart anatomy: chambers, valves, wall structure. Small and large circle of blood circulation.                                                        | 2         |
| 19                                                        | Anastomoses of vessels of the upper limb.                                                                                                            | 3         |
| 20                                                        | Anastomoses of vessels of the lower limb.                                                                                                            | 2         |
| 21                                                        | Topography of the main vessels of the limbs.                                                                                                         | 2         |
| 22                                                        | Anatomy of venous anastomoses of limbs.                                                                                                              | 2         |
| <b>Total hours for 1 year 1 semester</b>                  |                                                                                                                                                      | <b>58</b> |

### List of topics for self-study

#### 1 year 2 semester

#### SECTION 2.

#### Splanchnology. Innervation and blood supply of internal organs and body cavities.

| No.                                | TOPICS                                                                                                          | hours |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------|-------|
| <b>TOPIC: "DIGESTIVE SYSTEM"</b>   |                                                                                                                 |       |
| 1                                  | Introduction to splanchnology, concept of topography of organs, characteristics of cavities.                    | 6     |
| 2                                  | Development of teeth, age-related features of teeth. Typical features of the teeth of the upper and lower jaw.  | 6     |
| 3                                  | Development of organs of the abdominal cavity and peritoneum (derivatives of the ventral and dorsal mesentery). | 6     |
| <b>TOPIC: "RESPIRATORY SYSTEM"</b> |                                                                                                                 |       |

|                                          |                                                                                                                         |           |
|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-----------|
| 4                                        | Examination of respiratory organs. External nose, nasal cavity, paranasal sinuses.                                      | 6         |
| 5                                        | Development, anatomy, topography of organs of the respiratory system.                                                   | 6         |
| <b>THEME: "URINARY SYSTEM"</b>           |                                                                                                                         |           |
| 6                                        | Examination of the organs of the urinary system. Development of the urinary system.                                     | 6         |
| 7                                        | Structure, topography and function of external female genital organs. Development of organs of the reproductive system. | 5         |
| 8                                        | Gender features of the topography of the pelvic organs.                                                                 | 5         |
| 9                                        | Development, anatomy, topography and function of gonads.                                                                | 5         |
| 10                                       | Development, anatomy and anomalies of male genital ducts.                                                               | 5         |
| 11                                       | Classification, anatomy, function of endocrine glands.                                                                  | 5         |
| 12                                       | Classification, anatomy of organs of the immune system.                                                                 | 5         |
| <b>THEME: "VASCULAR SYSTEM"</b>          |                                                                                                                         |           |
| 13                                       | Development of the heart and blood supply system.                                                                       | 6         |
| 14                                       | Porto-caval and cava-caval anastomoses.                                                                                 | 6         |
| 15                                       | Lymph nodes of the chest, abdomen and pelvis.                                                                           | 6         |
| <b>Total hours for 1 year 2 semester</b> |                                                                                                                         | <b>84</b> |

### **List of topics for self-study**

**2nd year, 3rd semester**

### **SECTION 3.**

#### **Nervous system and sense organs. Innervation and blood supply of the head and neck**

| <b>No.</b>                             | <b>TOPICS</b>                                                                                                                              | <b>hours</b> |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <b>TOPIC: "CENTRAL NERVOUS SYSTEM"</b> |                                                                                                                                            |              |
| 1                                      | The middle brain. Topography and projection of brainstem nuclei.                                                                           | 1.5          |
| 2                                      | Anatomy of the terminal brain: relief of the hemispheres of the cerebrum. Olfactory brain. The structure of the cortex of the hemispheres. | 1.5          |
| 3                                      | Meninges and intermembrane spaces. Circulation of cerebrospinal fluid.                                                                     | 2            |
| 4                                      | Projection pathways of the brain and spinal cord (afferent and efferent).                                                                  | 2            |
| <b>TOPIC: "SENSE ORGANS"</b>           |                                                                                                                                            |              |
| 5                                      | Skin, its derivatives. Mammary gland. Conductive pathways of skin sensitivity.                                                             | 2            |
| 6                                      | Conductive pathways of the organ of taste and smell.                                                                                       | 2            |
| 7                                      | Auxiliary apparatus of the organ of vision. Development of the parietal and convolutional organ and the organ of vision.                   | 2            |
| <b>THEME: "CRANIAL NERVES"</b>         |                                                                                                                                            |              |

|                                              |                                                                                                                     |     |
|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------|-----|
| 8                                            | Overview of the peripheral nervous system. General characteristics of cranial nerves.                               | 1.5 |
| 9                                            | Parasympathetic and sympathetic innervation of the head and neck organs.                                            | 1.5 |
| 10                                           | Sympathetic innervation of the organs of the head and neck.                                                         | 1,5 |
| <b>THEME: "VESSELS OF THE HEAD AND NECK"</b> |                                                                                                                     |     |
| 11                                           | Arteries of the eye socket, nasal cavity and mouth. Anastomoses between the external and internal carotid arteries. | 1,5 |
| 12                                           | Arteries and veins of the cranial cavity. Anastomoses between the internal carotid and subclavian arteries          | 1.5 |
| 13                                           | Formation of internal, external and anterior jugular veins.                                                         | 1.5 |
| <b>Total hours for 2 year 3 semester</b>     |                                                                                                                     | 22  |
| <b>total hours of discipline</b>             |                                                                                                                     | 164 |

#### 4.5 Credit structure of “BIOLOGICAL AND BIOORGANIC CHEMISTRY” discipline.

| Discipline          | Credit<br>ECTS | Number of hours |     |          |          |             |
|---------------------|----------------|-----------------|-----|----------|----------|-------------|
|                     |                | In total        | Aud | Lectures | Seminary | independent |
| In total            |                |                 |     |          |          |             |
| «Human anatomy»     | 14             | 420             | 256 | 36       | 220      | 164         |
| for the first year  |                |                 |     |          |          |             |
| «Human anatomy»     | 12             | 360             | 218 | 36       | 182      | 142         |
| 1th semester        |                |                 |     |          |          |             |
| «Human anatomy»     | 5              | 150             | 92  | 18       | 74       | 58          |
| 2th semester        |                |                 |     |          |          |             |
| «Human anatomy»     | 7              | 210             | 126 | 18       | 108      | 84          |
| for the second year |                |                 |     |          |          |             |
| «Human anatomy»     | 2              | 60              | 38  | -        | 38       | 22          |
| 3th semester        |                |                 |     |          |          |             |
| «Human anatomy»     | 2              | 60              | 38  | -        | 38       | 22          |

The topics of the lecture course in the 1st year reveal the problematic issues of the relevant sections of "Human anatomy".

#### Practical skills:

- |                 |                            |                            |
|-----------------|----------------------------|----------------------------|
| - Vertebra      | - Vertebra arc             | - Lower vertebral clipping |
| - Vertebra body | - Upper vertebral clipping | - Vertebral opening        |

|                                            |                                                      |                              |
|--------------------------------------------|------------------------------------------------------|------------------------------|
| - Spinous process                          | - Dorsal surface                                     | -- Frontal hump              |
| - Transverse process                       | -- Back ice holes                                    | -- The brow arc              |
| - Upper joint process                      | -- Median ice ridge                                  | -- Overreach                 |
| - Lower joint process                      | -- Inside ice ridge                                  | -- Upper arrow sinus furrow  |
| Cervical vertebrae                         | -- Lateral ice ridge                                 | -- Frontal ridge             |
| - Atlanta's front arc                      | - Ice channel                                        | -- Blind hole                |
| - Tooth fossa                              | - Ice meltdown                                       | - Supra-dimpled edge         |
| - Spinal artery sulcus                     | Rib                                                  | -- Supernatant hole          |
| - Atlanta's back arc                       | - Rib head                                           | -- Zygomatic process         |
| - Atlanta side mass                        | -- Joint surface of rib head                         | - Eye pit                    |
| - Axial vertebra tooth                     | -- Ridge of rib head                                 | --The hole of the tear gland |
| - Sleeping tubercle (VI cervical vertebra) | - Neck ribs                                          | - Nose                       |
| - Transverse hole                          | - Rib body                                           | -- Nose bone                 |
| - Front mound                              | - Rib hump                                           | - Lattice clipping           |
| - Rear mound                               | - Edge angle                                         | - Frontal sinus              |
| - Spinal nerve furrow                      | - Furrow ribs                                        | Thyme bone                   |
| Chest vertebrae                            | - Anterior ladder muscle hump (on first rib)         | The occipital edge           |
| - Upper ribbed pit                         | - Trough of the subclavian artery (on the first rib) | - Scaly edge                 |
| - Lower climbing pit                       | - Subclavian vein groove (on first rib)              | - Arrow edge                 |
| - Vertical fossa of transverse process     | - Anterior serrated muscle hilary                    | - Frontal edge               |
| Lumbar vertebrae                           | Breast                                               | - Frontal angle              |
| - Additional process                       | - Handle breast                                      | - Occipital angle            |
| - Papillary process                        | -- Jugular clipping (breast)                         | - Wedge-shaped angle         |
| Ice bone                                   | -- Key clipping                                      | - Nipple-shaped angle        |
| - Base of the ice bone                     | - Body of breast                                     | - Thyme hole                 |
| - Ear-shaped surface of the sacral bone    | -- Rib clippings                                     | - Upper arrow sinus furrow   |
| - The top of the icy bone                  | - Sword-shaped process                               | - Thyme hump                 |
| - Acidity of the icy bone                  | - Breast angle                                       | - Upper temporal line        |
| - Pelvic surface                           | Frontal bone                                         | Occipital bone               |
| -- Transverse lines                        | - Frontal scales                                     | - Big hole                   |
| -- Front ice holes                         |                                                      | - The main part              |
|                                            |                                                      | -- Pharyngeal hump           |
|                                            |                                                      | -- Slope                     |

|                                       |                                            |                                                      |
|---------------------------------------|--------------------------------------------|------------------------------------------------------|
| -Side part                            | -- Subcroneal surface of the large wing    | --- Dilution of the canal of the great rocky nerve   |
| -- Occipital growth                   | -- Maxillary surface of the great wing     | ---The furrow of the great rocky nerve               |
| -- Outgrowth Canal                    | -- Spectroscopic surface of the large wing | --- Dilution of the channel of the small rocky nerve |
| -- Growing fossa                      | - Upper spot gap                           | ---The furrow of the small rocky nerve               |
| -- Jugular clipping                   | - Visual canal                             | -- Back surface of the rocky part                    |
| -- Jugular process                    | - Round hole                               | --- Inner auditory hole                              |
| --- Sublingual nerve channel          | - Oval hole                                | --- Internal auditory stroke                         |
| - Occipital scales                    | - Spinous hole                             | --- Subductive fossa                                 |
| -- External occipital protrusion      | - Wing-shaped process                      | -- Lower surface of rocky part                       |
| -- Upper cage line                    | -- Side plate                              | --- Jugular fossa                                    |
| -- Lower cage line                    | -- The Inside Plate                        | --- Shiloid process                                  |
| -- Inner occipital protrusion         | -- Wing-shaped channel                     | --- Nipple-shaped hole                               |
| -- Cruciform elevation                | -- Wing-shaped fossa                       | --- Rocky dimple                                     |
| -- Transverse sinus furrow            | -- Wing-shaped clipping                    | --- Outer opening of the sleeping canal              |
| -- Sigma sinus furrow                 | Temporal bone                              | --- Inner opening of the sleeping canal              |
| -- Transverse sinus furrow            | - Rocky part of temporal bone              | -- Papillary process (temporal bone)                 |
| Wedge-shaped bone                     | -- The upper edge of the rocky part        | --- Sigma sinus groove                               |
| - Wedge bone body                     | --- Upper rocky sinus furrow               | --- Nipple clipping                                  |
| -- Turkish saddle                     | -- The back edge of the rocky part         | --- Nipple hole                                      |
| -- Pituitary fossa                    | --- Lower rocky sinus furrow               | -- Drum part                                         |
| --Perch saddle                        | -- Front edge of the rocky part            | -- The scaly part                                    |
| -- Back of the saddle                 | --- Lower rocky sinus furrow               | --- Zygomatic process                                |
| -- Sleepy furrow                      | -- Front surface of the rocky part         | --- Articular tubercle                               |
| -- Wedge-shaped sinus                 | --- Roof of drum cavity                    | --- Mandibular fossa                                 |
| - Small wing of wedge bone            | ---- Triple pressing                       | -- External auditory hole                            |
| - Large wing of wedge bone            |                                            | -- External auditory stroke                          |
| --Mose surface of large wing          |                                            | Lattice bone                                         |
| -- Temporal surface of the great wing |                                            |                                                      |

- Hole plate
- Hole holes
- Perpendicular plate
- Lattice maze
- Spectroscopic plate
- Upper nasal shell
- Middle nasal shell
- Upper jaw
- Upper jaw body
- Intramuscular surface
- Plantar groove of the maxilla
- Submandibular maxillary canal
- Submandibular edge of maxillary body
- The front surface of the upper jaw
- Plantar hole of the upper jaw
- Nose clipping
- Subcroneal surface of the maxilla
- Upper jaw hump
- Cell holes
- Nasal surface of the upper jaw
- Tear groove
- Upper Jaw Product
- Maxillary frontal process
- Maxillary zygomatic process
- Palatine process of the upper jaw
- Cell process
- Dental cells

- Lower jaw
- Lower jaw body
- Cell part
- Mandibular cell arch
- Tooth cells
- Base of mandible
- Chin mandibular protrusion
- Chin tubercle
- Chin hole
- Bicerebral mandibular fossa
- Mandibular-hyoid mandibular line
- Hyoid fossa
- Bottom pit
- Lower jaw branch
- Mandible angle
- Chewy hilarity
- Wing-shaped hilarity
- Lower jaw clipping
- Mandibular sprout
- Lower jaw head
- Lower jaw neck
- Wing-shaped mandibular fossa
- The coronal process of the mandible
- Lower jaw opening
- Mandible Canal
- Lower nasal shell
- Tear bone
- Nasal bone
- Lemish
- Celandine

- Perpendicular plate
- Wedge clipping
- Pyramidal process
- Horizontal plate
- Zygomatic bone
- Side surface
- Temporal surface
- Spot surface
- Frontal process
- Temporal process
- Zygomatic-ophthalmic hole
- Zygomatic-facial hole
- Zygomatic-temporal hole
- Hyoid bone
- Body of the hyoid bone
- Small horn
- Big Horn
- Skull vaults
- Temporal fossa
- Temporal fossa walls
- Cheekbone arc
- Subcroneal fossa
- Walls of subcutaneous fossa
- Wing-palatine fossa
- Wing-fossa walls
- Anterior cranial fossa
- Middle cranial fossa
- Posterior cranial fossa
- Upper sinus groove (skull)
- Transverse sinus groove (skull)
- Sigma sinus groove (skull)

|                                  |                        |                                    |
|----------------------------------|------------------------|------------------------------------|
| Outer base of skull              | -Supra fossa           | -- Humerus block                   |
| - Torn hole (skull)              | --Contiguous fossa     | -- Elbow fossa                     |
| - Jugular hole (skull)           | - Outside edge         | -- Crown pit                       |
| - Temporal carotid canal (skull) | - Side edge            | -- Lateral supergrowth             |
| - Musculoskeletal canal (skull)  | - Upper edge           | -- Radial fossa                    |
| Bone palate                      | -- Beak-like process   | -- Upstream supergrowth            |
| - Big Celestial Canal            | -- Blade clipping      | -- Ulnar sulcus                    |
| - Small palate holes             | - Top corner           | Radial bone                        |
| - Cutting channel                | - Lower angle          | - Radial bone head                 |
| Ocular fossa                     | - Side angle           | -- Articular circumference         |
| - Intramuscular input            | --- Carbon trough      | -- Joint fossa                     |
| - Suprafoil edge (skull)         | -- Supercarb hump      | - Cervix of the radius             |
| - Submandibular edge (skull)     | -- Subcarb hump        | - The body of the radius           |
| - Walls of the eye pit           | -- Scapula neck        | -- Radius hilarity                 |
| -- Front lattice hole            | Clavicle               | -- Radial bone body surfaces       |
| -- Rear lattice hole             | - Chest end            | --The edge of the radial bone body |
| -- Lower fossa gap               | - Collarbone body      | - Styloid process of radial bone   |
| Bone nasal cavity                | - Superfluid end       | - Ulnar clipping                   |
| - Walls of the bony nasal cavity | Humerus                | - Wrist joint surface              |
| - Hoanee                         | - Humerus head         | Elbow bone                         |
| - Upper nose stroke              | - Anatomical neck      | - Ulnar process                    |
| - Middle nose stroke             | - Big hump             | - Block clipping                   |
| - Lower nose stroke              | - Small hump           | - Crown process                    |
| - Common nose stroke             | - Large hump crest     | -- Hilarity of the ulna            |
| Blade                            | - Crest of small hump  | -- Radial bone clipping            |
| - Rebar surface                  | - Interracial groove   | - Ulnar body                       |
| -- Armpit                        | - Surgical neck        | -- Ulnar body surfaces             |
| - Back surface                   | - Humerus body -       | -- Elbow bone body edge            |
| -- Blade rest                    | -- Body surfaces       | - Ulnar head                       |
| --Superfluid process (acromion)  | -- Deltaic hilly       | -- Styloid process of ulna         |
|                                  | -- Radial nerve sulcus | -- Articular circumference         |
|                                  | - Growth of humerus    |                                    |
|                                  | -- Humerus head        |                                    |

|                                            |                                     |                               |
|--------------------------------------------|-------------------------------------|-------------------------------|
| Bones of the brush                         | ----The lower anterior clubbed bone | - Lower pelvic hole           |
| - Wrist bones                              |                                     | Femur                         |
| -- Boat-like bone                          | --- Lower posterior club bone       | - Femur head                  |
| -- Crescent bone                           | --- Upper posterior club bone       | - Femur neck                  |
| -- Trihedral bone                          | --- Outer lip                       | - Small swivel of the femur   |
| -- Pea-shaped bone                         | --- Intermediate line               | - Large swivel of the femur   |
| -- Bone-trapezoid                          | --- Inner lip                       | - Inter-swivel ridge          |
| -- Trapezoidal bone                        | -- Club fossa                       | - Inter-swivel line           |
| -- Head bone                               | -- Gluteal surface                  | - Femur body                  |
| --- Hooked bone                            | -- Ear-shaped surface               | -- Body surfaces              |
| - Metacarpals                              | -- Club hilarity                    | -- Rough femur line           |
| -- Base of metacarpal bone                 | Gluteal bone                        | --- Lateral lip               |
| -- Metacarpal body                         | - Body of the sciatic bone          | --- Outer lip                 |
| -- Metacarpal head                         | - Gluteal branch                    | --- Comb line                 |
| - Hand finger bones (phalanges of fingers) | - Sydney hump                       | --- Glacial hilarity          |
| -- Proximal phalanx                        | - Sydney Island                     | --- Popliteal surface         |
| -- Middle phalanx                          | - Small buttock tenderloin          | - External growth             |
| -- The ultimate phalanx                    | Pubic bone                          | -- Femoral overgrowth         |
| Ball bone                                  | - Pubic bone body                   | - Lateral growth              |
| - Ball pit                                 | - Upper pubic bone branch           | -- Femoral overgrowth         |
| -- Ball pit                                | --Pubic hump                        | -- Knee-high surface          |
| -- Crescent surface of the ball pit        | -- Club-pubic enhancement           | -- Intertidal fossa           |
| -- Ball pit clipping                       | --Simphysical surface               | Kneecap                       |
| - Plug hole                                | - Lower pubic bone branch           | Tibia                         |
| The Big Ice Cut                            | - Bulky furrow                      | - Lateral growth              |
| Clubbone                                   | Pelvis                              | -- Fibular joint surface      |
| - The body of the clubbone                 | - Pelvic cavity                     | - External growth             |
| - Glomerular bone wing                     | - Big pelvis                        | - Upper joint surface         |
| --Club comb                                | - Small pelvis                      | -- Front intergerm field      |
| --- Upper anterior club bone               | - Boundary line                     | -- Rear intergerm field       |
|                                            | - Pubic arc                         | -- Inter-growth enhancement   |
|                                            | - Upper pelvic hole                 | - Body of tibia               |
|                                            |                                     | -- Body surfaces of the tibia |

|                            |                                           |                                      |
|----------------------------|-------------------------------------------|--------------------------------------|
| -- Tibia hilarity          | -- Crown suture of the skull              | - Chest-key joint                    |
| -- Edges of the tibia      | -- Skull arrow stitch                     | -- Interclavicular ligament          |
| - Inside the bone          | -- Lambd-like skull stitch                | -- Rebor-key ligament                |
| - Fiberglass clipping      | - Thyme of the skull                      | -- Anterior chest-key ligament       |
| - Lower joint surface      | - Synchondrosis of the skull              | -- Posterior chest-key ligament      |
| Fibula                     | - Temporomandibular joint                 | - Shoulder joint                     |
| - Fibula head              | - Atlanta occipital joint                 | -- Joint cavity lip (shoulder joint) |
| - Fibula body              | Connection of the spinal column           | -- Beak-shoulder ligament            |
| - Side bone                | - Intervertebral disk                     | - Elbow joint                        |
| Bones of the foot          | -- Intervertebral disk fibrous ring       | -- Shoulder-elbow joint              |
| - Braid bones              | -- Intervertebral disk dragline core      | -- Shoulder-radial joint             |
| -- Superpatellar bone      | - Anterior longitudinal ligament (spine)  | -- Proximal radial-ulnar joint       |
| --- Head of the supranum   | - Posterior longitudinal ligament (spine) | -- Bypass elbow ligament             |
| --- Supra neck             | - Interosseous ligament (spine)           | -- Bypass radial ligament            |
| --- Superheel bone body    | - Yellow ligament (spine)                 | - Interosseous forearm septum        |
| -- Heel bone               | - Supra ligament (spine)                  | - Distal radial-ulnar joint          |
| --- Heel hump              | - Transverse ligament (spine)             | - Radius-wrist joint                 |
| --- Superspecific support  | - Arcuate joint                           | -- Back radial-wrist ligament        |
| --- Boat-like bone         | - Mid-Atlantic-axial joint                | -- Palm radius-wrist ligament        |
| -- Inside wedge bone       | - Lateral atlanto-axial joint             | -- Elbow bypass wrist ligament       |
| -- Intermediate wedge bone | - Ice-cupric joint                        | -- Radial bypass wrist ligament      |
| -- Lateral wedge bone      | Chest connection                          | - Interthasticular joints            |
| -- Cuboid bone             | - Cerebral synchondrosis                  | - Mid-carpal joint                   |
| - Metatarsal bones         | - Sternocostal joint                      | - Pea-like bone joint                |
| -- Base of metatarsal      | - Rib head joint                          | - Wrist Canal                        |
| -- Metatarsal body         | - Lateral joint                           | - Wrist-metacarpal joints            |
| -- Metatarsal head         | Connection of the upper limb              | - Interdigital joints                |
| - Finger Bones (Phalanges) | - Superplex-key joint                     |                                      |
| -- Proximal phalanx        |                                           |                                      |
| -- Middle phalanx          |                                           |                                      |
| -- The ultimate phalanx    |                                           |                                      |
| Connecting the skull       |                                           |                                      |
| - Skull stitches           |                                           |                                      |

- Metacarpal-phalangeal joints

- Interphalangeal joints of the hand

-- Workarounds

Lower limb connection

- Occipital intersection

- Backwater channel

- Big buttock hole

- Small buttock hole

- Pubic symphysis

- Ice-club joint

- Hip joint

-- Neck lip

-- Femoral head ligament

-- Tuberos-femoral ligament

-- Hip ligament

-- Pubic femoral ligament

- Knee joint

--The undisputed knee ligament

-- Side meniscus

-- The Front Meniscus

-- Anterior crossed ligament

-- Posterior crossed ligament

-- Bypass tibial ligament

-- Bypass fibula

-- Knee ligament

- Interosseous tibia

- Large-fibula joint

- Supra-tibia joint

-- Front-end workaround

-- Lateral bypass ligament

- Heel joint

- Supra-heel-boat joint

- Transverse joint braided

-- Forked ligament

- Heel-cuboid joint

- Wedge-boat joint

- Interglacial joints

- Long sole ligament

- Shoulder and shoulder joints

- Interplastic joints

- Interosseous metatarsal gaps

- Metatarsal-phalangeal joints

- Foot interphalangeal joints

Back muscles

- Trapezoid muscle

- Widest back muscle

- Large rhomboid muscle

- Scapular lifting muscle

- Lower posterior serrated muscle

- Upper posterior serrated muscle

- Muscle - straightener of the spine

Chest muscles

- Big pectoral muscle

- Small pectoral muscle

- Connective muscle

- Anterior serrated muscle

- Internal intercostal muscles

- External intercostal muscles

Aperture

- Lumbar diaphragm

-- Aortic dissection

-- Esophageal dissection

- Chest part of the diaphragm

- Rebar part of the diaphragm

- Tendon center

-- Hollow vein hole

-- Chest-rib triangle

-- Lumbar-rib triangle

Abdominal muscles

- Direct abdominal muscle

-- Tendon membranes

- Vagina rectus abdominal muscle

- External oblique abdominal muscle

--The wine ligament

- Internal oblique abdominal muscle

- Transverse abdominal muscle

- White line

--Umbilical ring

- Armpit Canal

- Walls of the smelling channel

- Superficial fragrant ring

-- Inside Leg

-- Side leg

- Square lower back muscle

Facial muscles

- Supercharged muscle
- Frontal abdomen
- Occipital abdomen
- Aponeurotic helmet (supracranial aponeurosis)
- Ocular muscle
- Large zygomatic muscle
- Upper lip lift muscle
- Muscle-lifting angle of mouth
- Cheek muscle
- Muscle-lowering mouth angle
- Muscle-lowering of the lower lip
- Colic Mouth Muscle

#### Masticatory muscles

- Temporal muscle
- Chewing muscle
- Lateral wing muscle
- Forward winged muscle

#### Neck muscles

- Subcutaneous neck muscle
- Thorny-key-nipple-like muscle
- Bicerbral muscle
- Front abdomen
- Back abdomen
- Shilo-hyoid muscle
- Mandibular muscle
- Grudninno- hyoid muscle
- Paddle-hyoid muscle
- Chest-thyroid muscle
- Shield-hyoid muscle

- Front ladder muscle
- Middle ladder muscle
- Rear ladder muscle
- Front neck area
- Submandibular triangle
- Sleepy Triangle
- Paddle-tracheal triangle
- Thorny-collarbone-nipple-shaped area
- Side neck area
- Lop-key triangle
- Rear neck area

#### Upper extremity muscles

- Deltoid muscle
- Superstition muscle
- Subcutaneous muscle
- Small round muscle
- Large round muscle
- Underbearing muscle
- Double-headed shoulder muscle
- Long head of the biceps of the shoulder
- Short head of the biceps of the shoulder
- Beak-shoulder muscle
- Shoulder muscle
- Three-headed shoulder muscle
- Long head of the three-headed shoulder muscle
- Anterior head of the three-headed shoulder muscle
- Lateral head of the three-headed shoulder muscle

- Wrist flexor radial muscle
- Round muscle-attracting
- Wrist elbow muscle flexor
- Superficial finger flexor muscle
- Long palm muscle
- Thumb flexor long muscle
- Deep muscle-flexor fingers
- Square muscle-attracting
- Shoulder-radial muscle
- Long radial muscle-extensor wrist
- Short radial muscle-extensor wrist
- Finger extension muscle
- Pinky muscle extensor
- Elbow muscle-extensor wrist
- Muscle-distractor
- Long visiting thumb muscle
- Short thumb extensor muscle
- Thumb extensor long muscle
- Short visiting thumb muscle
- Short thumb flexor muscle
- Contrasting thumb muscle
- Thumb adductor
- Visiting pinky muscle
- Short pinky flexor muscle
- Contrasting little finger muscle

- Red-like muscles
- Armpit
- Armpit walls
- Four-sided hole
- Three-sided hole
- Lateral double-headed furrow
- Inside double-headed furrow
- Elbow fossa
- Extender muscle holder
- Flexor muscle holder
- Palmar aponeurosis
- Wrist Canal
- Lower extremity muscles
- Lumbar muscle
- Big lumbar muscle
- Tuberous muscle
- Large gluteal muscle
- Sciatic muscle
- Gluteal minor muscle
- Pear-shaped muscle
- Internal ulcerative muscle
- Upper twin muscle
- Lower twin muscle
- Square hip muscle
- External ulcerative muscle
- Kravetsky muscle
- Quadriceps thigh muscle
- Straight hip muscle
- Lateral broad muscle
- Forward broad muscle
- Intermediate broad muscle
- Comb muscle
- Thin muscle
- Long adductor muscle
- Short adductor muscle
- Great adductor muscle
- Biceps thigh muscle
- Long head
- Short head
- Semiperitinous muscle
- Semi-suicidal muscle
- Long muscle-extensor toes
- Anterior tibia muscle
- Thumb (foot) extensor long muscle
- Fibula long muscle
- Short fibula muscle
- Three-headed calf muscle
- Calf muscle
- Campaloid muscle
- Long muscle-flexor fingers (feet)
- Posterior tibia muscle
- Thumb flexor long muscle (feet)
- Short muscle-extensor fingers
- Short thumb flexor muscle
- Square sole muscle
- Short finger flexor muscle
- Red-like muscles
- Visiting thumb muscle
- Short muscle flexor thumb
- Thumb adductor
- Visiting pinky muscle
- Short pinky flexor muscle
- Ultra propulsive hole
- Sub-propellant hole
- Muscle Bay
- Vascular Gulf
- Wide fascia
- Club-ankle strand
- Subcutaneous dissection
- Sickle Edge
- Hole fascia
- Thigh Canal
- Hip ring
- Drive channel
- Driving channel walls
- Drive meltdown
- Hamstring
- Upper extensor muscle holder
- Lower extensor muscle holder -
- Flexor muscle holder
- Upper fibula muscle holder
- Lower fibular muscle holder
- Plantar aponeurosis
- Mouth
- Oral cavity
- Proverb of the mouth
- Upper lip
- Lower lip

|                                        |                                  |                                        |
|----------------------------------------|----------------------------------|----------------------------------------|
| -- Angle of mouth                      | -- Ghost gland                   | - Stomach body                         |
| -- Cheek                               | --- Ghost Strait                 | - Collar part of the stomach           |
| - Mouth cavity proper                  | - Ziv                            | -- Goaltending Cave                    |
| - Palate                               | -- Celestial Tongue              | -- Goaltending Channel                 |
| -- Solid palate                        | -- Celestial Throat Bracket      | - Collar muscle-lock                   |
| -- Soft palate                         | -- Celestial almond              | - Collar hole                          |
| - Clear                                | -- Amygdala fossa                | - Gastric mucosa                       |
| - Teeth                                | Throat                           | -- Gastric folds                       |
| -- Tooth crown                         | - Nose of pharynx                | -- Gastric fields                      |
| -- Tooth neck                          | --Clave throat                   | Small intestine                        |
| -- Tooth root                          | -- Pharyngeal tonsils            | - Serous lining of the small intestine |
| -- Crown surfaces                      | -- Pharyngeal hole auditory tube | - Small intestine mucosa               |
| - Incisors                             | -- Pipe roll                     | -- Colic folds of the small intestine  |
| - Fangs                                | - Mouth part of the pharynx      | - Duodenum                             |
| - Small corner teeth                   | - Laryngeal part of the throat   | -- Upper duodenum                      |
| - Large corner teeth                   | - Pharyngeal cavity              | -- Descending duodenal                 |
| - Tongue                               | - Pharyngeal mucosa              | --- Large duodenal papilla             |
| -- Body of the tongue                  | - Pharyngeal muscles             | --- Small duodenal papilla             |
| -- Root of the tongue                  | Esophagus                        | -- Horizontal part of duodenum         |
| -- Back of the tongue                  | - Neck part                      | -- The ascending part of the duodenum  |
| -- The Edge of the Tongue              | - Chest part                     | - Duodenal-hollow bend                 |
| -- Top of the tongue                   | - Abdominal part                 | - Empty intestine                      |
| -- Tongue mucosa                       | - Mucosa                         | - Glomerulus                           |
| --- Mushroom papillae of the tongue    | Stomach                          | Colon                                  |
| --- Guttural papillae of the tongue    | - Anterior stomach wall          | - Colon mucosa                         |
| --- Leaf-shaped papillae of the tongue | - Back wall of stomach           | -- Crescent folds of the colon         |
| -- Blind tongue hole                   | - Large stomach curvature        | - Protrusions of the colon             |
| -- Lingual tonsils                     | - Small stomach curvature        | - Bands of the colon                   |
| - Mouth glands                         | - Cardiac hole                   | - Serous colon                         |
| -- Sublingual gland                    | - Cardiac part of stomach        | - Coats of the colon                   |
| -- Submandibular gland                 | - Bottom of the stomach          |                                        |
|                                        | - Cardiac clipping               |                                        |

- Blindness
- Club hole
- Red-like process
- Colon
- Ascending colon
- Right fold of the colon
- Transverse colon
- Left fold of the colon
- Descending colon
- Sigma-shaped colon
- Rectum
- Ice crease
- Rectal ampoule
- Outlet channel
- Exit poles
- Outflow sinuses
- The Outbound

#### Liver

- Right liver lobe
- Left liver lobe
- Diaphragm surface
- Lower edge
- Interior surface
- Gall bladder pit
- Liver Gate
- Hollow vein groove
- Venous ligament cleft
- Round ligament of the liver
- Liver circular ligament gap
- Square liver lobe
- Caudate lobe of liver
- Common hepatic duct

- Right liver duct
- Left liver duct
- Gallbladder
- Bottom of gallbladder
- Gallbladder body
- Gallbladder neck
- Bubble Strait
- Common bile duct

#### Pancreas

- Pancreatic head
- Pancreatic body
- Body surfaces
- Body edge
- Pancreatic tail

#### Ocherevina

- Small intestine ripple
- Ripple root
- Ripple of the transverse colon
- Red-like process ripple
- Sigma colon ripple
- Big bonnet
- Small bonnet
- Liver ligaments
- Crown ligament
- Sickle ligament
- Right triangular ligament
- Left triangular ligament
- Bonnet bag
- Bonnet hole
- Liver bag
- Pre-ventricular bag
- Right mesenteric sinus
- Left mesenteric sinus

- Left side channel
- Right side channel
- Upper club-blind-stiff nook
- Lower glomerular-blind-stiff nook
- Erect-uterine depth
- Bubble-uterine depth
- Erect-bubble depth
- Median umbilical fold
- Front umbilical fold
- Inside the armpit
- Side umbilical fold
- Side armpit

#### Nose

- Root of the nose
- Back of the nose
- Tip of nose
- Nose wings

#### Nasal cavity

- Nostrils
- Hoanee
- Nasal septum
- Upper nasal shell
- Middle nasal shell
- Lower nasal shell
- Nose brace
- Upper nose stroke
- Middle nose stroke
- Lower nose stroke
- Common nose stroke
- Bringing sinuses
- Maxillary sinus
- Wedge-shaped sinus

|                                           |                                                    |                                     |
|-------------------------------------------|----------------------------------------------------|-------------------------------------|
| -- The frontal sinus                      | -- The Loudspeaker                                 | - Diaphragm surface                 |
| -- Mesh cells                             | --- Voice fold                                     | - Interparticle surface             |
| - Mucosa                                  | --- Laryngeal ventricle                            | - Leading edge of lung              |
| - Olfactory part                          | --- Voice slot                                     | - Left lung tongue                  |
| - Respiratory part                        | ----Interperitoneal glottis                        | - Heart clipping of the left lung   |
| Larynx                                    | ---- Intercartilage part of glottis                | - Left lung tongue                  |
| - Larynx (on the corpse)                  | -- Background cavity                               | - Lower edge of lung                |
| - Thyroid cartilage                       | - Mucosa                                           | - Gate of the lung                  |
| -- Upper horn of thyroid cartilage        | - Elastic laryngeal cone                           | - Lung root                         |
| -- Lower thyroid cartilage horn           | -- Vocal ligament                                  | - Oblique lung gap                  |
| - Ring-like cartilage                     | - Quadrangular plate                               | - Horizontal slit of the right lung |
| -- Ring-like cartilage arc                | -- Adder ligament                                  | - Upper lobe of lung (left, right)  |
| -- Peach cartilage plate                  | - Laryngeal muscles                                | - Mean right lung lobe              |
| - Scooping cartilage                      | Trachea                                            | - Lower lobe of lung (left, right)  |
| -- Base of scooping cartilage             | - Neck part                                        | Plevra                              |
| -- Muscular process of scooping cartilage | - Chest part                                       | - Nutrient (pulmonary) pleura       |
| -- Worm cartilage vocal process           | - Bifurcation of the trachea                       | - Wall pleura                       |
| -- Scarlet cartilage tip                  | - Tracheal cartilage                               | -- Pleura Dome                      |
| - Epiglottis                              | - Ring (tracheal) ligaments                        | -- Rebrova part                     |
| - Ring-thyroid joint                      | - Intersecting wall                                | -- Mid-wall                         |
| - Ring-scooped joint                      | Bronchi                                            | -- Diaphragm part                   |
| - Shield-garter section                   | - Right head bronch                                | - Pleural cavity                    |
| - Median ring-thyroid ligament            | - Left main bronchus                               | -- Rebar-diaphragm nook             |
| - Ring-fucked ligament                    | - Bronchial tree                                   | -- Upright-mid-wall nook            |
| - Laryngeal cavity                        | Lungs                                              | Kidney                              |
| -- Entrance to the larynx                 | - Lung rights                                      | - Kidneys (right, left)             |
| -- Laryngeal proverb                      | - Left lung                                        | -- Side Edge                        |
| --- Priscal fold                          | - Base of lung                                     | -- The Far Edge                     |
| --- Priscal slit                          | - The top of the lung                              | --- Kidney Gate                     |
|                                           | - Rebar surface and                                | --- Renal sinus                     |
|                                           | -- Vertebral part of the rebar surface of the lung |                                     |
|                                           | - Mid-wall surface                                 |                                     |

|                          |                               |                                        |
|--------------------------|-------------------------------|----------------------------------------|
| -- Front surface         | - Back edge                   | Male ureter                            |
| -- Back surface          | - Protein shell               | - Prostate part                        |
| -- Top end (pole)        | - Testicular mediastinal      | - Intersecting (intermediate) part     |
| -- Lower end (pole)      | - Septum testicles            | - Spongy part                          |
| - Fatty kidney capsule   | - Testicular lobes            | - Internal urinary eye                 |
| - Fibrous kidney capsule | - Testicular parenchyma       | - External urinary eye                 |
| - Kidney cortical matter | Above the testicle            | Wicket                                 |
| - Kidney medulla         | - Head above the testicle     | Ovary                                  |
| - Kidney pyramids        | - Body above the testicle     | - Free Edge                            |
| - Kidney papillae        | - Tail over the testicle      | - Brig edge                            |
| - Kidney pillars         | Family rope                   | - Front surface                        |
| - Kidney bowl            | - Components                  | - Side surface                         |
| - Large kidney calyx     | Family-nosed strait           | - Pipe end                             |
| - Small kidney calyx     | - Wicket part                 | - Uterine end                          |
| Ureter (right, left)     | - Cable parts                 | - Protein shell                        |
| - Abdominal part         | - Armpit part                 | - Ovarian cortex                       |
| - Pelvic part            | - Pelvic part                 | - Ovarian medulla                      |
| - Intraosseous part      | - Ejaculate duct ampoule      | - Own ovarian ligament                 |
| Bladder                  | Family Chubby                 | Uterus                                 |
| - Top of the bubble      | Prostate gland                | - Front surface                        |
| - Bubble body            | - The basis of the prostate   | - Back surface                         |
| - Bottom of the bubble   | - Prostate apex               | - Uterine body                         |
| - Neck bubble            | - Front surface               | - Bottom of the uterus                 |
| - Bubble triangle        | - Back surface                | - Cervix                               |
| - Eye of the ureter      | - Prostate lobe (right, left) | -- The superarticular part of the neck |
| - Internal urinary eye   | - Prostate isthmus            | -- Vaginal neck                        |
| - Mucosa                 | Penis                         | - Uterine cavity                       |
| Testicle                 | - Penile root                 | - Uterine eye                          |
| - Front surface          | - Penile body                 | - Cervical canal                       |
| - Side surface           | - Back of penis               | - Broad uterine ligament               |
| - Top end (pole)         | - Penis head                  | - Round uterine ligament               |
| - Lower end (pole)       | - Cavernous penile body       | Fallopian tube                         |
| - Front edge             | - Penile spongiform body      |                                        |

|                                          |                             |                                              |
|------------------------------------------|-----------------------------|----------------------------------------------|
| - Uterine part                           | Adrenal gland (right, left) | -- Anterior median slit                      |
| - Isthmus of fallopian tube              | Pituitary gland             | -- Pyramid of the oblong brain               |
| - Ampoule fallopian tube                 | Pineal gland                | -- Pyramid Crossing                          |
| - Washing of fallopian tube              | Bone marrow                 | -- Anterior lateral furrow                   |
| --Threads of fallopian tube              | Vaginal gland (thymus)      | -- Oliva                                     |
| - Fallopian eye of fallopian tube        | Spleen                      | -- Posterior lateral furrow                  |
| - Abdominal hole of fallopian tube       | - Spleen Gate               | -- Wedge-shaped bundle                       |
| Vagina                                   | Palate tonsils              | -- Wedge-shaped hump                         |
| - Vaults of the vagina                   | Red-like process            | -- Thin beam                                 |
| - Anterior vaginal wall                  | Spinal cord                 | -- Thin hump                                 |
| - Back wall of vagina                    | - Neck trunk                | -- Posterior median furrow                   |
| External female genitals                 | - Lumbar-ice column         | -- Lower cerebellar pedicle                  |
| - Pubic enhancement                      | - Brain cone                | Bridge                                       |
| - Big shamed lip                         | - End thread                | - Main furrow                                |
| - Shy gap                                | - Anterior median slit      | - Middle cerebellar pedicle                  |
| - Small shamed lip                       | - Posterior median furrow   | - Upper cerebellar pedicle                   |
| - Vaginal pigment                        | - Front side groove         | - Upper brain sail                           |
| - Vagina hole                            | - Posterior lateral furrow  | - Bridge cover (cross section)               |
| - Clit                                   | - Spinal cord ropes         | - Main part of the bridge                    |
| Female ureter                            | -- Front rope               | Fourth ventricle                             |
| Perineum                                 | -- Side rope                | - Diamond-shaped fossa                       |
| - Buttock-exit pit                       | -- Back rope                | -- Median furrow                             |
| - Bulbous-spongy muscle                  | - Central Channel           | -- Premarital increase in rhombus-like fossa |
| - Sciatic-cavernous muscle               | - Gray matter               | -- Brain bands of the fourth ventricle       |
| - Perineal superficial transverse muscle | -- Front Horn               | -- Sublingual nerve triangle                 |
| - Deep transverse muscle perineum        | -- The back horn            | -- Triangle of the vagus nerve               |
| - External Muscle Output Switch          | - White matter              | -- Side nook                                 |
| Thyroid gland                            | Brain                       | -- Premarital increase in rhombus-like fossa |
| - Thyroid lobe                           | Brain stem                  | -- Facial hump                               |
| - Thyroid isthmus                        | -- Oblong brain             |                                              |
|                                          | -- Bridge                   |                                              |
|                                          | -- The middle brain         |                                              |
|                                          | Oblong brain                |                                              |

- Front Door Field
- Cover of the fourth ventricle
- Upper brain sail
- Lower brain sail
- The middle brain
- Middle brain roofing
- Roof plate
- Upper hump
- Lower hump
- Top knob knob
- Lower knob handle
- Brain plumbing
- Interstitial fossa
- Posterior penetrated substance
- Leg of the brain
- Middle brain cover
- Red core
- Black matter
- Base of the brain leg
- Cerebellum
- Cerebellar hemisphere
- Cerebellar worm
- Cerebellar crevices
- Cerebellar leaves
- Patchwork
- Tree of Life
- Cerebellar cortex
- Toothed core
- Lower cerebellar leg
- Middle cerebellar pedicle
- Upper cerebellar leg
- Intermediate brain

- Talamus
- The front hump of the thalamus
- Thalamus pillow
- Thalamus brain band
- Epitalamus
- Leash
- Leash triangle
- Pineal gland
- Metatalamus
- Lateral kneecap
- Inside the crankshaft
- Hypothalamus
- Visual intersection
- Visual masts
- Grey hump
- The Watering Hole
- Papillary body
- Third ventricle
- Walls
- Interventricular hole The opening of the brain's water supply
- Hemisphere of the large brain
- Longitudinal cleft of the large brain
- Lateral fossa of the large brain
- Frontal lobe
- Thyme share
- Temporal lobe
- Occipital lobe
- Island

- Upper lateral surface of the large brain
- Central furrow
- Lateral furrow
- Frontal lobe
- The frontal pole
- Pre-central groove
- Pre-central gyrus
- Upper frontal groove
- Lower frontal groove
- Upper frontal gyrus
- Middle frontal gyrus
- Lower frontal gyrus
- Upstream Branch
- Front branch
- Tire part
- Triangular part
- The oculomotor part
- Thyme share
- Central furrow
- Central gyrus
- Upper thyme particle
- Intramuscular sulcus
- Lower thyme particle
- Angular gyrus
- Supercritical gyrus
- Temporal lobe
- Superior temporal sulcus
- Lower temporal sulcus
- Superior temporal gyrus
- Middle temporal gyrus
- Lower temporal gyrus
- Transverse temporal gyrus

|                                                                    |                                                  |                                                 |
|--------------------------------------------------------------------|--------------------------------------------------|-------------------------------------------------|
| - Occipital lobe                                                   | -- Beak                                          | -- Rear horn walls                              |
| -- Occipital Pole                                                  | -- Knee                                          | -- Bird spur of the lateral ventricle           |
| - Island                                                           | -- Trunk                                         | -- Bypass lateral ventricular enhancement       |
| -- Island gyrations                                                | -- Roller                                        | - Inferior (temporal) horn of lateral ventricle |
| The front and bottom surfaces of the hemisphere of the large brain | - Transparent partition                          | -- Lower horn walls                             |
| - Corpus callosum furrow                                           | - Vaults                                         | -- Seahorse                                     |
| - Belt furrow                                                      | -- The Pillar                                    | - Ventricular opening                           |
| - Cingulate gyrus                                                  | -- Body                                          | - Outer capsule of the terminal brain           |
| - Isthmus of the cingulate gyrus                                   | -- Leg                                           | - Inner capsule of the terminal brain           |
| - Morskokonikova furrow                                            | - Olfactory bulb                                 | -- Front leg of inner capsule                   |
| - Seaside gyrus                                                    | - Olfactory path                                 | -- Inner capsule knee                           |
| - Hook                                                             | - Olfactory triangle                             | -- Rear leg of inner capsule                    |
| - Serrated gyrus olfactory sulcus                                  | - Front penetrated substance                     | Cerebrospinal hard sheath                       |
| - Centripetal groove                                               | Core cores                                       | Solid lining of the brain                       |
| - Centripetal particle                                             | - Striped body                                   | -- Large brain sickle                           |
| - Pre-wedge                                                        | -- Caudate nucleus                               | -- Cerebellar sickle                            |
| - Thyme-occipital sulcus                                           | ---Gold                                          | -- Cerebellar tent                              |
| - Wedge                                                            | --- Body                                         | -- Seat diaphragm                               |
| - Sharp groove                                                     | --- Tail                                         | -- Sinuses of the hard shell                    |
| - Ulcerative gyrus                                                 | -- Lentil-like nucleus                           | --- Upper arrow sinus                           |
| - Bypass groove                                                    | --- Husk                                         | --- Lower arrow sinus                           |
| - Anterior occipital temporal gyrus                                | --- Lateral pale ball                            | --- Straight sinus                              |
| - Occipital temporal sulcus                                        | --- Inside pale ball                             | --- Occipital sinus                             |
| - Lateral occipital temporal gyrus                                 | - Fencing                                        | --- Transverse sinus                            |
| - Straight gyrus                                                   | Lateral ventricles                               | --- Sinus flow                                  |
| - Olfactory furrow                                                 | - Central part of lateral ventricle              | --- Sigma-shaped sinus                          |
| - Ophthalmic furrows                                               | -- Walls of the central part                     | --- Cavernous sinus                             |
| - Ocular gyrus                                                     | - Anterior (frontal) horn of lateral ventricle   | --- Wedge-stone sinus                           |
| - Corpus callosum                                                  | -- Anterior horn walls                           | --- Upper rocky sinus                           |
|                                                                    | - Posterior (occipital) lateral ventricular horn | --- Lower rocky sinus                           |

|                                    |                            |                                             |
|------------------------------------|----------------------------|---------------------------------------------|
| Spider-web of the brain            | -- Lower vault of          | - Oculomotor nerve (III pair)               |
| Cerebrospinal spider sheath        | connecting shell           | - Block nerve (IV pair)                     |
| Soft lining of the brain           | - Tear gland               | - Tripartite nerve (V pair) and its node    |
| Spinal soft sheath                 | Outer ear                  | -- Ocular nerve (1 branch V pair)           |
| Eyeball                            | - Ear sink                 | -- Maxillary nerve (2 branch of V pair)     |
| - Fibrous eyeball shell            | -- Curl                    | -- Mandibular nerve (3 branch of V pair)    |
| -- The protein lining of the eye   | -- Anti-aging agent        | --- Ear temporal nerve                      |
| -- Cornea                          | -- Kozelok                 | --- Ulcerative nerve                        |
| - Eyeball vasodilator              | -- Anti-icing              | --- Lower cell nerve                        |
| -- The vasodilator proper          | -- Ear lobe                | - Visiting nerve (VI pair)                  |
| -- The War Body                    | - External auditory stroke | - Facial and intermediate nerves (VII pair) |
| -- Iris                            | -- External auditory hole  | - Corneal nerve (VIII pair)                 |
| -- Pupil                           | -- Tympanic membrane       | - Ulcerative nerve (IX pair)                |
| - Retina                           | Middle ear                 | - Vagus nerve (X pair)                      |
| - Lens                             | - Drum cavity              | -- Reversible laryngeal nerve               |
| - A scrolled body                  | -- Cover wall              | - Front and rear stray trunks               |
| Additional eye structures          | -- Jugular stitch          | - Additional nerve (CHI pair)               |
| -Adder muscles of the eyeball      | -- Labyrinth wall          | - Hyoid nerve (XII pair)                    |
| -- Lateral rectus muscle           | -- Sausage wall            | Aorta                                       |
| -- Upper rectus muscle             | -- Sleeping wall           | - Aortic bulb                               |
| --Pristine rectus muscle           | -- Intersecting wall       | - Ascending aorta                           |
| -- Lateral rectus muscle           | -- Strap                   | - Aortic arc                                |
| -- Upper oblique muscle            | -- Covadelco               | --Aortic arc bars                           |
| -- Lower oblique muscle            | -- Hammer                  | - Descending aorta                          |
| - Eyebrow                          | -High pipe                 | -- Thoracic aortas                          |
| - Upper eyelid                     | Inner ear                  | -- Abdominal aortas                         |
| - Lower eyelid                     | - Bone maze                | Shoulder-head barrel                        |
| - Connective sheath (conjunctiva)  | -- The Twilight            |                                             |
| -- Upper vault of connecting shell | -- Semicircular channels   |                                             |
|                                    | -- Curl                    |                                             |
|                                    | - Intersecting labyrinth   |                                             |
|                                    | Cranial nerves             |                                             |
|                                    | - Optic nerve (II pair)    |                                             |

- Right common carotid artery
- Right subclavian artery
- Common carotid artery (right, left)
- External carotid artery
- Top thyroid artery
- Ulcerative artery
- Facial artery
- Occipital artery
- Posterior ear artery
- Ascending pharyngeal artery
- Superficial temporal artery
- Maxillary artery
- Lower cell artery
- Middle shell artery
- Internal carotid artery
- Neck part
- Rocky part
- Cavernous part
- Brain part
- Ocular artery
- Anterior cerebral artery
- Posterior connective artery
- Subclavian artery (right, left)
- Spinal artery
- Main artery
- Posterior cerebral artery
- Internal thoracic artery
- Shield-neck barrel
- Lower thyroid artery

- Neck barrel
- Transverse artery of the neck
- Arterial circle of the brain
- Internal jugular vein
- Facial vein
- Underreported vein
- External jugular vein
- Anterior jugular vein
- Superior vena cava
- Shoulder-main vein (right, left)
- Thoracic duct
- Heart
- The Heart Foundation
- Top of the heart
- Chest-shaped surface of the heart
- Diaphragm surface of the heart
- Pulmonary surface (right, left)
- Crown groove
- Anterior ventricular sulcus
- Posterior ventricular sulcus
- Aorta (on heart)
- Superior vena cava (on heart)
- Inferior vena cava (on heart)
- Pulmonary trunk (on heart)
- pulmonary artery (right, left)

- Right pulmonary veins (on heart)
- Left pulmonary veins (on the heart)
- Right atrium
- Right eye
- Crest muscles
- Upper hollow vein hole
- Hole of the lower hollow vein
- Hole of the corneal sinus
- Left atrium
- Left eye
- Crest muscles
- Pulmonary vein holes
- Inter-cardiac septum
- Oval fossa
- Right ventricle
- Right atrial ventricular opening
- Right atrial ventricular valve
- Front leaf
- Back leaf
- Partition leaf
- Arterial cone
- Pulmonary barrel hole
- Pulmonary stem valve
- Right crescent flap
- Left crescent flap
- Front crescent flap
- Anterior papilla muscle
- Posterior papilla muscle
- Septal papilla muscle
- Tendon strings

- Fleishy transfers

Left ventricle of the heart

- Left atrial ventricular opening

- Left atrial ventricular valve

--Interest leaf

-- Back leaf

- Aortic solution

-- Aortic hole

- Aortic valve

-- Right crescent flap

-- Left crescent flap

-- Rear crescent flap

- Aortic sinuses

- Anterior papilla muscle

- Posterior papilla muscle

- Tendon strings

- Fleishy transfers

Ventricular septum

Endocard

Myocardium

Epicard

Pericardium (aspen)

- Venerable transverse sinus

- Orphan sinus scythe

Right coronary artery of the heart

- Posterior ventricular branch

Left coronary artery of the heart

- Anterior ventricular branch

- Round branch

Crown sinus

- Large heart vein

- Middle heart vein

- Small heart vein

Aorta- Aortic Bulb

- Ascending part of the aorta

- Aortic arc

- Descending aorta

- Bifurcation of the aorta

Thoracic aorta

- Posterior intercostal arteries

Abdominal aorta

- Lower diaphragm artery

- Lumbar arteries

- Abdominal trunk

-- Left gastric artery

-- Splenic artery

--- Left gastrointestinal artery

-- Common hepatic artery

--- Gastrointestinal-duodenal artery

----Right gastrointestinal artery

---The upper pancreas-duodenal artery

--- Right gastric artery

-- Own hepatic artery

- Upper mesenteric artery

-- Lower pancreas-duodenal artery

-- Hollow intestinal arteries

-- Glomerular arteries

-- Club-bypass artery

-- Right bypass artery

-- Middle circumferential artery

- Lower mesenteric artery

-- Left bypass artery

-- Sigma-like artery

-- Superior rectal artery

- Middle adrenal artery

- Renal artery

- Testicular (ovarian) artery

Joint tuberos artery

Inner tuberos artery

- Lumbar artery

- Superior sciatic artery

- Lower sciatic artery

- Outback artery

- Umbilical artery

- Uterine artery

- Internal shy artery

- Lower bladder artery

- Middle rectal artery

Joint club vein (right, left)

Inferior vena cava

- Lumbar veins

- Testicular (ovarian) vein

- Renal vein

- Adrenal vein

Inner club vein

Voritic hepatic vein

- Upper mesentery vein

- Lower mesenteric vein

- Splenic vein

Armpit artery

- Thoracic-superfluid artery

- Lateral thoracic artery

- Submandibular artery

- Thoracic dorsal artery

- Scapular circumference

- Posterior circumferential artery of the shoulder

- Anterior circumferential artery of the shoulder

Brachial artery

- Deep shoulder artery

- Upper ulnar bypass artery

- Lower ulnar bypass artery

Radial artery

- Surface palm branch

Ulnar artery

- Common interosseous artery

Surface palm arch

Deep palm arc

- Common palmar finger arteries

Plug-in vein

- Armpit vein

- Main vein

- Main vein

- Shoulder veins

- Ulnar veins

- Radial veins

Outer tuberos artery

- Lower supracerebral artery

Femoral artery

- Superficial adrenal artery

- Deep femoral artery

- Anterior peripheral artery of the hip

- Lateral circumference artery of the hip

- Descending knee artery

Popliteal artery

- Lateral superior knee artery

- Anterior superior knee artery

- Lateral inferior knee artery

- Anterior inferior knee artery

- Middle knee artery

Anterior tibia

- Dorsal artery of the foot

- Arcuate artery

Posterior tibia

- Fibular artery

- Lateral plantar artery

- Anterior plantar artery

External club vein

- Stegnova vein

- Large subcutaneous vein

- Deep femoral vein

- Popliteal vein

- Small subcutaneous vein

- Anterior tibial veins

- Posterior tibial veins

Cute trunk

- Sympathetic barrel assemblies

- Interstitial branches of the sympathetic trunk

The Great Gut Nerve

- Small internal nerve

- Abdominal plexus and nodes

Spinal nerves

Cervical plexus

- Neck loop

- Small occipital nerve

- Large ear nerve

- Cervical transverse nerve

- Diaphragm nerve

Brachial plexus

- Trunks

- Top barrel

- Middle barrel

- Lower barrel

- Super-key part

- Long thoracic nerve

- The subclavian nerve

- The supralopathic nerve

- Thoracic-spinal nerve

- The premarital thoracic nerve

- Lateral thoracic nerve

- Connecting part

- Side beam

- Front beam

- Rear beam

- Musculoskeletal nerve

- Median nerve

- Ulnar nerve

- Radial nerve

- Armpit nerve
- The prenatal cutaneous nerve of the shoulder
- Forearm cutaneous nerve
- Intercostal nerves
- Lumbar plexus
- Tuberous nerve
- Club-smelling nerve
- Femoral nerve
- Lateral skin nerve of the hip
- Outback nerve
- Femoral nerve
- Ice plexus
- Sciatic nerve
- Common fibula nerve
- Superficial fibula nerve
- Deep fibula nerve
- Tibial nerve
- The outer plantar nerve
- Lateral sole

**The applicant's independent work** involves preparation for practical classes and final class, mastering topics for independent work, preparation of abstract reports, presentations, tables. Control of mastering the topics of practical classes and independent work is carried out in practical classes and the final class and exam in the discipline.

**Individual work** includes researching scientific literature, preparing reviews on the given topics for presentation, performing scientific and practical research, participation in specialized Olympiads, scientific and practical conferences, competitions, scientific works.

Methodical recommendations for practical classes, independent work, lecture materials are available on the website of the department.

The way to get materials: EMU site/Student/Department of fundamental disciplines/Educational and methodological support of the department/"Human anatomy"/ or follow the link Department of fundamental disciplines/Discipline "Human anatomy". Materials are accessed from the student's Office 365-based corporate account.

## 5. Forms and methods of monitoring learning success

|                                                                                             |                                                                                                                                                                              |
|---------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Current control in practical classes                                                        | Methods: individual oral survey, structured written works, test tasks with the choice of correct answers.                                                                    |
| Control of mastering the thematic section of the discipline in intermediate control classes | Methods: oral or written survey, electronic testing, <i>methods of self-control and self-assessment</i> .                                                                    |
| Final semester control                                                                      | According to the regulation on control measures in EMU (regulation of EMU)                                                                                                   |
| Final control of the discipline - <i>exam</i>                                               | Methods: by exam cards in the form of an oral exam, monitoring of acquiring of practical skills (According to the Regulation on control measures in EMU (Regulation of EMU). |
| Tools for diagnosing learning success                                                       | Theoretical questions, tests, clinically oriented situational tasks, practical tasks, demonstration of practical skills.                                                     |

## 6. Evaluation criteria

Knowledge assessment is carried out according to regulation on control measures in EMU (regulation of EMU).

|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Current control                  | According to the four-point system of traditional grades: 5 "Excellent", 4 "Good", 3 "Satisfactory", 2 "Unsatisfactory"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Control of practical skills      | According to the four-point system of traditional grades                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Exam                             | Based on a 200-point scale (the sum of points for the current academic activity of the student, the result of passing the exam and for successful completion of an individual task, if any)<br><br>Credited: 120 to 200 points<br><br>Not credited: less than 120 points (see Rating scale)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Final control for the discipline | The final control of students' academic performance is carried out after completing the study of the discipline and is implemented in the form of an exam.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Discipline assessment:           | The score on the discipline is determined based on the results of assessment of current activities and is expressed using a <b>fourpoint scale</b> : ("Excellent", "Good", "Satisfactory", "Unsatisfactory"), multi-point scale and ECTS. The assessment in the discipline consists of an assessment of the current academic performance and the result of passing the exam (in points), which is set when evaluating theoretical knowledge and practical skills in accordance with the list defined by the discipline program. The number of points that the applicant scored for current academic. performance in the discipline is defined as the arithmetic mean of the number of points that the applicant received during the study of the discipline (practical, seminar, laboratory classes, etc.). The resulting value of the average traditional rating is converted to points according to the scale of conversion of traditional ratings to rating points. The maximum number of points is 200. |

Matching grades on a 200-point scale, a 4-point (traditional) scale, and ECTS scale

| On a 200-point scale | Rating on a 4-point scale |
|----------------------|---------------------------|
| 180–200              | «5» Excellent             |
| 140–179              | «4» Good                  |
| 120–139              | «3» Satisfactory          |
| 0–119                | «2» Unsatisfactory        |
| On a 200-point scale | ECTS evaluation           |

|         |   |
|---------|---|
| 192–200 | A |
| 172–191 | B |
| 148–171 | C |
| 128–147 | D |
| 120–127 | E |
| 0–119   | F |

### **Discipline/course policy**

The student has the right to receive high-quality educational services, access to up-to-date scientific and educational information, qualified advice during the study of the discipline and mastering practical skills. The policy of the department in the provision of Educational Services is student-centered, based on the regulatory documents of the Ministry of Education and the Ministry of Health of Ukraine, the Charter of the EMU and the procedure for providing educational services regulated by the regulation on the organization of the educational process in the EMU and the principles of academic integrity.

### **Compliance with the EMU schedule, safety precautions in the classroom.**

#### **Requirements for preparing for practical classes.**

Students should arrive at classes on time, without being late. A student who is more than 10 minutes late for classes is not allowed in and must work it out in accordance with the established procedure. During practical classes, the student must wear a work uniform (medical gown, cap). Students who do not have a work uniform are not allowed to attend classes. The student must follow the safety rules during practical classes and while staying in the Department's premises. When discussing theoretical issues, students should demonstrate tolerance, politeness and respect for their colleagues and the teacher; when performing practical tasks, the workplace should be kept in order and cleaned after completing practical work.

**Use of mobile phones and other electronic devices.** The use of mobile phones and other electronic devices in the classroom is not allowed, only during Distance Learning, provided that it is technically necessary.

**Academic integrity.** When studying the discipline, the student should be guided by the following regulations: on academic integrity of EMU (regulation of EMU). In case of violation of the regulations of academic integrity during the current and final controls, the student receives a grade of "2" and must work it out to the teacher in accordance with the established procedure.

Regulation on control measures in EMU (Regulation of EMU).

**Skippping classes.** Missed classes should be worked out in accordance with the procedure established in the regulations on control measures in the EMU (regulation of EMU) during the time determined by the work schedule (Department of fundamental disciplines ) to the teacher on

duty. To work out a missed lesson the student must pass a test and answer in writing or verbally the question on the topic of the lesson.

**Procedure for admission to the final control** in the discipline is given in the regulations on control measures and regulations on the organization of the educational process in the EMU (regulation of EMU) and regulations on control measures in the TNM DMI (regulation of EMU). Students who do not have missed not worked out practical classes and lectures and have received an average traditional grade of at least "3" are allowed to participate in the final control.

**Additional individual points.** Points are awarded subject to the mandatory participation of the head, head teacher and teacher. These points are encouraging and are added once to the total score of the current academic performance and the result of passing the comprehensive exam. Their total number for one student should not exceed 10, and the final amount of points for an academic discipline should not exceed 200 points.

**Individual tasks include:**

- 1) writing essays and creating multimedia presentations with reports at meetings of the student scientific group of the department – 3 points;
- 2) participation in the creation of tables, graphological structure, posters on the topics of practical classes – 2 points;
- 3) participation in the student competition in the discipline at the First Stage – 1 point;
- 4) participation/prize-winner of the All-Ukrainian student competition in the discipline - 7/10 points;
- 5) author or co-author of abstracts/article – 2/5 points;
- 6) author or co-author of an oral/information stand report at a scientific conference – 6/3 points;
- 7) author of a student scientific paper accepted for participation or awarded by a diploma of I-III degree in the All – Ukrainian competition of student scientific papers at Stage II - 8 (participation) or 10 (diploma) points.

**Resolving conflict issues.** If there are misunderstandings and complaints against the teacher due to quality of educational services provided, knowledge assessment, and other conflict situations, the student must first report his/her claims to the teacher. If the conflict issue is not resolved, the student has the right to submit an appeal to the head of the department in accordance with the regulations on consideration of applications from applicants for higher education in EMU (regulation of EMU), Regulations on consideration of applications, complaints, and proposals of students in EMU (regulation of EMU), Regulations on meeting the requirements of the organization of the educational process (regulation of EMU), Regulation on the appeal of the results of the final control of knowledge of applicants for higher education in EMU (regulation of EMU), Regulations on safe educational environment in EMU (regulation of EMU).

**Policy in the context of distance learning.** The procedure for distance learning is regulated by regulation of EMU. The main training platforms for conducting training sessions are Microsoft Teams, Zoom. The procedure for conducting practical classes and lectures, working out and consultations during Distance Learning is published on the Department's Web page Department of fundamental disciplines.

Feedback from the teacher is provided directly during the lesson and/or consultation, and is also possible via email (in case of force majeure) during working hours.

#### **1. Training resources**

Educational and methodological support of the discipline is published on the website of the Department ( Department of fundamental disciplines ). Consultations are held according to the consultation schedule.

2. **Schedule and distribution of groups by teacher** are published on the Department's Web page (Department of fundamental disciplines).
3. **Questions for intermediate and final control of the discipline** are published on the Department's Web page (Department of fundamental disciplines).

### **Literature**

#### ***Basic***

1. Alice Roberts. Human Anatomy. 2015. – 256 p.
2. Chaurasia B. D. Handbook of General Anatomy: textbook / B. D. Chaurasia. - 4th ed. - New Delhi ; Bangalore ; Pune : CBS Publishers & Distributors, 2011. - 262 p.
3. Netter Frank H. (ed.) Atlas of Human Anatomy:7th edition. - Elsevier, 2018. - 791 p.
4. Rogers A. W. Textbook of Anatomy 1st Edition. 790 p.

#### **Information resources:**

1. <http://link.springer.de/link/service/journals/00276/index.htm>
3. <http://meduniver.com/Medical/Anatom/>
4. <https://www.anatomystandard.com/>
5. <http://anatomia.ucoz.com/>