MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

Petro Mohyla Black Sea National University

Medical Institute

Department of Anatomy, Clinical Anatomy, Operative Surgery and Pathomorphology

"APPROVED"

First Vice-Rector

Course Discription

HUMAN ANATOMY

field of knowledge 22 «Health care»

in the specialty 222 «Medicine»

Developer of program	Olena Nuzhna
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Head if EMD	Serhii Shkirchak

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1. Description of the course

Characteristic	Subject	
The name of the subject	Human anatomy	
Field of knowledge	22 «Health care»	
Specialty	222 «Medicine»	
Specialization (if any)		
Educational program		
Higher educational level	MSc	
Status of discipline	Normative	
Curriculum	1,5 years	
Academic year	1-st, 2-d	
Semester numbers:	Day time form	Correspondence form
	1-st, 2-d,3-d	
Total ECTS credits/ hours	14,5 credits / 435 hours	
Course structure: - lectures - seminars (practical, laboratory, semigroup) - hours of independent work of students	Day time form	Correspondence form
	30 hours. 230 hours. 175 hours.	
Percentage of classroom work	60%	
Languages	Ukrainian, English	
The form of interim control (if any)	Modular control total (MCT)	
The form of final control	Credit (2-d semester), Exam (3-d semester)	

2. The purpose, objectives and results of the study of the discipline

Purpose of the course: the student must to knowledge involves the acquisition of each of anatomy in the world of natural science ideas about the structure and function of the human body as a whole, the ability to use the knowledge acquired in the further study of other fundamental sciences of medicine, and in the practical activity of the doctor.

The main tasks of studying the discipline of "human anatomy" as a science is a systematic approach to the description of the form, structure of organs, position (topography) of parts and organs of the body in unity with the performed functions taking into account age, sex and individual characteristics of the human body.

Objectives of the discipline:

- To study the structure of the human body, its systems, organs and tissues;
- Determine topographic-anatomical relationships of human organs and systems;
- To interpret patterns of prenatal and early postnatal development of human organs, variants of organ variability, defects of development;
- To interpret gender, age and individual characteristics of the structure of the human body;
- To predict the interdependence and unity of structures and functions of human organs, their variability under the influence of environmental factors;
- To determine the impact of social conditions and labor on the development and structure of the human body;
- Demonstrate mastery of the moral and ethical principles of treating a living person and their body as an object of anatomical and clinical study.

Prerequisites for studying the discipline:

1. The ability to apply knowledge in practical situations of the profession;
2. Knowledge and understanding of the subject area and understanding in solving professional issues;
3. The ability to exercise self-regulation, to lead a healthy lifestyle, the ability to adapt and act in a new situation;
4. Ability to choose communication strategy; ability to work in a team; skills between personal interactions;

5. Ability to communicate in their mother tongue, both orally and in writing; ability to speak a second language;

6. Information and communication technology skills;

7. Ability to think abstractly, analyze and synthesize, to be able to learn and to be modernly taught;

8. Ability to evaluate and ensure the quality of work performed;

9. Determination and perseverance about the tasks and responsibilities.

Expected learning outcomes:

1. The student must have anatomical terminology according to the anatomical nomenclature;

2. To know the general normal structure of all organs, systems and apparatus of the human body;

3. Establishing relationships between systems and organs of the human body;

4. To know the peculiarities of the topography of the organs and systems of the human body, which is a necessity for further study in the following departments of the medical institute;

5. Solve situational tasks that are part of STEP-1;

6. To be able to solve complex situational tasks that are possible in future professional activity;

7. To know the age and sex differences of organs and systems of the human body which are important for the following disciplines (pediatrics, internal diseases, etc.)

As a result of studying the discipline of the student

Should be to know:

- to use anatomical nomenclature and terminology of organs and systems of the human body;
- to know a functions, external and internal structure of the locomotor system,

internal organs, CNS, PNS, CVC, lymphatic, endocrine and immune systems;

- to know the topography of all investigated systems and organs;

- to know features of development of tissues and organs of the human body;

- to understand age and sexual changes of organs and systems of organs of the human body;

- to understand the neurohumoral relationship between all organs of the human body:

- to understand the interdisciplinary interconnection.

should be able to:

- to establish in the correct anatomical position all organs of the human body;

- to know a material English and Latin languages;

-to know and demonstrate on the simples a anatomical structures;

- a summarize the material studied;

- to decide a situational problems;

- to prepare a museum simples;

3. The program of the discipline

Day-time form:

	Topics	Lectures	Practical classes (ect)	Independed work
1	Locomotor apparatus	10	100	80
2	Splanchnology, CNS, cranial nerves, immune and endocrine system.	10	80	65
3	Cardiovascular system, lymphatic system and peripheral nervose system.	10	50	30
	Total at the course (hours)	**30**	**230**	**175**

4. Contents of the course

4.1 Plane of lectures

№	Name of the topic/ a plan
1.	**Topic 1. Introduction to human anatomy.** 1) The concept of the subject of human anatomy and its importance for study, types of anatomy, methods of study. 2) History of anatomy. Formation of anatomical schools of Ukraine (Kyiv's, Kharkov' s anatomical schools). The role of M.I. Pirogov's, V.N. Vorobyov's, V.M. Tonkov's, M.S. Spirov's in the development of anatomy of Ukraine. 3) Types of the structures of the human body. Axis's and plane which passes through of the human body.
2.	**Topic 2. General data of the bonny system** 1) Bone as an organ, development, classification of the skeleton and bones. 2) General arraignment of tubular, flat' s, air, sesamodal and irregular bones. 3) Clinical application of the bonny system in human body.
3.	**Topic 3. Introduction to artrosyndesmology** 1) Definition and functions of the joints. 2) Classification, formation and structures of the junctions. 3) Clinical application and biomechanics of the joints.
4.	**Topic 4. Introduction to myology.** 1) Definition, function' s and classification of the muscles. 2) Differences between skeletal and smooth muscles. The work of the muscles. 3) Clinical application of the muscles.
5.	**Topic 5. Introduction to Splanchnology** 1) Classification and general arraignment of internal organs. 2) Difference between tubular and parenchymal organs in human body. 3) The perineum: function, definition, derivatives. Clinical significance of digestive system.
6.	**Topic 6. Respiratory and urinary system.** 1) Function, classification and structures of the respiratory system.

	2) Function, classification and structures of the urinary system. 3) Anomalies of the development of the respiratory and urogenital systems.
7.	**Topic 7. Anatomy of the organs of immune system.** 1) Function, definition and classification of immune system. 2) Anatomy of central and peripheral organs of the immune system. 3) Clinical application of this system.
8.	**Topic 8. Introduction to endocrine system.** 1) Classification and function of organs of the endocrine system. 2) Branchiogenic glands (the thymus, the thyroid, parathyroid). 3) The Pancreas, ovary, testis, hypothalamus, epithalamiums.Clinical significance of the each other of the glands.
9.	**Topic 9. General arraignment of the Central nervous system** 1) Classification of CNS and neurons. 2) Anatomy of rombencephalon, mesencephalon, prosencephalon. 3) Neural pathways of spinal cord and brain.
10.	**Topic 10. Cranial nerves**. 1) General overview of the brain with exits of the roots of the cranial nerves. 2)I, II, III, IV and VI pairs of cranial nerves. 3) V, VII, IX, X,XI, XII pairs of cranial nerves.
11.	**Тема 11. Introduction to cardio-vascular system.** 1)Anatomy chambers of the heart, haemocirculation, systemic and pulmonary circulation. 2) General structures of arteries and veins. Capillary network. 3) Definition of anastomosis. Clinical application of cardiovascular system.
12.	**Topic 12. Development of the heart and vessels.** 1) Development of the cardiovascular system according of generative layers.

	2) Anomalies of the development (the disposition of the heart, a tetralogy of Fallot, the Fallot triad). 3) Haemocirculation of fetus. Clinical application.
13.	**Topic 13. General arraignment of lymphatic system.** 1) Classification of lymphatic organs. 2) Formations of right and left venous angels. 3) Venous drainage from organs of the head and neack, from thoracic and abdominal cavities, from upper and lower limbs.
14.	**Topic 14. General anatomy of peripheral nervous.** 1) Classification of nervous system. 2) Sympathetic and parasympathetic NS. 3) The spinal nerves. Formation of plexuses and nerves.
15.	**Topic 15. Blood and nerve supply from internal organs.** 1) Blood and nerve supply of the organs of head and neck. 2) Blood and nerve supply of the organs of thoracic and abdominal cavity. 3) Blood and nerve supply of the upper and lower limbs.

4.2. Plane of practical classes (seminars, laboratory, semigroup)

№	Topic / a plan
1.	**Topic 1. Introduction to human anatomy.** 1) The concept of the subject of human anatomy and its importance for study, types of anatomy, methods of study. 2) History of anatomy. Formation of anatomical schools of Ukraine (Kyiv's, Kharkov' s anatomical schools). Development of anatomy of Ukraine. 3) Types of the structures of the human body.
2.	**Тема 2**. The subject and tasks of the human anatomy. Methods of research of the human anatomy. The main modern direction for development of the anatomy.

	1) The object of study of anatomy. Purpose and objectives of the study. 2) Macroscopic and microscopic examination methods. 3) Interactive directions of development of the study of anatomy.
3.	**Topic 3**. The main stages of the development of anatomy in ancient times, in the Renaissance, in the XVII - XIX centuries. 1) Biographical information about famous anatomists of ancient times (Hippocrates, Avicenna) and their contribution to the development of anatomy. 2) Biographical information on the known anatomists of the Renaissance (Galen, Leonardo da Vinci, A. Vesalius, M. Servent, Malpigi). 3) Famous anatomists F. Bishot, M.I. Pirogov, V.M Vorobyov, V.M. Tonkov, M.S. Spirov and their contribution to the development of anatomy.
4.	**Topic 4.** Development of bonny system, embryogenesis and anomalies of the development. 1) Formation of first and second points of ossifications of the axillary skeleton. 2) Formation of first and second points of ossifications of the appendicular skeleton. 3) Anomalies of the development.
5.	**Topic 5**. Anatomical nomenclature. Axis and planes passes through human body. General arraignment of the vertebrae. 1) Basel anatomical nomenclature, Paris anatomical nomenclature. 2) The vertical, Sagittal and horizontal axis's its definition and distribution. 3) The main and accessory parts of the vertebrae.
6.	**Topic 6**. Cervical, Thoracic and lumbar vertebrae. 1) Cervical vertebrae (typical and untypical vertebrae). 2) Thoracic and lumbar vertebrae. 3) Deference's between vertebrae.
7.	**Topic 7**. Sacrum, coccyx ribs and sternum. 1) Anatomical position of the sacrum, main parts, accessory structures. 2) Anatomical position of the ribs and sretnum, main parts, additional structures. 3) Thorax as an hole.
8.	**Topic 8**. The frontal , parietal and occipital bones. 1) Main parts of the skull. The structures of the frontal bone. 2) Main parts of the parietal bone its structures. 3) Main parts of the occipital bone its structures.
9.	**Тема 9.** Sphenoidal and ethmoidal bones. 1) Main parts of the Sphenoidal bone its structures. 2) Main parts of the ethmoidal bone its structures. 3) A position in the skull of this bones.
10.	**Topic 10.** Temporal bone. 1) The squamous part of the temporal bone: position in the skull and structures. 2)The petrosal part of the temporal bone: position in the skull and structures. 3) The tympanic part of the temporal bone: position in the skull and structures.

11.	**Topic 11.** The canals of the temporal bone. 1) Carotid canal: origin, course and exit to cranial cavity. 2) The facial canal: origin, course and exit to cranial cavity. 3) The musculo-tubular canal, carotico-tympanical canal, canal of chordae tympany: origin, course and exit to cranial cavity.
12.	**Topic 12**. Bones of the facial skeleton: maxilla, mandibula, nasal bone, zygomatic bone, palatine bone. 1) Main parts of the skull- facial part. 2) Maxilla and mandibula: general arraignment and accessory structures. 3) Nasal bone, zygomatic bone, palatine bone general arraignment and accessory structures.
13.	**Topic 13.** Bones of the facial skeleton. Bonny palate. Anomalies of the development of bones of the facial skeleton. 2) Formation of the bonny palate 3) Features of skull development in during ontogenesis.
14.	**Topic 14.** The orbit. 1) Formation of walls of the orbit. 2) Communications of orbit with another's cavities of the skull. 3) Clinical significance.
15.	**Topic 15**. Bonny nasal cavity. 1) General arraignment of the nasal cavity and topography in the skull. 2) Formation of the orbit (the bones that forms each other of the walls). 3) Communications of nasal cavity with another's cavities of the skull.
16.	**Topic 16**. External and internal base of the skull. 1) External base of the skull: topography, structures. 2) Internal base of the skull: topography, structures. 3) Communications of nasal cavity with another's cavities of the skull.
17.	**Topic 17**. The temporal, infratemporal and pterygopalatine fossa's. 1) Formation of temporal fossae its communicationes. 2) Formation of infratemporal fossae its communicationes. 3) The pterygopalatine fossae with communications.
18.	**Topic 18.** Classification of the skeleton of the pectoral girdle of upper limb (scapula, clavicle). The humerus. 1) Main parts and anatomical structures of the clavicle. 2) Main parts and anatomical structures of the scapula. 3) Anatomy of the humerus.
19.	**Topic 19.** The bones of freely mobile part of the upper limb. (radius, ulna and bones of the wrist). 1) The radius. Main parts and anatomical structures. 2) The ulna. Main parts and anatomical structures. 3) The carpal. Metacarpal bones and phalanges.
20.	**Topic 20.** The bones of lower limb. (hip bone, femur, tibia and fibula). 1) Classification of skeleton of the lower limb. 2) Main parts and anatomical structures of the hip bone.

	3) Main parts and anatomical structures of the femur. 4) Main parts and anatomical structures of the tibia and fibula.
21.	**Topic 21. The bones of the foot.** 1) Main parts of the foot. 2) Tarsal and metatarsal bones: main parts and structures. 3) The phalanges of the foot: main parts and structures.
22.	**Topic 22**. Clasiffication of the junctions. The junctions of the trunk. 1) The non-iterrupted junctions. 2) Definition of the syndesmosis, synarthrosis and symphysis . 3) The junctions of the vertebral column and thorax.
23.	**Topic 23.** Junctiones of the skull. Temporomandibular joint**.** 1) Syndesmosis of the skull. 2) Formation of the temporomandibular joint. 3) Clinical application of the temporomandibular joint.
24.	**Topic 24.** Junctions of bones of pectoral girdles. 1) Formation of sterno-clavicular joint. 2) Formation of clavo-acronial joint. 3) Ligaments of the scapula.
25.	**Topic 25.** Junctions of the freely mobile part of upper limb. (плечовий, ліктьовий, променево-зап'ястковий, міжзап'ясткові, зап'ястко-п'ясткові та між фалангові). 1) Sholder joint: formation, ligaments and movements. 2) Elbow joint: formation, ligaments and movements. 3) Radio-carpal joint : formation, ligaments and movements. Syndesmosis of the wrist.
26.	**Topic 26.** Junctions of pelvic girdle. 1) The hip joint: formation, ligaments and movements. 2) The lumbosacral joint: formation, ligaments and movements. 3) Dimensions of the pelvis.
27.	**Topic 27.** Junctions of lower limb. 1) Knee joint. 2) Proximal and distal tibiofibular joint. 3) The joints of the foot.
28.	**Topic 28.** Synthetic class of artrosyndesmology.
29.	**Тема 29.** Introduction to myology. 1) Definition of myology. 2) Classification of the muscles (skeletal, smooth and cardiac muscles) 3) Structures of muscles fibers.
30.	**Topic 30.** Muscles of the back. The superficial and deep muscles of the back. 1) Classification of muscles of the back. 2) Superficial muscles of the back. 3) Deep muscles of the back.
31.	**Topic 31.** Muscles of the chest. The diaphragm.

	1) Classification of the muscles of the chest. 2) Superficial and deep muscles of the chest. 3) The diaphragm.
32.	**Topic 32.** Muscles of abdomen. Topography of anterior abdominal wall. 1) The anterior, lateral and posterior group of muscles of abdomen. 2) Regions of anterior abdominal wall. 3) The rectus sheath. The inguinal canal. The linea alba.
33.	**Topic 33**. Muscles of the head. 1) The facial muscles: origin, distribution and insertion. 2) The masticatory muscles: origin, distribution and insertion. 3) The difference between facial and masticatory muscles.
34.	**Topic 34.** Muscles of the neck. 1) Classification of the muscles of the neck. 2) The superficial muscles: a suprahyoid and infrahyoid group. 3) The fascia's of the neck.
35.	**Topic 35.** The triangles of the neack. 1) The boundaries of carotid triangles. 2) The boundaries of anterior, lateral, submandibular and sublingual triangles. 3) Clinical application.
36.	**Topic 36.** The muscles of shoulder girdles. 1) Classification of muscles of shoulder girdles. 2). The deltoid, teres major, teres minor, subscapular muscles and ect. 3) Origin, distribution and insertion to bones.
37.	**Topic 37.** The muscles of upper limb. 1) Classification of muscles of upper limb. 2) The flexors and extensors of the arm. 3) The flexors and extensors of the forearm.
38.	**Topic 38.** The fascia and topography of the upper limb. 1) A fascia's of the upper limb. 2) Axillary fossae, triangular and quadrangular, elbow fossae. 3) Sulci of the arm and forearm.
39.	**Topic 39.** Muscles of the pelvic girdle. 1) Classification of the muscles of pelvic girdle. 2) Flexors of the pelvis. 3) Extensors of the pelvis.
40.	**Topic 40**. Muscles of the freely mobile part of the lower limb. 1) Classification of muscles of the freely mobile part of the lower limb. 2) Flexors of the leg and foreleg. 3) Extensors of the leg and foreleg.
41.	**Topic 41.** The fascia s and topography of the lower limb. 1) The fasias of the leg and foreleg. 2) Boundaries of the femoral triangle, supraperiform and infraperiform foramen. 3) The femoral canal, vascular and muscular space.

42.	**Topic 42.** Synthetic class of osteology. 1) Classification of the skeleton and bones. 2) Bones of the axillary skeleton totally. 3) Bones of the appendicular skeleton totally.
43.	**Topic 43**. Synthetic class of artrosyndesmology. 1) Classification of the junctions. 2) Joints of the axillary skeleton. 3) Joints of appendicular skeleton.
44.	**Topic 44.** Synthetic class of myology. 1) Classification of the muscles. 2) Muscles of the axillary skeleton. 3) Muscles of appendicular skeleton.
45.	**Topic 45.** Development of bonny system. 1) The points of the first ossifications inside of tubular bones. 2) The points of the first ossifications inside of spongy bones. 3) Age features of bonny system.
46.	**Topic 46.** Anomalies of development of bonny system. 1) Classification of anomalies of development. 2) Osteochondropaty, amelya. 3) Polydactely, olygodactily, scoliosis.
47.	**Topic 47.**Clinical application of junctions of the bones. 1) Definition of arthrosis, isarthritis, polyarthritis, spondylosis, spondylolisthesis, unarthrosis. 2) Dimensions of the pelvis and clinical application. 3) Anomalies of the joints.
48.	**Topic 48.** Development of the muscular system. 1) Definition of germ. layers. 2) Segmentation of myotomes. 3) Anomalies of the development..
49.	**Topic 49.** The work of the muscles. 1) Biomechanics of muscles. 2) Conception of leverage. 3) General arraignment of the skeletal muscles.
50.	**Topic 50. FMC (final modul control 1) - certification.**
51.	**Topic 51.** Introduction to Splanchnology. 1) Classification of the organs of digestive system. 2) Anatomy of oral cavity: boundaries and communications. 3) The tongue and teeth.
52.	**Topic 52.** The salivary glands. 1) Classification of the glands of the oral cavity. 2) The parotid gland. 3) The suprahyoid and submandibular glands.
53.	**Topic 53.** Anatomy of the pharynges and esophagus.

	1) Pharynx: main parts, function, topography and structures. 2) Muscles of the pharynx. 3) Esophagus: main parts, function, topography and structures.
54.	**Topic 54.** The regions of anterior abdominal wall. Anatomy of the stomach. 1) Epigastric, mesogastrac and hypogastrac regions. 2) the stomach: main parts, function, topography and structures. 3) Relations to peritoneum of the organs of the abdominal cavity.
55.	**Topic 55.** Anatomy of small intestine. 1) Main parts of small intestine. 2) The duodenum: main parts, function, topography and structures. 3) The jejunum and ilium: main parts, function, topography and structures.
56.	**Topic 56. Anatomy of the large intestine.** 1) Main parts of the large intestine. The peritoneal relations. 2) The caecum, colon and rectum: main parts, function, topography and structures. 3) Differences between large and small intestine.
57.	**Topic 57.** Anatomy of the liver and goal bladder. 1) The liver: main parts, function, topography and structures. 2) The goal bladder: main parts, function, topography and structures: 3) Peritoneal relations of the liver and goal bladder.
58.	**Topic 58.** Anatomy of the pancreas. Circulation of the bile. 1) The pancreas: main parts, function, topography and structures. 2) Peritoneal relations of the pancreas. 3) Circulation of the bile.
59.	**Topic 59.** Anatomy of the peritoneum. 1) General conception of the peritoneum its borders. Peritoneum^ functions and definition. 2) The layers of the peritoneum: origin, distribution and derivatives. 3) Clinical applications of the peritoneum (recto-vesical pouch, recto-uterine pouch, vesico-uterine pouch ect).
60.	**Topic 60.** Introduction to respiratory system. Anatomy of external nouse and nasal cavity. 1) Clasiffication of organs of the respiratory system its functiones. 2) The External nose: main parts, function, topography and structures. 3) Nasal cavity its boundary and formation.
61.	**Topic 61.** Anatomy of larynx, trachea and main bronchus. 1) The larynx: main parts, function, topography and structures. 2) The trachea: main parts, function, topography and structures. 3) General conception of main bronchus.
62.	**Topic 62.** Anatomy of the lungs, devitiones of bronchus. The pleura and mediastinum. 1) The lungs: main parts, function, topography and structures. 2) The main bronchus: main parts, function, topography and structures. 3) The pleura and mediastinum: main parts, function, topography and

	structures.
63.	**Topic 63.** Introduction to urinary system. Anatomy of the kidney. 1) The organs of the urinary system its functions 2) The kidneys: main parts, function, topography and structures. 3) Internal structures of the kidneys. Rete Mirabelle.
64.	**Topic 64.** Anatomy of organs of uninary system (the ureters, urinary bladder and urethra). 1) The ureter: main parts, function, topography and structures. 2) The urinary bladder: main parts, function, topography and structures.. 3) The urethra: main parts, function, topography and structures.
65.	**Topic 65.** Anatomy of male genital organs. 1) Classification of male genital organs. 2) External genitalia: main parts, function, topography and structures. 3) Internal genitalia: main parts, function, topography and structures.
66.	**Topic 66.** Anatomy of female genital organs. 1) Classification of female genital organs. 2) External genitalia: main parts, function, topography and structures. 3) Internal genitalia: main parts, function, topography and structures.
67.	**Topic 67.** The perineum. 1) Definition of the perineum. The clinical and anatomical mind of the perineum. 2) The perineum: main parts, function, topography and structures. 3) Ishio-rectal fossae, clinical application.
68.	**Topic 68.** Anatomy of the organs of immune system I. 1) Classification of organs. 2) Anatomy of primary organs of immune system. 3) Main parts, function, topography and structures of thymus and red bonny marrow.
69.	**Topic 69.** Anatomy of the organs of immune system II. (spleen, lymp. nodes and tonsilles). 1) Classification of organs of immune system. 2) Secondary organs of immune system: function, topography and structures. 3) Clinical significance of organs of immune system (immunodeficiency, AIDs.
70.	**Topic 70.** Anatomy of the organs of endocrine system**.** 1) Classification of the organs of endocrine system**.** 2) The thyroid and parathyroid glands and suprarenal glands. 3) Endocrinal part of the ovary, testis and pancreas. The hypophysis and epiphysis.
71.	**Topic 71.** Indroduction to CNS.. 1) Classification of the central nervous system. 2) The white and gray matter of the spinal cord: main parts, function, topography and structures. 3) II stages of the development of the brain.
72.	**Topic 72.** Anatomy of the rombencephalon and IV ventricle.

	1) The boundaries of medulla oblongata and ponts. External and internal structures of their structures. 2) The boundaries, external and internal structures of the cerebellum. 3) IV ventricle.
73.	**Topic 73.** The rhomboid fossae. The external structures of rhomboid fossae. 1) Development of the brain. 2) The boundaries of rhomboid fossae. 3) Anatomical structures of rhomboid fossae.
74.	**Topic 74.** The rhomboid fossae. The internal structures of rhomboid fossae. 1) The boundaries of rhomboid fossae. 2) Projection of the nuclei on upper triangle of rhomboid fossae. 3) Projection of the nuclei on lower triangle of rhomboid fossae.
75.	**Topic 75. The midbrain and diencephalon.** 1) The boundaries on ventral and dorsal surfaces of midbrain and diencephalon. 2) External and internal structures of midbrain and diencephalon. 3) Thalamus, epythalamus, metathalamus and hypothalamus.
76.	**Topic 76.** Limbic system. The basilar nuclei. The lateral ventricle. 1) The function and structures of limbic system. 2) The basilar nuclei (n. caudatus, n. lentiformis, n. amegdoloideus, claustrum, putamen and n. clobosus) 3) The boundaries of the lateral ventricle.
77.	**Topic 77.** The white matter of the cerebral hemispheres. The centers of difference sensivity in cerebral cortex. , 1) The sulci and gyrus of the cerebral cortex. 3) The main centers of sensory, motor, birthing ect analyzeiters.
78.	**Topic 78.** The neural pathways of CNS. 1) Classification of neural pathways. 2) Ascending pathways to cerebellum. 3) Ascending pathways to cerebral cortex.
79.	**Topic 79.** The neural pathways of CNS. 1) Classification of neural pathways. 2) The pyramidal system. 3) The extrapyramidal system and descending pathways to spinal cord.
80.	**Topic 80.** The sensory organs. Anatomy of the eye. 1) Classification of sensory organs. 2) The functions, structures of the eye and accessory apparatus. 3) The optic pathway.
81.	**Topic 81.** Anatomy of ear. Conducting pathways of organ of hearing and balancing. 1) Anatomical structures of the external ear. 2) Anatomical structures of the medial ear 3) Anatomical structures of the internal ear.
82.	**Topic 82.** The cranial nerves I, II, III, IV and VI pairs of the cranial nerves.

	1) General arraignment of the brain with exits of the cranial nerves. 2) The olfactory, optic and oculomotor nerve. 3) The trochlear and abducent nerves.
83.	**Topic 83.** V pair of the cranial nerves. Trigeminal nerve: I and II branches. 1) General arraignment of the brain. 2) Ophthalmic nerve with branches. 3) Maxillary nerve with branches.
84.	**Topic 84.** Trigeminal nerve: III branch. 1) General arraignment of the brain with exits of the cranial nerves. 2) Mandibular nerve with branches. 3) Clinical significance of this nerve.
85.	**Topic 85.** VII pair of the cranial nerves. The fascial nerve. 1) General arraignment of the brain with exits of the cranial nerves. 2) The motor branches of this nerve. 3) The sensory branches of this nerve.
86.	**Topic 86.** VIII, IX, X, XI, XII pairs of the cranial nerves. 1) The vestibule-cochlear nerve. 2) The vagus and accessory nerves. 3) The glossopharyngeal nerve.
87.	**Topic 87.** Synthetic class of the second module (The Splanchnology, immune and endocrine systems, CNS. .
88.	**Topic 88.** Synthetic class of the second module (the sensory organs and cranial nerves).
89.	**Topic 89.** MSQ «KROK- 1».
90.	**Topic 90. FMC (final modul control 2) - credit.**
91.	**Topic 91.** Introduction to cardiovascular system. The heart. 1) General arraignment of cardiovascular system, haemocirculation. 2) Chambers of the heart, structures of the heart. 3) The systemic and pulmonary circulation.
92.	**Topic 92.** Topography of the heart. Walls of the heart, conducting pathway of the heart. Blood supply of the heart. 1) Holotophy, syntophy and skeletopy of the heart. 2) conducting pathway of the heart. 3) The pericardium.
93.	**Topic 93.** The aortae. Branches of the arch of aortae. 1) Origin, course and topography of aortae. 2) Common carotid artery: origin, course and topography with branches. Region for blood supply. 3) External carotid artery: origin, course and topography with branches. Region for blood supply.
94.	**Topic 94.** Internal carotid artery with branches.

	1) Internal carotid artery: origin, course and topography with branches. Region for blood supply. .
95.	**Topic 95.** Subclavian artery with branches. 1) Origin, main parts and topography of Subclavian artery 2) The branches of the first segment. 3) The branches of the second segment.
96.	**Topic 96.** Axillary and brachial artery. 1) Axillary artery: origin, course and topography with branches. Region for blood supply. 2) Brachial artery: origin, course and topography with branches. Region for blood supply. 3) Repetition of muscles and topography of the upper limb.
97.	**Topic 97.** Radial and ulnar artery with branches. 1) Radial artery: origin, course and topography with branches. Region for blood supply. 2) Ulnar artery: origin, course and topography with branches. Region for blood supply. 3) Superficial and deep arches of the wrist.
98.	**Topic 98.** Thoracic and abdominal aortae with branches. 1) Thoracic aortae: origin, course and topography with branches. Region for blood supply. 2) Abdominal aortae: origin, course and topography with branches. Region for blood supply.
99.	**Topic 99.** The arteries of the pelvis. Common, external and internal iliac artery. 1) Common iliac artery: origin, course and topography with branches. Region for blood supply. 2) External iliac artery: origin, course and topography with branches. Region for blood supply. 3) Internal iliac artery: origin, course and topography with branches. Region for blood supply.
100.	**Topic 100.** Arteries of lower limb. 1) Femoral artery: origin, course and topography with branches. Region for blood supply. 2) The popliteal artery: origin, course and topography with branches. Region for blood supply. 3) Anterior and posterior tibial: origin, course and topography with branches. Region for blood supply. arteries: origin, course and topography with branches. Region for blood supply.
101.	**Topic 101.** Venus of the head and neck. 1) Superior vena cava Верхня порожиста вена: формування, топографія та її притоки.

	2) Shoulder-head vein. Internal jugular vein: formation, topography and its tributaries (intracranial and extracranial tributaries). 3) External jugular vein: formation, topography and its tributaries.
102.	**Topic 102.** Subclavian and axillary veins. Superficial and deep veins of the upper extremity. 1) Subclavian vein: formation, topography and its tributaries. 2) Axillary vein: formation, topography and its tributaries. 3) The main vein and the main vein.
103.	**Topic 103.** Portal hepatic vein. Venous anastomoses. The inferior vena cava. 1) Formation, topography and tributaries of ERW. 2) Porto-forging, coffee-forging and porto-coffee-forging anastomoses. 3) The inferior vena cava: formation, topography and its tributaries.
104.	**Topic 104.** Veins of the free lower extremity (tibia and fibula with branches). Superficial and deep veins of the lower extremity. 1) Tibial vein: formation, topography and its tributaries. 2) Tibial vein: formation, topography and its tributaries. 3) Superficial and deep veins of the lower extremity.
105.	**Topic 105.** Lymphatic system. Classification of organs, structure of the lymphatic system. Lymph nodes of the head and neck. 1) Classification of the lymphatic system. 2) The structure of the lymphatic system. 3) Lymph nodes of the head and neck.
106.	**Topic 106.** Lymph nodes of the torso and extremities. Formation of left and right venous angles. 1) Lymph nodes of the head and neck. 2) Lymph nodes of the torso and extremities. 3) Formation of left and right venous angles.
107.	**Topic 107.** Autonomous part of the peripheral nervous system. Classification of emergencies. Spinal nerves-formation, branching. 1) Classification of emergencies, organs of the peripheral nervous system. 2) Spinal nerves-formation, branching.
108.	**Topic 108.** Cervical plexus. Formation and branching of branches. Internal plexuses of the cranial neck. 1) Cervical plexus: formation, topography and branching. 2) Internal plexuses of the cranial neck.
109.	**Topic 109.** Shoulder plexus. Trunk formation and innervation of the upper limb. 1) Shoulder plexus: formation, topography and branching. 2) Formation of trunks, topography. 3) The median nerve, musculoskeletal, ulnar and radial nerves.
110.	**Topic 110.** Thoracic nerves. Internal plexuses, thoracic part. 1) Formation of thoracic nerves: topography, branches. 2) Internal plexuses, thoracic part.
111.	**Topic 111.** Lumbosacral plexus. Coccygeal plexus. 1) Formation of the lumbar plexus: topography and branches. 2) The sacral plexus: topography and branches.

	3) Coccygeal plexus: topography and branches.
112.	**Topic 112.** Sympathetic nervous system. Sympathetic trunk (cervical, thoracic). 1) Sympathetic trunk - the central and peripheral part. 2) Cervical sympathetic trunk: topography of nodes and direction of postganglionic fibers. 3) Thoracic sympathetic trunk: topography of nodes and direction of postganglionic fibers.
113.	**Topic 113.** Sympathetic department of PNS. Lumbar and sacral division of the sympathetic trunk. 1) Topography of the sympathetic trunk. 2) Lumbar region: topography of nodes and direction of postganglionic fibers. 3) sacral department: topography of nodes and direction of postganglionic fibers.
114.	**Topic 114.** Parasympathetic nervous system. Classification. Central and peripheral part of the PNS. 1) The central part of the PNS. 2) Peripheral part of the PNS. 3) Innervation of the organs of the PNS.
115.	**Topic** 115. Generalization of material from the third module. Final modular control 3.

4.3. Tasks for independent work

Approximate topics of abstracts:

- Morpho-functional patterns of the structure of the mucous membrane of various organs of the digestive tract;
- Options and anomalies in the development of the digestive system;
- Variants and anomalies of the development of the respiratory system; • Options and anomalies in the development of the urinary system;
- Options and anomalies in the development of the female reproductive system; • Options and anomalies in the development of the male reproductive system;
- Variants and anomalies of development of organs of immune and endocrine system;
- Variants and anomalies of development of the spinal cord and its membranes;
- Variants and anomalies of development of the brain and its membranes;
- Variants and anomalies of visual organ development;
- Variants and anomalies of hearing development.

4.4. Ensuring the educational process

- Video table (medical training equipment - 2 pcs.);
- Interactive panel (medical training equipment - 1 pc.);
- Management module;
- Bisexual system of the urinary system;
- Didactic flexible spine;
- Set of posters "Human Biology";
- Mobile anatomical rack Briolight BR-MAS-43;
- Intestinal villi model, magnified 100 times;
- Model of the brain with arteries, 9 parts;
- Model of the female pelvis (2 parts);
- Model of a person with internal organs;
- Model of a man with muscles;
- Model of the pancreas and duodenum;
- Model of a woman's pelvis with ligaments, muscles and organs;
- Model of the digestive system;
- Model of a human skull, open lower ridiculous. 3 parts;
- Stomach model;
- Control module (medical training equipment);
- Model of a human skull divided into 22 parts.

Typical problems to be solved

Task № 1

1. After collision of two cars a driver got deformation of the middle third of the left crus, intensive pain, especially in attempt to move the left crus. Ends of the trihedral bone come out of the wound, hemorrhage is increasing. What bone can be injured?

+Tibia.
- Fibula.
- Femur.
- Patella.
- Talus.

2. Purulence of orbit soft tissues took place after an eye's trauma. Through what anatomical formation can the purulent process spread to the middle cranial fossa?

+ Through the superior orbital fissure.
- Through the anterior ethmoidal foramen.
- Through the posterior ethmoidal foramen.
-Through the inferior orbital fissure.
- Through the zygomaticoorbital foramen.

3. A casualty has a trauma of soft tissues and parietal bones in the saggital suture area with profuse bleeding. What formation is probably injured?

+ Sinus rectus.
- Sinus petrosus superior.
- Sinus sagittalis superior.
- Sinus sagittalis inferior.
- Sinus transverscs.

4. A patient was admitted to an intensive therapy department with heavy poisoning. To provide holiatry it is necessary to catheterize the patient and inject medicines into subclavian vein. In what topographical place is it localized?

+ Spatium interscalenum.
- Spatium anterscalenum.
- Spatium retrosternocleidomastoideus.
- Spatium interaponeuroticum suprasternale.
- Trigonum omotrapezoideum.

5. Little finger felon was complicated by the phlegmon of hand and forearm. Purulent process has spread over:

+ Vagina communis tendinum musculorum flexorum.
- Vagina tendinis musculi flcxoris pollicis longi.
- Canal is carpalis.
- Vagina tendinis musculi flexoris carpi radialis.
- Interfascial compartments.

6. During a meal milk gets into the nasal cavity of a newborn child. What is the probable cause of this pathology?

+ Cleft clip.
- Nasal septum deviation to the right.
- Basal skull fracture.
- Cleft palate.

- Nasal septum deviation to the left.

7. During physical training a Liar-old pupil felt pain in the hip joint ca after the lower extremity internal rotation. Traumatologist detected an in jury of a muscle tendon. What muscle is it?

+ M. piriformis.
- M. obturatorius internus.
- M. obturatorius externus
- M. gluteus medius.
- M. quadratus femoris.

«0» version of the exam ticket:

The form № H - 5.05

Petro Mohyla Black Sea National University
Qualification - Master
Program Subject Area: 222 «Medicine»
Field of Study: 22 «Healthcare»

Course until title - **HUMAN ANATOMY**

EXAM TICKET №2

1. Bone as an organ, its structure, chemical composition, development, growth. Classification bone, age characteristics.
2. Muscles of the abdomen - anterior group muscles their structure, blood and nerve supply. The rectus sheath of abdomen.
3. The Gall bladder and bile ducts, their structure, topography, blood and nerve supply.
4. The middle brain. The cerebral aqueduct.

Minutes of the meeting of the Department of Anatomy, Clinical Anatomy and Operative Surgery and Pathomorphology No. 5 of 12/19/2019

Head of department DM, prof. _____ Cherno V.S.

5. Final control

1st semester (certification)

1. The subject of anatomy and its importance for the study of clinical disciplines.
2. Brief information on the history of anatomy. Ukrainian School of Anatomy.
3. The role of VN Vorobyov, VM Tonkova, MS Spiro in the development of

domestic anatomy.
4. Types of body structure. Topographic axes and planes of the human body.
Osteology and arthrology
5. Bone as an organ, its structure, chemical composition, development, growth.
6. Bone classification, age characteristics.
7. Vertebra, general plan of structure.
8. Cervical and thoracic vertebrae.
9. Lumbar vertebrae.
10. Features of development and structure of sacral bone. Coccyx.
11. Vertebral column, its divisions, bends, age features.
12. Ribs, sternum, their structure.
13. The skeleton of the upper extremity, its divisions, x-ray.
14. Bones of the shoulder girdle, their conjunction.
15. Shoulder bone its structure, x-ray image.
16. Bones of forearm.
17. Skeleton of the brush, its departments, x-ray image.
18. Pelvic pelvis, its structure, age characteristics.
19. Femur, its structure, x-ray.
20. Tibia bones, their structure.
21. The skeleton of the foot, its divisions, the structure of the bones.
22. Occipital, parietal bones, their structure, and features of development.
23. Frontal, lattice bone
24. Wedge bone, its parts, structure.
25. The temporal bone.
26. Upper jaw, palatine bone, maxilla, their structure.
27. Lower jaw, small bones of facial skull.
28. Features of the development of the skull in ontogeny.
29. The skull as a whole, its divisions, parts of the surface.
30. The inner base of the skull.
31. Cranial fossa.
32. The outer base of the skull.
33. Temporal and subcutaneous fossa.
34. Wing-palatine fossa.
35. Ocular fossa.
36. The nasal cavity of its wall.
37. Paranasal sinuses, their topography, conjunction, function.
38. Classification of bone joints. Continuous connections.
39. Broken bones. Classification of joints.
40. Skull bones, their age characteristics. Types of seams.
41. Temporomandibular joint.
42. Connections of vertebrae, their characteristics. The spine as a whole.
43. Connection of ribs with vertebrae and sternum. Chest as a whole.
44. Joints of the bones of the shoulder girdle.
45. Shoulder joint, structure, x-ray.

46. Elbow joint.
47. Joints of forearm bones.
48. Wrist joint, its structure.
49. Brush joints, their characteristics, x-ray.
50. Connection of pelvic bones. The pelvis as a whole. Sexual features.
51. Hip joint.
52. Knee joint.
53. Ankle joint.
54. Joints and arches of the foot.

Muscles

1. The muscular system, its development. Somatic and visceral muscles, their innervation.
2. Muscle as an organ, general plan of structure, classification.
3. Muscle synergists and antagonists. Muscle Auxiliaries.
4. Muscles and fascia of the trunk, their classification, blood supply and innervation.
5. Superficial muscles of the back.
6. Deep back muscles.
7. Undercurrent muscles, their function of blood supply, innervation.
8. Muscles and fascia of the breast.
9. Diaphragm, its parts layered structure, weaknesses
10. blood supply, innervation.
11. Muscles of anterior and lateral walls of the abdomen, their topography, function ...
12. Straight muscles of a stomach, their structure, blood supply, innervation.
13. Straight vaginal vagina.
14. Weaknesses of the walls of the abdomen.
15. Inguinal canal, its walls, rings, contents, value.
16. Head and neck muscles, their function, classification, blood supply, innervation.
17. Superficial neck muscles, their development, structure, function, innervation.
18. Sublingual and sublingual muscles of the neck.
19. Deep neck muscles, their structure, function, innervation.
20. Plots and triangles of the neck, their borders, contents.
21. Fascia of the neck, their topography, cellular spaces of the neck.
22. Mimic muscles.
23. Chewing muscles.
24. Muscles of the upper extremity, their classification, blood supply, innervation.
25. Muscles and fascia of the shoulder girdle.
26. Front and back shoulder muscles. Fascia of the shoulder.
27. Muscles acting on the joints of the shoulder girdle, their topography, function, innervation.
28. Front group of muscles of forearm.

29. Radial and posterior group of forearm muscles.
30. Brush muscles, their classification, structure, function, blood supply, innervation.
31. The axillary cavity.
32. Channel of the radial nerve, biceps of the shoulder, their walls, contents.
33. The furrows of the elbow area, their borders, content.
34. Forearm furrows, their walls and contents.
35. Fibrous and fibrous canal channels of the brush, their contents.
36. Synovial vaginal brushes, their structure, value.
37. Muscles of the lower extremity, their classification, function, blood supply, innervation.
38. Internal group of pelvic muscles.
39. External group of pelvic muscles.
40. The anterior group of the thigh muscles, their function, blood supply, innervation.
41. Medial group of thigh muscles, their functions, blood supply, innervation.
42. The posterior group of the thigh muscles, their function, blood supply, innervation.
43. Anterior and lateral groups of tibiae muscles.
44. Rear group of tibiae muscles.
45. Muscles and fascia of the foot, their classification, blood supply, innervation.
46. Muscular and vascular lacunae.
47. The femoral triangle, its walls, its contents.
48. Anterior and posterior femoral furrows, drive canal, their walls, contents.
49. The femoral canal, its walls, openings.
50. popliteal fossa.
51. Tibia, musculoskeletal channels, their contents.
52. Synovial vaginas of lower limb tendons.

2nd semester (credit)

Internal organs

1. The oral cavity, its walls, departments. Language, its structure, blood supply, innervation. Salivary glands.
2. Teeth, permanent and milk, their structure, blood supply, innervation.
3. Yawn, its borders. The lymphoid ring of the pharynx.
4. The pharynx, its parts, walls, connections, blood supply, innervation.
5. The esophagus, its structure, topography, blood supply, innervation.
6. Stomach, structure, x-ray, blood supply, innervation.
7. Small intestine: its departments, topography, relation to the peritoneum.
8. The duodenum.
9. The mesenteric portion of the small intestine.
10. The liver, its structure, topography, blood supply, innervation.
11. The gallbladder, bile ducts, their structure, topography, blood supply, innervation.
12. Pancreas.

13. The large intestine, its structure, departments, topography.
14. Cecum, appendix.
15. The colon, its parts, relation to the peritoneum.
16. The rectum.
17. Topography of the peritoneum in the upper floor of the abdominal cavity.
18. Bags, their walls and connections. Little Dude.
19. Topography of the peritoneum in the lower floor of the abdominal cavity.
20. The external nose, the nasal cavity, its divisions.
21. Larynx: general plan of structure, topography, blood supply, innervation.
22. The larynx cartilage, their connections. Muscles of the larynx. The relief of the inner surface.
23. Trachea and major bronchi, their structure, blood supply, innervation.
24. Lungs, their external and internal structure, x-ray image.
25. Segmental structure of lungs.
26. Structure and topography of lung roots.
27. Pleura. Pleural cavity, sinuses.
28. Medium, its departments, organs.
29. Kidneys, their membranes, fixation apparatus, topography, x-ray. Adrenal glands.
30. Kidneys, internal structure, blood supply, innervation. Developmental anomalies.
31. Urinary tract, bladder, urethra, its sex differences.
32. Testicle, testicular appendix, shell.
33. The family cord.
34. Prostate, seminal vesicles.
35. External male genitalia.
36. Muscles and fascia of the male perineum.
37. The uterus, its structure, topography, blood supply, innervation, relation to the peritoneum, ligamentous apparatus.
38. The fallopian tubes, ovaries, their structure, topography, blood supply, innervation, relation to the peritoneum.
39. The vagina, its structure, blood supply, relation to the peritoneum.
40. External female genitalia.
41. Topography of the peritoneum in the cavity of the male and female pelvis.
42. Muscles and fascia of the female perineum.
43. Breast.
44. Classification of bodies of internal secretion. Bronchiogenic glands of internal secretion. Neurogenic glands of internal secretion.
45. Organs of the immune system, their classification. Central organs of the immune system. Peripheral organs of the immune system. The structure of the spleen.

Nervous System

1. Nervous system, its departments, general plan of structure, value.

2. Spinal cord, its external and internal structure, blood supply. Age features of the topography of the spinal cord.
3. Development of the brain, the formation of departments.
4. Furrows and convolutions of the upper-lateral surface of the hemispheres.
5. Furrows and convolutions of the medial and basal surfaces of the hemispheres.
6. Gray and white matter of the cerebellum.
7. Lateral ventricles of the brain, their vascular plexuses, ways of outflow of cerebrospinal fluid.
8. The olfactory brain, its components.
9. The brain, its departments and structures. III brain ventricle, its conjunction.
10. The middle brain. Brain plumbing.
11. The hindbrain. The cerebellum, its structure, nuclei, legs, bridge, its nuclei.
12. Rhombus fossa, its relief, projection of the cranial nerve nuclei.
13. The medulla oblongata, its external and internal structure, nuclei. IV ventricle of the brain, its walls of communication.
14. The leading pathways of the CNS, their anatomical and physiological classification.
15. Afferent and efferent leading pathways of the spinal cord and brain.
16. Brain and spinal cord, interbolic spaces.
17. W, IV, VI pairs of cranial nerves.
18. V pair of cranial nerves: branches, places of exit, topography.
19. VII pair of cranial nerves: place of exit, topography of branches.
20. VIII pair of cranial nerves.
21. IX pair of cranial nerves.
22. X pair of cranial nerves.
23. XI, XII pairs of cranial nerves.
24. Innervation of the scalp and neck.
25. Spinal nerves, their formation, branches.
26. Posterior branches of spinal nerves.
27. Cervical plexus, its formation, branches.
28. Brachial plexus, its formation, parts, short branches.
29. Subclavian part of the brachial plexus, bundles, and their branches, the formation of the median nerve.
30. The branches of the posterior bundle of the subclavian part of the shoulder plexus.
31. Branches of a median bundle of the subclavian part of the humeral plexus.
32. Branches of the lateral bundle of the subclavian part of the shoulder plexus.
33. Innervation of the upper extremity skin.
34. Intercostal nerves, areas of their innervation.
35. Lumbar plexus, its formation, branches.
36. Sacral plexus, its formation, branches.
37. The gluteal nerve, its formation, topography, branches.
38. Innervation of the skin of the trunk.
39. Innervation of the lower extremity skin.

40. Vegetative part of nervous system.
41. Parasympathetic part of nervous system.
42. Cute trunk, its formation, parts, nerves.
43. Vegetative plexus of the chest and abdomen.
44. Organ of sense of smell, And pair of cranial nerves.
45. The structure of the eyeball.
46. Auxiliary apparatus of the organ of vision.
47. Retina, the leading ways of the visual analyzer.
48. Outer ear and middle ear.
49. The inner ear, its structure. The leading paths of the auditory analyzer

3rd semester (exam)
Cardiovascular system
1. The heart, its structure, chambers, valves.
2. The heart, the structure of its walls, the conducting system, innervation.
3. The heart, its topography, blood supply.
4. Pericardium, its structure, topography, blood supply, innervation.
5. Small blood vessels.
6. Vascular blood vessels.
7. Aorta, its departments. Branches of the ascending part and the aortic arch.
8. Common and external carotid arteries, their topography, branches.
9. Anterior branches of the external carotid artery.
10. Medial and posterior branches of the external carotid artery.
11. The terminal branches of the external carotid artery.
12. Internal carotid artery, features of its topography, branches.
13. Ocular artery, its branches.
14. Subclavian artery, its topography, branches.
15. Vertebral artery, features of its topography; blood supply to the brain.
16. The Willis circle, its formation.
17. The humeral artery, its topography, branches.
18. The axillary artery, its topography, branches.
19. Elbow artery, its topography, branches.
20. The radial artery.
21. Arterial elbow mesh.
22. Arteries of a brush, features of blood supply of fingers.
23. Thoracic aorta, its topography, branches.
24. Abdominal aorta, its topography, parietal and visceral branches.
25. Abdominal aorta. Odd Visceral Branches.
26. Blood supply to the small intestine.
27. Blood supply to the colon.
28. Features of fetal blood supply.
29. General and external iliac arteries, their branches.
30. Internal iliac artery, its topography, branches.
31. The femoral artery, its topography, branches.

32. The popliteal artery.
33. Shin arteries.
34. Foot arteries.
35. Upper vena cava, its formation, tributaries.
36. Odd and semidimensional veins.
37. Shoulder veins, their formation. Ways of outflow of blood from the head, neck.
38. Internal jugular vein, its intracranial and extra-cranial tributaries.
39. Superficial and deep veins of the upper extremity.
40. The inferior vena cava, its formation, tributaries, anastomoses.
41. The portal vein, its formation, tributaries, topography.
42. Port-forging anastomoses.
43. Coffee-coffee anastomoses.
44. Superficial and deep veins of the lower extremity, their topography.
45. Lymphatic system. The general plan of structure. Lymphatic vessels and trunks.
46. Breast lymphatic duct, its formation and tributaries.
47. Right lymphatic duct, its main tributaries.
48. Lymph node, structure, function, vessels. Classification of lymph nodes.
49. Lymphatic vessels and regional lymph nodes.

6. Criteria of assistementes.

№	Type of activity (task)	The maximum summary
1	Certification	120
3	Exam	80
	Total	**200**

Criteria for evaluating tasks to achieve the maximum number of points

According to NAME (National Higher Education Quality Assurance Agency) PND (applied scientific research - number of practical classes per semester) + 1 PMC (final module control - ticket, which includes 4 questions)

I semester is 49 The result of the discipline +1 The result of the discipline
The result of the discipline min 60 points (60/49=1,2)
The result of the discipline max 120 points (120/49=2,4)
Final modular control min 60 points (60/4=15)
Final modular control max 80 points (80/4=20)

II semester is 39 The result of the discipline +1 The result of the discipline
The result of the discipline min 60 points (60/39=1,5)
The result of the discipline max 120 points (120/39=3,0)

Final modular control min 60 points (60/4=15)
The result of the discipline max 80 points (80/4=20)

III semester is 24 The result of the discipline +1 The result of the discipline
The result of the discipline min 60 points (60/24=2,5)
The result of the discipline max 120 points (120/24=5)
Final modular control min 60 points (60/4=15)
Final modular control max 80 points (80/4=20)

The maximum number of points in the discipline "human anatomy" is 200.

Final examination (credit)

Summary	Mark ECTS	Criteria of assistments	
		exam	credit
180-200	A	exellent	Pass credit
160-179	B	Very good	
150-159	C	good	
130-149	D	satisfection	
120-129	E	sufficient	
70-119	FX	unsatisfactory, with reassembly	
1-69	F	unsatisfactory, with compulsory repeat course	Didn`t pass credit

The number of points from the discipline, which is accrued to students, is converted into a 4-point scale as follows:

Mark ECTS	**Mark on a 4-point scale**
A	**«5»**
B, C	**«4»**
D, E	**«3»**
FX, F	**«2»**

Grade A - 180-200 points (excellent) - Student correctly answered 90-100% of A-format tests. Correctly, clearly and logically and completely answers to all standardized questions of the current topic, knows well the material of the previous topics (initial knowledge level), answers on questions of the lecture course and questions on independent work. Properly demonstrates the drug (knowledge of practical skills), correctly uses Latin terms. Makes a generalization of the material, complements his knowledge of additional literature. He wrote down in the dictionary all Latin terms and their equivalents in the Ukrainian language by topic of study. Completed all the tasks that are provided by methodical development during the student's independent work. Wrote an abstract on a proposed topic or self-made anatomical drug (individual work).

Grade B - 160-179 (very good) - Student correctly answered 80-70% of B format tests. Correctly, sometimes with explanatory questions, answers standardized questions of the current topic, knows the material of previous topics (initial knowledge level), answers questions of the lecture course and questions on independent work. Properly demonstrates the drug (knowledge of practical skills). The student uses the Latin terms correctly. He wrote down in the dictionary all Latin terms and their equivalents in the Ukrainian language by topic of study. Completed all the tasks that are provided by methodical development during the student's independent work.

Grade C - 150-159 (good) The student answered 70-60% of the C-format tests correctly. The student has a good knowledge of the material, demonstrates anatomical formations on the preparations, but is not sure of the accuracy of the answer. He does not fully answer the additional questions, but has sufficient lecture material to assist him in the interview. During demonstration on drugs, the student is well-oriented, but makes mistakes.

Grade D - 130-149 (satisfactory) - Student correctly answered 60 -50% of the D-format tests. Incomplete, using explanatory questions, answers standardized questions of the current topic, questions from the material of previous topics (baseline), inaccurate and incomplete answers to the questions of the lecture course and questions on independent work. Can not independently build a clear, logical answer. During the answer and demonstration of the drug (knowledge of practical skills) the student makes minor mistakes. The student uses Latin terms with mistakes, or does not fully know Latin terms from the topic of current occupation and previous classes. I wrote down in the dictionary not entirely Latin terms and their equivalents in the Ukrainian language on the topic of the lesson. Completed not completely the tasks that are provided by methodical development during the student's independent work.

Grade E 120-129 (sufficient) - Student answered less than 50% of F. tests. The student is guided in the overall structure of the human body, but answers the questions of the current topic insufficiently, incompletely, cannot construct a logical answer, does not answer additional questions, does not understand the content of the material, does not know questions from the material of the previous topics (initial level of knowledge), answers some questions of the lecture course and questions on independent work. During the response and demonstration of the drug (knowledge of practical skills) the student makes significant mistakes.

Grade FX 70-119 (unsatisfactory, with reassembly) -exposed to students who have earned a minimum score for their current academic activities but who have not enrolled in the total module control. These students are entitled to reassignment of the final module control. Reassembly of the final module control is allowed no more than 2 times.

Grade F 1-69 (unsatisfactory, with compulsory repeat course) - is given to students upon completion of the course who did not complete the curriculum of at least one module, or attended all of the module lessons but did not score a minimum score for the current educational activities and are not allowed to

compile the final module control. These students are entitled to re-study the relevant module. The decision is made by the management of the university in accordance with the normative documents approved in the prescribed manner.

7. Recommended sources of information

7.1. Basic:

1.Anatomy of the person: a textbook: in 3 volumes. Golovatsky, V.G. Cherkasov, M.R. Sapin and [others] - Ed. 3rd edited, Vinnytsia: New Book, 2015. - 376 p. : il.
Human anatomy: a textbook: in 3 volumes. Golovatsky, V.G. Cherkasov, M.R. Sapin and [others] - Ed. 3rd edited - Vinnytsia: New Book, 2015. –456 p. : il.
Human anatomy: a textbook: in 3 volumes. Golovatsky, V.G. Cherkasov, M.R. Sapin and [others] - Ed. 3rd edited, Vinnytsia: New Book, 2015. - 368 p. : il.
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7.3. Information resources

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