



INTERNATIONAL EUROPEAN UNIVERSITY

**EDUCATIONAL AND RESEARCH INSTITUTE
"EUROPEAN MEDICAL SCHOOL"**

**Department of Fundamental, Medical and Preventive
Disciplines**

APPROVED by
The Scientific and Methodical Council of the
University, protocol dd. August 29, 2023 No. 7
Deputy Chair of SMC *O. Lisnichuk* O. LISNICHUK

**WORKING PROGRAM OF THE ACADEMIC DISCIPLINE:
HUMAN ANATOMY**

to train students of the second (Master's) level
(full-time mode of study)

Knowledge area 22 "Health care"

Specialty 222 "Medicine"

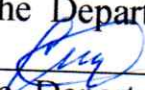

Educational program: Medicine

Discipline status: Compulsory

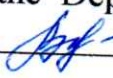
Kyiv – 2023

The working program of the **Human Anatomy** academic disciplines is based on the Medicine educational and professional program for the second (Master) level of the 222 Medicine specialty approved by the University Academic Council on May 30, 2023, protocol №4.

PROGRAM DEVELOPER:

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The working program of the academic disciplines is reviewed and approved by the Department of Fundamental, Medical and Preventive Disciplines, protocol No. 1 dd. August 25, 2023.

Head of the Department of Fundamental, Medical and Preventive Disciplines, PhD in biology, Associate Professor  Victoria KOVALENKO

The program is reviewed and approved by the Academic Council of the European Medical School, protocol No. 1 dd. August 29, 2023.

Chair of the Academic Council
of the European Medical School
Ph.D in Medicine,
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INTRODUCTION

Program study educational disciplines "**Anatomy human**" composed in accordance to the Standard of higher education of the second (master's) level of training acquirers higher education educational Master's degree, field of knowledge 22 "Health care" specialty 222 "Medicine", educational and qualification level "master of medicine"

Description educational disciplines (Abstract)

Study disciplines "Anatomy human" for doctors represents by myself a classical model of a university course adapted to the needs of medicine, which provides acquisition by each a student of knowledge in the world natural and scientific ideas about the structure and functions of the human body as a whole, the ability to use the acquired knowledge during further study of other fundamental sciences of medicine and practical activity of the doctor.

The discipline program is structured into 5 sections:

Section 1. Anatomy musculoskeletal system.

Chapter 2. Splanchnology. Anatomy of organs of the immune and endocrine systems. Section 3. Central nervous system. Sense organs.

Section 4. Craniocerebral nerve. Heart. vessels, nerve and lymphatic vessels heads and neck

Section 5. Blood vessels and lymphatic vessels body and limbs Autonomous and peripheral (spinal nerves) nervous systems.

Informative description primary disciplines

Name indicators	Field of knowledge, direction training, educational - qualifying level	Characteristic educational disciplines	
		daytime form teaching	
Number of credits – 14,0	Branch of knowledge 22 "PROTECTIONHEALTH"	<u>Normative</u>	
	Direction preparation "Medicine"		
Sections – 5	Specialty: 222 "Medicine"	Year preparation	
Content sections – 18		1st	
Individual scientifically-research task		Semester	
the total number of hours - 420		I	II
weekly load: classrooms I semester - 5 hours classrooms II semester - 9 hours		Lectures	
		32 hours	32 hours
	Practical		
	48 hours	114 hours	
	Independent work		
	98 hours	96 hours	
	Kind control:		
	Test	Exam	

subject study educational disciplines is form and structure body and him parts

due with development and function.

Interdisciplinary connections: topographic anatomy and operative surgery, histology, normal physiology, surgery, therapy, radiology, neurology, dentistry and others

1. Goal and task educational disciplines

1.1. The purpose of teaching the academic discipline "Normal Anatomy" follows from the goals educational and professional training program for graduates of a higher medical educational institution and are determined content those system of knowledge and skill by which should master doctor- specialist. The knowledge that students receive from the academic discipline "Normal Anatomy" is basic for the block of disciplines that provide natural and scientific (PN block) and professional - practical (PP block) preparation

1.2. The main ones tasks study disciplines "Normal anatomy" is:

- Analyze information about the structure of the human body, the systems that make it up, bodies and fabrics
- Demonstrate possession moral and ethical principles of attitude towards living things a person and her bodies as an object anatomical and clinical research.
- Interpret patterns of prenatal and early postnatal development bodies human options variability bodies defects development
- Interpret gender, age and individual characteristics of the structure of the body a person
- Explain the patterns of development and peculiarities of the structure of organs and systems a person on macro - and microscopic levels
- Predict the interdependence and unity of structures and functions of human organs variability under the influence of environmental factors; determine topographical and anatomical relationship bodies and systems a person
- Determine influence social conditions and labor on development and structure body a person

1.3 Competences and the results teaching, formation whose helps discipline (interrelationship with the normative content of the training of higher education applicants, formulated in terms results teaching in Higher standards education).

According to with requirements Standard higher education discipline provides acquisition of competencies by students :

general competence (ZK)	
ZK 1.	Ability to abstract thinking, analysis and synthesis.
ZK 2.	Ability to learn and master modern knowledge.
ZK 3.	Ability to apply knowledge in practical situations.
ZK 4.	Knowledge and understanding of the subject area and understanding of professional activity
ZK 5.	Ability to adapt and act in a new situation
ZK 6.	Ability to make informed decisions
ZK 7.	Ability to work in a team
ZK 8.	Ability to interpersonal interaction
ZK 9	Ability to communicate in a foreign language.

ZK 10.	Ability to use information and communication technologies
ZK 11.	Ability to search, process and analyze information from
ZK 12	Determination and persistence of delivered tasks and taken responsibilities
Professionals competence (FC)	
FC 1.	The ability to collect medical information about the patient and analyze clinical data
FC 11.	Ability to solve medical problems in new or unfamiliar environments in the presence of incomplete or limited information, taking into account aspects of social and ethical responsibility.
FC 24	Adherence to ethical principles when working with patients and laboratory animals
FC 25	Adherence to professional and academic integrity, to be responsible for the reliability of the obtained scientific results
Software the results teaching (PRN)	
PRN 1.	Have thorough knowledge of the structure of professional activity. Be able to carry out professional activities that require updating and integration of knowledge. To be responsible for professional development, the ability for further professional training with a high level of autonomy
PRN 2.	Understanding and knowledge of basic and clinical biomedical sciences, on level sufficient for solving professional tasks in the field of health care
PRN 3	Specialized conceptual knowledge, which includes scientific achievements in the field of health care and is the basis for conducting research, critical understanding of problems in the field of medicine and related interdisciplinary problems.
PRN 4	Identify and identify leading clinical symptoms and syndromes (according to list 1); according to standard methods, using preliminary data of the patient's history, data of the patient's examination, knowledge about the person, his organs and systems, establish a preliminary clinical diagnosis of the disease (according to list 2). .
PRN 21.	to search necessary information in professional literature and databases data others sources , analyze , evaluate and apply this one information .
PRN 22	Apply modern digital technologies, specialized software, statistical methods of data analysis to solve complex healthcare problems

The results teaching: knowledge, which students receive from educational disciplines

"Normal anatomy", are basic for the block of disciplines that provide natural and scientific (bloc Mon) and professional -practical (bloc PP) training.

Integrative final program learning outcomes, the formation of which is facilitated by training discipline: skill analyze information about structure bodies human systems, what him make up organs and tissues; demonstrate mastery of moral and ethical principles of attitude towards living things a person and his body as an object of anatomical and clinical research; to interpret regularities prenatal and early postnatal development bodies human options variability bodies defects development; interpret sexual, aged and individual features structures body a person; explain regularities development and features structures bodies and systems a person on macro and microscopic levels; predict the interdependence and unity of structures and functions bodies a person their variability under influence ecological factors; to determine topographical and anatomical interrelationships of human organs and systems; determine the influence of social conditions and work on development and structure body a person

2. Informative amount educational disciplines

14 ECTS credits of 420 hours are assigned to the study of the academic discipline.

Contentful Chapter 1. *Introduction to anatomy Anatomy bones*

Topic 1. Subject and tasks anatomy Methods research in anatomy The main ones modern directions of development of anatomy. Anatomical nomenclature. Axes and planes. Bone as an organ. Classification bones Development bones Anatomy bones body

Human anatomy is the science of the shape and structure of the body and its parts in connection with their development and function Anatomy provides systemic description shapes, structures and topography parts and bodies bodies with taking into account their aged, sexual and individual features.

The main modern trends in the development of anatomy – age anatomy, comparative anatomy, plastic anatomy, anthropology, ecological anatomy and others

The main ones methods research in anatomy – visual research, anthropometric research, preparation, macro -microscopic research, microscopic research. Modern methods research in anatomy: X-ray methods, computer tomography, magnetic resonance tomography (MRI), ultrasonic research (ultrasound), endoscopy and others

Concept about International anatomical nomenclature her value for study anatomy and unification study natural sciences and clinical discipline The main ones anatomical terms, which reveal topography anatomical objects, and their the main ones characteristics.

Planes (arrow (sagittal), frontal (frontal), horizontal) and axis (vertical, frontal, arrow), their characteristics, using for description bones and their parts

General information about the skeleton. Development of bones (in ontogenesis). Primary and secondary bones. Classification bones Bone as authority. Compact and spongy bone substances, their structure Chemical composition, physical and mechanical properties of bone. The structure of the tubular bone: its parts. Features structures bones in children's youthful, mature summer and to an old man of age Bones in x-ray images Influence social factors and ecology on development and structure skeleton Bones torso: vertebrae, ribs, chest Principle segmentation in structural axial skeleton General characteristic spinal pillar General plan structures vertebrae Features structures of cervical, thoracic, lumbar vertebrae, sacrum, coccyx. Age and sexual features structures vertebrae Influence social and ecological factors on structure vertebrae Disadvantages development vertebrae Classification ribs _ Building ribs and sternum Age and sexual features structures sternum Influence social and environmental factors on structure ribs and sternum

Topic 2. Bones brain skulls: Lobova, parietal, occipital, Lattice bones

Development of the cerebral skull. The structure of the frontal, occipital, parietal, ethmoid bones. Location, the main ones parts, anatomical creations their practical value, relation to foundations skull, side and face norms skull

Topic 3. wedge-shaped, temporal bone. Channels temporal bones Location, the main ones parts, anatomical creations their practical value, relation to foundations skulls, lateral and facial norms skull Practical value channels temporal and wedge-shaped bones

Topic 4. Bones facial skull Facial norm skulls: ocular pit, nasal cavity. Building lower jaws, upper jaws, zygomatic, nasal, palatal, lacrimal, hyoid bone, blade, lower nasal concha. Features of the structure and location bones Ochna pit, bone nasal cavity, Formation walls ocular dimples and bone nasal cavity, their connection with recesses on skull _

Topic 5. Ch erep in as a whole Basis skull Lateral norm skulls: dimples Skull development in ontogeny. Cerebral and facial parts of the skull.. Vault of the skull, external and internal foundations skull front, average and back cranial dimples, temporal, subtemporal, wing-palatine dimples Their walls and combination. Age and sexual features structures skull Options and developmental abnormalities skull X-ray anatomy of the skull.

Topic 6. Bones upper limbs

Upper extremity: its divisions. Bones of the upper limb: divisions. Upper girdle bones limbs: clavicle, scapula; their structure Bones of the free upper limb: humerus, bones forearms and hands, their structure. Development of the bones of the upper limb in ontogeny. Options and anomalies development bones upper limb

Topic 7. Bones lower limbs

Lower limb: her departments Bones lower limbs: departments Bones belts lower limbs: Kulshova bone; her structure parts hip bones, their structure Bones free lowerlimbs: femur, leg bones, feet; their

structure.. Development of the bones of the lower limb in ontogenesis. Options and developmental anomalies bones of the lower limbs age, sexual features structures bones limbs Specific features structures bones upper and lower limbs, conditioned processes anthropogenesis. Influence sports, labour, social factors and ecological factors on structure bones of the upper and lower limbs

Contentful section 2 . connection bones

Topic 8. Introduction to arthrology. General arthrology. Classification connections between bones Anatomy continuous and intermittent connections between bones Development connections between bones in ontogenesis. connection between bones body and bones heads _

Kinds synarthroses : fibrous connection (syndesmoses) – membranes, ligaments, sutures, crown; cartilaginous joints (synchondroses) – permanent, temporary, symphysis. Diarthrosis (synovial joints, joints): definition, main elements joint, their characteristics. Additional components of joints. Classification of joints by structure, form articular surfaces, by function Simple, complex, complex and combined joints: their characteristics. Types of movements and their analysis (axis of movements, planes of movements). uniaxial, biaxial and multiaxial joints, their species characteristic movements in to everyone species joint

Topic 9. Anatomy continuous and intermittent connections between bones Development connections between bones in ontogenesis. connection between bones body and bones heads _

Classification connections spinal pillar Syndesmoses spinal pillar: their characteristic and structure. Synchondroses of the spinal column: their characteristics and structure. Joints spinal pillar: mid atlanto -axial joint, side atlanto -axial joint, arcuate joints, lumbosacral joint, sacrococcygeal joint: their structure. Spinal column as a whole. Age and gender characteristics of the spine as a whole. The influence of sports, work, social factors and ecological factors on ridge in as a whole

connection chest cages: syndesmoses , synchondrosis and joints (costal and vertebral joints, rib - transverse joints, sterno-costal joints): their characteristics and structure. Breast the cell as a whole, its structure. The influence of sports, work, social factors and environmental factors on structure chest in as a whole

connection skulls: classification. Syndesmoses skulls: seams, their species and characteristic. Synchondroses of the skull: their types, characteristics, age characteristics. Skull joints: temporal - mandibular joint and atlanto -occipital joint: their structure. X-ray anatomy temporally - mandibular joint Age features connection skulls: tibia, building, terms ossification

Topic 10. connection bones upper limbs

connection upper limbs connection belts upper limbs: syndesmoses belts of the upper limb and the joints of the girdle of the upper limb (upper arm - clavicle joint and sternum - clavicle joint), their structure. Connection of the free upper limb: shoulder joint, elbow joint, connection bones forearm, carpal joint, joints brushes

Topic 11. connection bones lower limbs

Connection of the lower limb. Connections of the pelvic girdle : syndesmoses , pubic symphysis, sacral -iliac joint. Pelvis in overall: him building, the main ones dimensions age, sexual, individual features pelvis connection free lower limbs: hip joint, knee joint, connection of bones of the lower leg, supracalcaneal -tibia joint, joints of the foot. Vault the feet

X-ray anatomy connections bones upper and lower ones limbs Influence sports, labour, social factors and ecological factors on structure connections bones upper and lower ones limbs Practical skills and generalization material with anatomy bones and their connections Content section 2 "Connection of bones".

Contentful section 3. Anatomy muscles

Topic 12. Muscle as authority. Classification muscles Development skeletal muscles Muscles back Anatomy muscles and fascia chest

Muscle as authority – definition. tendons, aponeurosis Auxiliary devices muscles: fascia, synovial sheaths, synovial bags, sesamoid bones, tendon arch, muscle block. Anatomical and physiological cross sections muscles: the main ones data about strength and work muscles; concept about levers Beginning and muscle attachment: their functional characteristic.

Classification muscles: by development, topography, form, sizes, direction muscular fibers,

function and others Development muscles in ontogenesis. Sources development muscles torso, heads, neck, upper and lower ones limbs

Muscles backs: superficial and deep, their characteristic. Thoracic-lumbar fascia

Classification of trunk muscles by topography, development and shape. Segmental structure of muscles body

Muscles chest cages: superficial and deep, their characteristic. Breast fascia, intrathoracic fascia
Diaphragm – definition. parts diaphragms, holes, their contents, triangles

Topic 14 . *Anatomy muscles and fascia stomach*

Abdominal muscles: muscles of the front, side and back walls of the abdomen, their characteristics. Fascia stomach White line. Navel ring. Abdominal press Inguinal canal. Rectus sheath stomach

Topic 15 . *Anatomy muscles and fascia heads Anatomy muscles and fascia neck Topography neck*

Muscles heads: classification. Chewable muscles, their characteristic. Mimic muscles, their abolition from the rest skeletal muscles. Classification facial muscles, their characteristic. Fascia heads

Neck muscles: classification. Superficial, medium and deep muscles of the neck, their characteristics. Neck fascia: anatomical classification and anatomical topographical classification. Topography of the neck: areas, triangles, spaces

Topic 16 . *Muscles upper limbs Fascia and topography upper limbs*

Muscles upper limbs: classification. Muscles belts upper limbs, their characteristic. Muscles shoulder: classification, their characteristic. Muscles forearm: classification, their characteristic. Muscles brushes: classification, their characteristic.

Fascia of the upper limb. Axillary fossa, axillary cavity, its topography, triangles, four-sided and three-sided openings. Shoulder - muscle channel. Furrows on the front surface of the shoulder. Ulnar fossa. Furrows on the front surface of the forearm. Bone-fibrous channels, holders flexor muscles, holders muscle boosters . Channels wrist, synovial sheath tendons flexor muscles. Synovial bags.

Topic 17 . *Muscles lower limbs Topography and fascia lower limbs*

Muscles of the lower limb: classification. Muscles of the girdle of the lower limb: classification, their characteristic. Muscles of the thigh: classification, their characteristics. Leg muscles: classification, their characteristic. Muscles feet: classification, their characteristic.

Fascia of the lower limb. Muscular and vascular bays, their topography and content. Femoral triangle. Furrows on the front surface of the thigh. Drive channel. Popliteal fossa. Channels lower legs: tibial -popliteal canal, upper and lower muscular-tibial canals. Furrows soles the feet Subcutaneous solution _ Femoral channel. Holders extensor muscles, holder muscle-flexors, holders of fibular muscles. Synovial bags and synovial sheaths of the lower muscles limbs mechanisms, what will support vault feet: passive (connections) and are active (muscles).

Topic 18. *Practical skills and generalization material with myology. Contentful section 3 "Anatomy muscles"*

age, sexual and individual features skeletal muscles Influence sports, labour, social factors and ecological factors on structure skeletal muscles, body and limbs

Contentful section 4. *Travna system*

Topic 19 . *Introduction to splanchnology. Classification internal bodies general regularities structures tubular bodies general regularities structures parenchymatous bodies General anatomy May systems Anatomy oral cavities and her bodies Anatomy teeth Maxillary tooth system*

Classification ofal: tubular and parenchymatous. General plan structures walls tubular organs: mucous membrane, muscle membrane, external membrane. Characteristic of each shell. Organ-specific features of the structure of the mucous membrane depending on the function body _ Serous membrane: options for the relationship of organs to the peritoneum. General patterns structures parenchymatous bodies Glands: their classification, general principles structures, functions.

Travna system: bodies, functions. Development oral cavities and her bodies Development throat esophagus, stomach, thin and thick intestines Development liver and pancreatic glands Primary and secondary cavities bodies Sources development serous shell Development peritoneum Structural mechanisms of malformations of the oral cavity and its organs. Anomalies and variants of the

development of the throat, esophagus, stomach, small and large intestines, liver, pancreas glands

Oral cavity: its parts. The walls of the lining of the mouth and the oral cavity itself, their combination. Palate: solid palate, soft the palate, their structure Tonsils Tongue: parts Features structures mucous shell, muscles tongue Drooling glands: classification, their development. Small drooling glands: classification, topography, structure Big ones drooling glands: topography, characteristic, structure, classification.

Teeth Parts of the tooth. Crown surfaces. Periodont , periodontium. Gums. Permanent teeth: their formula, anatomical characteristic Each species teeth Deadlines cutting permanent teeth Dairy teeth: formula, features structures, terms cutting X-ray anatomy teeth Bites Development of teeth. Anomalies and options development teeth

Topic 20. *Anatomy pharynx, esophagus Anatomy stomach _ Plots front abdominal walls*

Pharynx, her topography, parts, combination. Pharynx, him limits Lymphatic (lymphoid) ring pharynx Building walls pharynx: mucous membrane shell, pharyngeal - basic fascia, muscles pharynx, external shell. Esophagus: topography, parts, structure walls Narrowing esophagus X-ray anatomy esophagus

Stomach: topography, parts stomach Building walls stomach: features structures mucous membrane (relief, glands), muscle membrane and serous membrane. X-ray and gastroscopic characteristics of the mucous membrane Stomach relation to the peritoneum Connections stomach Variants of the shape of the stomach: anatomical (on a corpse) and X-ray (in a living person). The shape of the stomach depends on the types of body structure. Age features of topography and structure stomach

Topic 21. *Anatomy thin and thick intestines*

Small intestine, its divisions. Duodenum: parts, topography, variants of its form and position. X-ray anatomy duodenal intestines Topography mesenteric parts thin intestines: jejunum and ileum. The structure of the wall of the small intestine. The structure of the mucous membrane: intestinal villi, glands, folds, lymphatic (lymphoid) nodules Features structures mucous shells thin intestines in her different departments Building muscular shells Relation to peritoneum Each department thin intestines Age features of the structure thin intestines

Colon: departments. The structure of the colon wall: mucous membrane (glands, folds, lymphatic (lymphoid) nodules), muscular shell, serous shell. Relation to peritoneum Each department thick intestines Blind gut and vermiform process: topography, features structures Variants of the position of the appendix and its projection on the anterior abdomen the wall Colon: parts, folds, their topography, peculiarities of the structure of the mucous membrane and muscular shells Relation to peritoneum straight gut: parts, bend topography. Features of the topography of the rectum depending on gender. Features of the structure of the mucous membrane shell and muscle shell. Relation to peritoneum. Outlet channel: topography, features structures mucous membrane and muscular shell. Abductor muscles.

Age features structures thick intestines X-ray anatomy thick intestines Form and position departments colon in alive a person

Topic 22. *Liver, bilious bladder, pancreatic gland.*

Liver. Topography. External structure: edges, surface and their relief. Connections liver Relation to peritoneum. The internal structure of the liver: lobes, segments, lobules. Vessels liver, strange net liver Functions liver

Pathways of bile secretion. Gallbladder : topography, parts, wall structure, functions. Joint bilious strait: formation, topography.

Age features topography and structures liver Age features structures bile bubble

Pancreatic gland: parts, topography, building, functions. Canals pancreatic glands

Pancreatic islands Age features topography and structures pancreatic glands

Topic 23. *Anatomy peritoneum*

Peritoneum. Abdominal cavity, its contents. Peritoneal cavity, its contents. Pristinkova peritoneum, internal peritoneum: their characteristics. Variants of the relationship of internal organs to peritoneum Derived peritoneum: mesenteries, caps, ligaments, folds, their structure and functions. Derivatives peritoneal cavity: pouches (hepatic, pregastric, capsular – their walls, connections), sinuses, channels, nooks, crannies, depressions. Topography of the peritoneum in the pelvic cavity: sexual

features.

Topic 24. Practical skills and generalization of material on the anatomy of digestive organs systems. Content section 4. "Digestive system". Contentful section 5 . Respiratory system. Mediastinum

Topic 25. General anatomy respiratory systems. Embryogenesis respiratory systems. Anatomy bodies respiratory systems.

Respiratory system: organs, functions. Upper and lower respiratory tract. Development of organs respiratory systems in ontogenesis. Options and anomalies development bodies respiratory systems. External nose: parts, structure. Nasal cavity: parenchyma, nasal passages, paranasal sinuses. Functional parts of the nasal cavity. Nasal part of the pharynx. Age-related features of the nose cavities

Larynx. Topography. The structure of the larynx: cartilage, ligaments, joints, muscles. elastic cone, quadrilateral membrane. The cavity of the larynx: parts, their boundaries. Vocal folds, hairline folds Golosova cleft. Mechanisms voice formation . X-ray anatomy larynx, laryngoscopy .Age features larynx

Topic 26. Anatomy trachea, the main ones bronchi, lungs Pleura. Mediastinum.

Trachea: parts, topography, structure walls The main ones bronchi: topography, structure walls Bronchial tree. Age features trachea and main bronchi.

Lungs: topography, external structure. Gate of the lungs. The root of the lung and its components. Parts, segments, lobules of the lung. Acinus . Alveolar tree. Pulmonary circulatory system. X-ray anatomy trachea, bronchi, lungs. Age features of the lungs.

Pleura. Pristinkova pleura and her topographical parts Internal pleura. Pleural cavity: content, nooks and crannies, them functional value. Projection of the pleura on the chest wall cavities Mediastinum: definition, boundaries. Upper mediastinum. Front, middle and back mediastinum.

Contentful section 6 . Urine - sexual endocrine and immune systems

Topic 27. General anatomy of urinary organs. Embryogenesis of urinary organs. Anomalies and options development urinary bodies Building urinary bodies functions.

Kidney: topography of the right and left kidney . External structure of the kidney. Relationship of the kidney to peritoneum Kidney capsules. Fixing apparatus of the kidney. Topography of renal peduncle elements. Internal structure kidneys Segments kidneys Nephron - structural and functional unit kidneys Building blood systems kidneys, strange net kidneys Urinary ways Small renal calyces, large renal calyces, renal pelvis, wall structure, functions. X-ray anatomy ; aged features of topography and structure kidneys

Urethra: parts, topography, wall structure, function. Relation to peritoneum. Narrowing ureter

Urinary bladder: shape, external structure, parts. Features of topography in men and women women Building walls urinary bladder: features structures mucous shell, muscular shells Relation to the peritoneum (in depending on functional condition).

Female urethra. Male urethra. X-ray anatomy of the urinary tract (ureters, bladder, urethra). Age features of the bladder.

Topic 28. General anatomy sexual bodies Embryogenesis men's sexual bodies Options and developmental anomalies. Male genital anatomy bodies General female genital anatomy. Variants and anomalies of development women's genitals. Anatomy women's genitals.

Men's sexual organs: classification. Internal men's sexual bodies External male genitalia. Development of male genital organs in ontogenesis. Variants and anomalies development internal men's sexual bodies Options and anomalies development external men's sexual bodies Hermaphroditism.

Internal men's sexual bodies Testicle: topography, structure Hope _ Process dropping testicles Shells testicles Sperm bearing strait: parts, their topography, structure walls Family rope, him components Family vesicle: topography, building, functions. Sperm spraying strait. Predmihurova gland: topography, parts, building, functions. Bulbous and ureteric gland. Age features internal male sex bodies

External men's sexual bodies The gate Sexual member (rod), him structure

Male urethra: parts, their topography, structure walls

Female genital organs: classification. Development of female genital organs in ontogenesis.

Variants and anomalies of the development of internal female genital organs: ovaries, fallopian tubes, uterus, sheath. Options and developmental anomalies external women's genitals.

Internal female sexual bodies Ovary: topography, external building, internal structure, ligaments of the ovary, relation to the peritoneum, functions. Cyclic changes in the structure of the ovary. Age features of the structure of the ovary.

Matkova tube: topography, parts, structure walls, relation to peritoneum, functions.

Uterus: topography, form, parts, structure walls Connections uterus, relation to peritoneum, functions. Age characteristics structures uterus and variants of its position.

Vagina: vault, structure walls

X-ray anatomy internal women's sexual bodies

External female genitalia. Female pubic area: pubic elevation, large shy lips, small labia, pubic hair, pubic hair bulb, large pubic hair glands, small hedgerows glands, the clitoris Female urethra.

Perineum: definition, topography. Urogenital diaphragm: boundaries, muscles, fascia, sexual differences Pelvis diaphragm: limits, muscles, fascia . Sidnycho -othidnikova pit: limits, contents.

Topic 29. *General anatomy central and peripheral bodies immune systems.*

Immune system: functions. Classification of organs of the immune system by function. Development bodies immune system in embryogenesis.

Central bodies immune systems (primary lymphatic or lymphoid organs). Red bony brain. Yellow bony brain. Topography, building, functions. Age features of the bone marrow. Thymus : topography, structure , functions. Age features thymus _

Peripheral bodies immune systems (secondary lymphatic or lymphoid organs). Spleen: topography, structure, functions. Lymphatic (lymphoid) ring of the pharynx: tonsils, which him form their topography, building, functions. Lymphatic nodes: classification, building, functions. lonely lymphatic (lymphoid) nodules: topography, building, functions. Crowded lymphatic (lymphoid) nodes: topography, structure, functions. Accumulated lymphatic (lymphoid) nodules worm-shaped appendage: topography, building, functions. Age features structures peripheral organs of the immune system.

Topic 30. *Anatomy bodies endocrine systems.*

general principles structures endocrine bodies Structural definition concept "endocrine function". Structural mechanisms implementation actions hormones Classification endocrinebodies

Development of endocrine organs in embryogenesis. Features of functional activity endocrine organs in the prenatal period of human ontogenesis. Variants and malformations endocrine bodies

Thyroid gland: topography, structure, functions. Parathyroid gland: topography, structure, functions. Adrenal gland: structure, functions. Topography of the right and left adrenal glands glands Endocrine part of the pancreas: structure, functions. Pituitary gland: topography, parts, building, functions. Cone-shaped gland: topography, structure, functions.

Topic 31. *Practical skills and generalization material with anatomy entrails Contentful section 6. "Anatomy bodies genitourinary , endocrine and immune systems".*

Contentful section 7. *Anatomy central nervous system*

Topic 32 . *Introduction to the central nervous system. General principles of the structure of reflex arcs. Gray and white substance central nervous system Development central nervous system in ontogenesis. External and internal structure dorsal brain Brain development in embryogenesis. Anatomy of the medulla oblongata and bridge*

The leading role of the nervous system in the body; its significance for the integration of organs and systems bodies in only integral organism, in installation relationships body from external environment Classification nervous systems by topographical principle (on central nervous system and peripheral nervous system) and according to the anatomical and functional principle (on somatic nervous system and vegetative nervous system). General principle structures neuronMorphological and functional classification neurons Receptors, them classification. General plan of the structure of synapses. Reflex arcs. Gray matter of the central nervous system. Neuroglia . Principles spatial organizations gray substances central nervous system Nervous nodes white substance central nervous system Nervous fibers, nerve bundles, roots.

Development nervous systems in ontogenesis. Development dorsal brain in embryogenesis. Brain development in embryogenesis: stages of three and five brain vesicles and their derivatives. Anomalies development dorsal brain Anomalies development brain

Topography spinal cord, its limits External structure dorsal brain (surface, furrows, thickening). Segmental structure of the spinal cord. The ratio between the vertebrae and segments of the spinal cord (Shipo's rule). Internal structure of the spinal cord: central channel, gray and white substance. Building rear, lateral and front horns dorsal brain white substance:classification. The composition of the anterior, lateral and posterior cords of the spinal cord. Own segmental apparatus of the spinal cord. Spinal node. Front and back roots. Formation of the trunk spinal cord nerve _ Age structural features spinal cord

Oblong brain: boundaries, external structure. Internal structure: gray and white matter. Bridge: external structure Internal structure: gray and white matter.

Topic 33. *Anatomy cerebellum IV ventricle. Rhombus-shaped pit.*

Cerebellum: topography, external structure. Internal structure: gray and white matter. Storage legs cerebellum Walls cavities diamond-shaped brain, combination IV ventricle Rhomboid fossa: formation, boundaries, relief. Projection of cranial nerve nuclei on the surface diamond-shaped dimples

Topic 34. *Anatomy average brain Anatomy intermediate brain*

Midbrain, its parts. Roof: external structure; internal structure: gray and white substance. Legs brain, their parts, internal structure: gray and white substance. Plumbing brain

Intermediate brain: parts (dorsal – thalamic brain; ventral part – hypothalamus). Parts of the thalamic brain: thalamus, epithalamus , metathalamus . Thalamus: external structure Internal structure: nuclei and their functions. Epithalamus : parts. Pineal gland and its functions. Metathalamus : parts and their functions. Hypothalamus: its components. Pituitary. Cores hypothalamus, their functions. Hypothalamic-pituitary system. Third ventricle: walls, combination.

Topic 35. *Bark, her components parts, functions. Olfactory brain. Terminal brain. Relief raincoat Localization functions in Cory*

Derivatives of the forebrain: intermediate brain, terminal brain. Olfactory brain: parts, their components Lateral ventricles: parts, their topography, walls, connections.

Hemispheres of the terminal brain. Corpus callosum, vault, anterior commissure. Bark of the terminal brain: cyto - and myeloarchitectonics bark Robots V. O. Betsa . Relief hemispheres big brain: furrows and twists and turns Morphological foundations dynamic localization functions in Cory hemispheres finalbrain

Topic 36. *Basal core white substance hemispheres _ Lateral ventricles*

Basal kernels: topography, parts, functions. Associative fibers: classification, functions. Commissural fibers, their functions. Projection fibers: classification. Internal capsule: parts, topography of leading roads in each part. Age features of the structure of departments main brain

Topic 37. *Shells dorsal and main brain Formation and ways circulation spinal cord liquid Entrance 12 pairs of cranial nerves with brain*

Spinal cord sheaths . Intermembrane spaces and their contents. Meninges . Features of the structure of the dura mater of the brain. Processes of the dura mater of the head brain, their topography. The sinuses solid shells main brain Intermembranous spaces main brain and their contents. Formation and ways circulation of the spinal cord liquid

Topic 38 . *Rising leading ways central nervous systems. Descending leading ways*

Conductive ways - definition. Anatomical and functional classification of conducting pathways central nervous systems: associative ways (short and long), commissural paths, projection paths (ascending and descending). Ascending (afferent) conductive paths: exteroceptive , proprioceptive , interoceptive . Descending (efferent) conductive paths: pyramidal, extrapyramidal . Pyramid motor system (centers, leading ways). Extrapyramidal system (centers, leading ways).

Topic 39. *Practical skills and generalization of material on the anatomy of the central nervous system. Contentful section 7 "Anatomy of the CNS".*

Contentful section 8. *Organs flair*

Topic 40. *Anatomy sense organs .*

Anatomically functional characteristic bodies flair. Peripheral receivers , conductors and cortical

centers analyzers, their functional unity.

Ontogeny of the eye. Anomalies and variants of eye development. Topography, structure, functions. Eye apple. Shells of the eyeball: fibrous, vascular, internal (retina), their structure. Camera eyeball: front, back, their walls. Vitreous body, lens. Watery moisture: place formation, ways outflow Accommodation apparatus eye Additional bodies: eyelids eyebrows, conjunctiva, skeletal muscles eye apples, fascia ocular dimples Tearful apparatus and him components Conductive ways visual analyzer. Leading way pupillary reflex

Topic 41. *Anatomy ears.*

Ear. Development ears in ontogenesis. Anomalies ear development parts ears: external, middle and inner ear. External ear: parts, their structure. Middle ear: parts. Drumcavity: walls, contents. Auditory bones: their structure, joints, ligaments. Middle ear muscles. Connection of the tympanic cavity. Auditory tube: parts, structure. Inner ear, parts, topography. Bony labyrinth: prinos, semicircular canals, gyrus, their structure. Membranous maze: pistil, bag , semicircular ducts, curly strait, their structure Mechanism perception and ways sound conduction Conductive paths of hearing and balance

Topic 42. *Authority taste Authority sense of smell Conductive ways taste and sense of smell Skin, her derivatives*

Conductive ways skin analyzer.

Authority sense of smell Nyukhova part mucous shells nose Conductive ways olfactory analyzer. Authority taste Tasty papillae tongue, their topography. Conductive ways tasteful analyzer. Skin: functions. Varieties skin sensitivity Breast (dairy) gland.

Topic 43. *Practical skills and generalization material with anatomy bodies flair.*

Contentful section 8 "Organs flair".

Contentful section 9. *Cranial nerve*

Topic 44. *Classification cranial nerves General anatomy vegetative nodes heads _ I, II, III, IV, VI, VIII cranial pairs nerves*

General characteristics of cranial nerves. Common features and differences in the structure of cranial and spinal nerves. Classification of cranial nerves by function (motor, sensitive, mixed). Classification of cranial nerves by origin. Development of cranial nerves in connection with organs senses (I, II, VIII pairs), myotomes of the main somites (III, IV, VI, XII pairs), gill arches (V, VII, IX, X, XI pairs). Differences in the structure of cranial nerves derived from the brain (I, II pairs) from the rest of the cranial nerves. General plan of the structure of motor, sensitive and mixed cranial nerves General plan of the structure of vegetative nodes of the head. IV, VI pairs: their cores, exit of nerves from brain, from the skull, areas of innervation. III pair of cranial nerves: nuclei, exit of the nerve from the brain, from skulls, branches, storage their fibers, areas innervation, connections from vegetative node heads (ciliated node). Anatomy VIII couples: sensitive parts knots, topography.

Topic 45. *V couple cranial nerves VII couple cranial nerves Vegetative nodes heads* Anatomy triple nerve : nuclei, their localization, Entrance nerve from brain, from skulls, trigeminal node, sensitive and motor roots. Branches of the V pair: composition of fibers, exit from the skull, areas innervation, connections with vegetative ones nodes of the head. VII pair of cranial nerves: nuclei, topography, branches, composition of their fibers, areas of innervation. Connections branches intermediate nerve from vegetative nodes heads (wing-palatine, submandibular , sublingual).

Topic 46. *THEM X, XI, XII couples cranial nerves*

IX pair: nuclei, exit of the nerve from the brain, from the skull, branches, the composition of their fibers, areas of innervation, connections from vegetative node heads (by ear node). X couple: nuclei, sensitive knots, Entrance nerve from the brain, from the skull, branches, areas of innervation. XI pair: nuclei, exit of the nerve from the brain, from the skull, areas innervation. XII couple: core, Entrance nerve from brain, from skulls, areas innervation. Vegetativenodes heads (wing-palatine, ciliary, submandibular , sublingual, otic).

Topic 47. *Spinal cord nerve. neck plexus.*

Formation of spinal nerves. Front and back roots. White and gray connecting branches. Formation gossip neck plexus: muscular branches, skin branches, diaphragmatic nerve, zones innervation.

Topic 48. *Practical skills and generalization of material on the anatomy of cranial nerves,*

cervical plexus. Contentful section 9 "Skull's nerve". Remedial occupation.

Contentful section 10. Vessels heads and neck

Topic 49. Aorta. Branches of the aortic arch. Common and external carotid arteries. Arterial vessels heads and neck

Aorta, parts of the aorta. Aortic arch and its branches. Common carotid artery: topography, branches. Features right and left general sleep arteries External sleep artery: topography, classification branches Branches external sleep arteries: topography, areas blood supply

Topic 50. Internal sleep and subclavian arteries

Internal sleep artery: parts, their topography. Branches internal sleep arteries: topography, areas blood supply Subclavian artery: parts, their topography. Features right and left subclavian arteries Branches subclavian arteries: topography, areas blood supply Blood supply main and dorsal brain Arterial circle brain Intersystem arterial anastomoses in area head and neck.

Topic 51. Venous vessels heads and neck Lymphatic nodes and vessels heads and neck

Internal jugular vein: formation, topography, classification tributary _ Intracranial and extracranial tributaries of the internal jugular vein. Pterygoid venous plexus: topography, formation. Anastomoses between intracranial and extracranial tributaries of the internal jugular vein. External jugular vein: formation, topography, tributaries. Front jugular vein: formation, topography, tributaries Jugular venous arc: topography, formation. Shoulder - main vein: formation (roots), topography, tributaries. The top is hollow vein: formation (roots), topography, tributaries.

Thoracic duct: roots, topography, tributaries, place of confluence with the venous system. rights lymphatic channel: roots, topography, place confluence in venous system

Jugular trunks: formation, topography, areas collection lymph, confluence to lymphatic channel _ Lymphatic nodes of the head: classification, topography, areas of lymph collection, ways of lymph outflow. Lymphatic neck knots: classification, topography, areas collection lymph, outflow paths lymph

Topic 52. Vascularization and innervation bodies heads and neck Contentful section 10 "Vessels heads and neck".

Vascularization (arterial blood supply venous and lymphatic outflow) and innervation organs of the head and neck: mucous membrane of the oral cavity, soft palate, tongue, upper and lower teeth, pharynx, palatine tonsils, parotid gland, mandibular gland, sublingual glands, mucous shells nasal cavity, pharynx, larynx, thyroid glands, eyeball, lacrimal gland, skeletal muscles eyeball, external ears, average ears, internal ears, cerebrum, cerebellum, trunk brain, solid shells main brain, chewing muscles, muscles face (mimic) muscles, muscles neck, skin of the face, temporal -mandibular joint

Contentful section 11. Anatomy hearts Vessels and nerves body

Topic 53 . Introduction to cardiovascular systems. Anatomy hearts Big circle and small circle blood circulation Fetal circulation. Heart development in embryogenesis. Anomalies and variants of development hearts _ Anatomy hearts (II): structure walls hearts, blood supply hearts, pericardium.

Projection hearts on the front the wall chest cavities

General principles of the structure and function of the cardiovascular system. Components of vascular parts cardiovascular systems: arteries, veins vessels hemomicrocirculatory channels Lymphatic vessels, their principles structures, functions.

Age anatomy of the heart. Large circle and small circle of blood circulation. Fetal circulation. Stages development hearts in embryogenesis a person Options and anomalies development hearts Structural mechanisms development anomaly hearts

Topography of the heart. Shape, position of the heart. External structure of the heart. Chambers of the heart: them structure Valves hearts Building walls hearts: endocardium, myocardium, epicardium Leading system hearts Arteries and veins hearts Core, him building, cavity core, contents, the sinuses Projection border hearts and holes on the front the wall chest cavity, places auscultation of valves hearts

Topic 54. General anatomy arterial vessels Breast aorta. Stomach aorta _ Arteries pelvis

Anatomical classification arteries (heartfelt , trunk, extra-organ , intraorgan)

. Classification of arteries according to wall structure. Types of arterial branching. Basic regularities distribution arteries in body a person Arterial intersystem and intrasystemic anastomoses . Sources and mechanisms of development of arteries. Arterial arches and their derivatives. Options and

anomalies development main lines arteries Robots M.A. Tikhomirova . Vessels hemomicrocirculatory bed, the structure of their walls and functions. Sources and mechanisms of formation vessels of the hemomicrocirculatory channel. Works of the Department of Normal Anatomy of NSU named after O. O. Bogomolets Robots department normal anatomy LNMU name Danyla Halytskyi. Organ specificity vessels hemomicrocirculatory channels Concept about ways collateral (bypass) flow of blood Age-related features of arteries.

X-ray anatomy arteries

Aorta, its parts. Thoracic aorta: topography, classification of branches. Branches of the thoracic aorta and areas their blood supply Internal December artery (branch subclavian arteries): topography, branches, areas blood supply Intrasytemic and intersystem arterial anastomoses .

Stomach aorta: topography, classification branches Peripheral branches abdominal aorta: topography, areas of blood supply. Internal branches of the abdominal aorta: even and odd. Couples internal branches of the abdominal aorta: topography and plots blood supply

Odd internal branches abdominal aorta: topography and areas blood supply Intrasytemic arterial anastomoses between branches abdominal aorta General iliacartery: formation, topography, branches. Internal iliac artery: topography, classification branches Peripheral and internal branches internal iliac arteries: topography, areas blood supply intrasytemic and intersystem arterial anastomoses .

Topic 55. *General anatomy of venous vessels. Body veins. Intrasytemic and intersystem venous anastomoses . General anatomy lymphatic vessels.*

Anatomical classification vein (heartfelt , trunk, extra-organ , intraorgan).Classification of veins according to the structure of the wall. Roots and tributaries of veins. Superficial veins, deep veins. Venous networks, venous plexuses. Sources and mechanisms of development of main veins. Options and anomalies development main lines vein Robots M. A. Tikhomirova . Age features vein X-ray anatomy of veins.

Upper hollow vein: roots, tributaries, topography. odd vein: formation, topography, classification tributary , areas collection venous of blood Hemipair vein: formation, topography, classification of tributaries , areas of venous blood collection. Veins spinal pillar

Lower hollow vein: roots, topography, classification tributary _ Peripheral and internal tributaries lower vena cava, areas collection venous of blood

Portal hepatic vein: roots, topography, tributaries. Superior mesenteric vein: topography, tributaries, areas collection venous of blood Lower mesenteric vein: topography, tributaries, areas collection venous of blood Selezinkova vein: topography, tributaries, areas collection venous of blood Branching gatehouse hepatic vein in liver

General iliac vein: roots, topography. Internal iliac vein: topography, tributaries

Venous plexus bodies small pelvis

Venous intrasytemic anastomoses . Venous intersystem anastomoses : coffee- blacksmiths anastomosis , Port- forge anastomoses and port coffee- cavalni anastomoses .

Classification lymphatic vessels Lymphatic capillaries: structure walls and functions. Lymphatic postcapillaries : structure walls and functions. Lymphatic vessels (intraorgan and extraorgan): structure of the wall and functions. Superficial and deep lymphatic vessels. Lymphatic trunks: jugular, subclavian, broncho -mediastinal, lumbar, intestinal - their formation, topography, functions. Lymphatic ducts: December strait, rights lymphatic strait. Development lymphatic vessels in embryogenesis. Options and anomalies development lymphatic channel _ Robots of Kyiv anatomical schools Age features structures lymphatic vessels

Lymph nodes. Chest lymph nodes: classification. Ways of outflow of lymph from lungs, heart, esophagus. Abdominal lymph nodes: classification. Lymphatic vessels and regional lymph nodes of the stomach , small intestine, large intestine, liver, kidneys, uterus, ovaries. Lymph nodes of the pelvic cavity: classification. Ways of outflow of lymph from bodies small pelvis

Topic 56. *Anatomy autonomous parts peripheral nervous systems.*

General regularities of the structure and function of the autonomous part of the peripheral nervous system systems. Morphological differences structures somatic nervous systems and vegetative nervous systems. Morphological differences in the structure of the reflex arc of the somatic nervous system and

autonomic nervous system. Sympathetic and parasympathetic parts of the autonomic nervous system systems: morphological, functional differences objects innervation. Centers vegetativenervous system in the brain and spinal cord. Peripheral department of the autonomic nervous system systems: autonomic nodes, nerves, autonomic plexuses. Classification of vegetative nodes, them topography, prenodal and postnodal nervous fibers

Cute part vegetative nervous systems. Centers in back brain Sympathetic trunk: topography, classification of nodes, internodal branches. White and gray are connected branches: formation, topography. Branches of the cervical nodes of the sympathetic trunk, their topography and areas innervation. Cute the roots vegetative nodes heads Branches December nodes cute trunk, their topography, areas innervation. Branches lumbar nodes sympathetic trunk, their topography, areas of innervation. Branches of the sacral nodes of the sympathetic trunk, them topography, areas of innervation. Parasympathetic part of the autonomic nervous system systems. Cranial part: vegetative nodes of the head, their topography, roots, branches, areas innervation. Pelvis part. internal plexus: craniocervical part, December part, abdominalpart, pelvic part. Cranio-cervical part of internal plexuses: common carotid plexus, internal carotid plexus, external carotid plexus, subclavian plexus - their formation, areas of innervation. Thoracic part of internal plexuses: thoracic aortic plexus, cardiac plexus, esophagus plexus, pulmonary plexus – their formation, areas innervation. Abdominal part of internal plexuses: abdominal aortic plexus: its secondary plexuses, their topography and knots, areas innervation. Sources formation, storage fibers abdominal aorticplexus.

Pelvic part of internal organs gossip: upper hypothalamic plexus, hypogastric nerve, lower hypogastric plexus. Lower hypogastric plexus: its secondary plexuses, their topography, areas innervation. Sources formation, storage fibers lower hypogastric plexus.

Topic 57. Vascularization and innervation of organs and walls of the thoracic and abdominal cavities andcavities small pelvis Contentful section 11 "Anatomy hearts Vessels and nerve body".

Vascularization (arterial blood supply venous and lymphatic outflow) and innervation of the walls and organs of the chest cavity: front, back and side walls chest cavity, diaphragms, trachea, bronchi, lungs, pleura, hearts, core, esophagus

Vascularization (arterial blood supply venous and lymphatic outflow) and innervation of the walls and organs of the abdominal cavity: front, back and side walls of the abdomen cavity, dorsal brain, liver, bile bubble, stomach , thin intestines (duodenum, jejunum and ileum), sections of the large intestine, pancreas, kidneys, adrenal glands, spleen.

Vascularization (arterial blood supply venous and lymphatic outflow) and innervation walls and bodies cavities pelvis: walls pelvis crotch, ureters, urinary bubble,urethra, ovaries, uterus, fallopian tubes, vagina, external female genital organs, testicles, ovum ducts, seminal blister, prostate glands, external men's sexualbodies

Contentful section 12. Vessels and nerve upper and lower ones limbs

Topic 58 . Vessels upper limbs Introduction to the peripheral nervous system. Brachial plexus: short and long branches

Arteries upper limbs Armpit artery: topography, parts, branches, areasblood supply Plechova artery: topography, branches, areas blood supply Promeneva artery: topography, branches, areas blood supply Liktyova artery: topography, branches, areas blood supply Liktyova articular net: sources formation. Back wrist net: topography, sources of formation, branches, areas of blood supply. Palmar carpal mesh: topography, sources formation, areas blood supply Superficial palm arc: topography,sources formation, areas blood supply deep palm arc: topography, sources formation, areas blood supply Arterial anastomoses upper limbs Projections arteries of the upper limb on the skin. Veins of the upper extremity: classification. Superficial and deep veins of the upper limb: their characteristics, patterns of topography and structure. Axillary vein: topography, tributaries. Superficial and deep lymphatic vessels of the upper limb. Lymphatic nodes of the upper limbs: classification.

Components of the peripheral nervous system: nerves, nerve nodes, nerve plexuses, nervous end. General plan structures nerve _ Vascular and nervous bundles Classification nerves Segmental distribution of peripheral nerves. Nerve nodes: classification. General plan structures of sensitive nodes. Spinal nerve: formation, composition of fibers, branches; conformity to spinal cord segments. Posterior

branches of spinal nerves: composition of fibers, topography, general patterns innervation. Posterior branches cervical, thoracic, lumbar, sacral and coccygeal nerves Front branches spinal cord nerves: storage fibers general regularities somatic formations nervous gossip General patterns of anatomy front branches December nerves Connection spinal cord nerves with vegetative nervous system neck plexus: sources formation, topography, branches, areas innervation.

Shoulder plexus: sources formation, topography. Trunks shoulder plexus. Classification of branches. Supraclavicular part: short branches of the brachial plexus, their topography and areas of innervation. Subclavian part: brachial plexus bundles. Long branches of the brachial plexus: formation, topography, areas innervation. Projection long branches shoulder plexus on the skin Topographic-anatomical relationship between nerves and blood vessels upper limbs

Topic 59. Vessels lower limbs Somatic nervous plexus: lumbar, sacrum

Arteries lower limbs External iliac artery: topography, branches, areas blood supply Femoral artery: topography, branches, areas of blood supply. Popliteal artery: topography, branches, areas blood supply Front tibia artery: topography, branches, areas of blood supply. Posterior tibial artery: topography, branches, areas of blood supply. Articular knee mesh: sources of formation. Lateral bony mesh: topography, sources formation, areas blood supply Average bony net: topography, sources of formation, areas of blood supply. Arteries of the foot: dorsal artery of the foot, lateral sole artery, average sole artery – their topography, branches, areas blood supply Arterial anastomoses of the lower limb. Projection of the arteries of the lower limb on the skin

Veins lower limbs: classification. Superficial and deep veins lower limbs: their characteristics, patterns of topography and structure. Superficial and deep lymphatic vessels lower limbs Lymphatic nodes lower limb: classification.

Lumbar plexus: sources formation, topography, branches, areas innervation. Kryzhov plexus: sources formation, topography, classification branches Short branchessacrum plexus: topography, areas innervation . Long branches sacrum plexus: topography, areas of innervation.

Topic 60. Vascularization and innervation of upper and lower limbs. Blood supply and innervation back muscles Contentful section 12 "Vessels and nerves limbs".

Vascularization (arterial blood supply and venous outflow) and innervation of joints of the upper limb: joints of the girdle of the upper limb, shoulder joint, elbow joint, radio -carpal joint

Vascularization (arterial blood supply venous and lymphatic outflow) and innervation skin and muscles upper limbs: muscles shoulder belts , muscles shoulder, muscles forearm, muscles brushes

Vascularization (arterial blood supply and venous outflow) and innervation of joints lower limbs: hip joint knee joint supracalcaneal - tibial joint

Vascularization (arterial blood supply venous and lymphatic outflow) and innervation of the skin and muscles of the lower limb: pelvic muscles, thigh muscles, leg muscles, muscles the feet

Vascularization (arterial blood supply, venous and lymphatic outflow) and innervation muscles of the back, chest and abdomen.

3. Structure academic discipline

Topic	In total	Lectures -	Practice .	SRS
Contentful section 1. Introduction to anatomy Anatomy bones				
Topic 1. The subject and tasks of anatomy. Research methods in anatomy The main ones modern directions development anatomy Development Ukrainian anatomical schools Kyivska anatomical school. Lviv Anatomical School. The main ones stages ontogenesis. Classification fabrics Anatomical nomenclature. Axes and planes bodies Bone as authority. Classification of bones. Development. Types of ossification. Bones body	5	2	-	3
Topic 2. General osteology . Bone as an organ. Doctrine about bones Lobova, parietal, occipital, Lattice bones	9	2	3	4

Topic 3 . wedge-shaped, temporal bone. Channels temporal bones	7	-	3	4
Topic 4. Facial skull. Ochna pit, bone nasal cavity.	7	-	3	4
Topic 5. External and internal bases of the skull. Skroneva, subtemporal, wing-palatine dimples	7	-	3	4
Topic 6. Bones upper limbs	7	-	3	4
Topic 7. Bones lower limbs	7		3	4
<i>Contentful section 2. connection bones</i>				
Topic 8. Introduction to arthrology. General arthrology. Classification of bone joints. Structure and functions of joints. The structure of the spine as a whole	5	2	3	-
Topic 9. Anatomy of continuous and intermittent connections between bones Development connections between bones in ontogenesis. connection between bones body and between bones heads	9	2	3	4
Topic 10. connection bones upper limbs	7	-	3	4
Topic 11. connection bones lower limbs	7	-	3	4
<i>Contentful section 3. Anatomy muscles</i>				
Topic 12. General myology. Muscle as an organ. Structure and function of muscles. Classification. Muscle development. Elements of biomechanics	8	1	3	4
Topic 13. Muscle as an organ. Classification of muscles. Development skeletal muscles Muscles and back fascia. Muscles and chest fascia. Diaphragm.	8	1	3	4
Topic 14. Muscles and fascia stomach Vagina direct muscle stomach Inguinal channel. white line stomach	7	-	3	4
Topic 15. Muscles and fascia heads Muscles and fascia neck Topography neck	7	-	3	4
Topic 16. Anatomy muscles upper limbs Topography and fascia upper limbs	8	1	3	4
Topic 17. Muscles lower limbs Fascia and topography lower limbs	8	1	3	4
<i>Contentful section 4. Travná system</i>				
Topic 18. Introduction to splanchnology. Internal classification bodies Anatomy oral cavities Palate. Anatomy tongue Anatomy of saliva glands Anatomy teeth Maxillary tooth system.	9	2	3	4
Topic 19. Anatomy pharynx, esophagus Anatomy stomach _Plots anterior abdominal wall.	7	-	3	4
Topic 20. Anatomy thin and thick intestines	7	-	3	4
Topic 21. Structure and functions of the glands of the digestive system. Liver, bilious bladder. Pangastric gland. Anatomy peritoneum	9	2	3	4
<i>Contentful section 5. Respiratory system</i>				
Topic 22. General anatomy respiratory systems. Embryogenesis bodies respiratory systems.	8	1	3	4
Topic 23. Anatomy trachea, the main ones bronchi, lungs C eredostenia .	8	1	3	4
<i>Contentful section 6. Urine - sexual, endocrine and immune systems</i>				
Topic 24 . Anatomy urinary bodies (kidneys, ureters, urinary bladder, urethra).	9	2	3	4
Topic 25. Anatomy of male genital organs. Perineum. Anatomy women's sexual bodies Breast gland.	11	4	3	4
Topic 26. Anatomy bodies immune systems. Anatomy bodies endocrine systems	9	2	3	4
<i>Contentful section 7. Anatomy central nervous system</i>				
Topic 27. Introduction to central nervous system general principles structures reflex arcs. Gray and white matter of the central nervous system. Development central nervous system in onto - and phylogeny. External and internal structure dorsal brain Embryogenesis main brain Anatomy of the brain and the bridge.	8	1	3	4

Topic 28. Anatomy of the cerebellum. IV ventricle. Rhombus-shaped pit.	7	-	3	4
Topic 29. Anatomy average brain Anatomy intermediate brain III ventricle.	7	-	3	4
Topic 30. Bark, her components parts, functions. Olfactory brain. The relief of the cloak. Localization of functions in the cortex hemispheres final brain	8	1	3	4
Topic 31. Basal nuclei. White matter of the terminal hemispheres brain Lateral ventricles.	7	-	3	4
Topic 32. Shells main brain and spinal cord. Formation and ways circulation spinal cord liquid	8	1	3	4
Topic 33 . Rising leading ways Descending leading ways	8	1	3	4
Contentful section 8. Organs flair				
Topic 34. Anatomy bodies flair. Anatomy eye Conductive ways of the visual analyzer.	8	2	3	3
Topic 35. Anatomy ears. Conductive ways of hearing and balance	6	1	3	2
Topic 36. Organ of taste. The organ of smell. The leading pathways of taste and sense of smell Skin, her derivatives Conductive ways skin analyzer.	6	1	3	2
Topic 37. Practical skills with educational material with anatomy sense organs	5	-	3	2
Contentful section 9. Cranial nerve. Spinal cord nerve				
Topic 38. Classification cranial nerves I, II, III, IV, VI, VIII cranial pairs nerves	8	2	3	3
Topic 39. V couple cranial nerves VII couple cranial nerves. Vegetative nodes heads	6	-	3	3
Topic 40. THEM, X, XI, XII couples cranial nerves.	6	-	3	3
Topic 41 . Spinal nerves. General education plansomatic nerve plexuses. Cervical plexus. December nerve	8	2	3	3
Topic 42. Practical skills and generalization material with anatomy nerves of the head and neck	6	-	3	3
Contentful section 10. Vessels heads and neck				
Topic 43. The study of blood vessels - angiology . Aorta . Branches arcs aorta General and external carotid arteries.	8	2	3	3
Topic 44. Anatomy of the arterial system	6	2	-	4
Topic 45. Internal sleepy and subclavian arteries	7	-	3	4
Topic 46. Veins heads and neck Lymphatic nodes and vessels heads and neck	8	2	3	3
Topic 47. Practical skills and generalization of material from anatomy of vessels and nerves of the head and neck. Vascularization and innervation organs of the head and neck.	6	-	3	3
Contentful section 11. Anatomy hearts Vessels and nerve body				
Topic 48. Anatomy hearts (I): topography hearts, anatomy cameras hearts Big and small circles blood circulation Anatomy hearts (II): structure walls hearts, blood supply of the heart, pericardium. Projection of the borders of the heart and on front wall chest cavities	8	4	3	1
Topic 49. Aorta. Thoracic aorta. Abdominal aorta. Arteries pelvis Arteries and veins of the great circle of blood circulation	8	2	3	3
Topic 50. Veins of the head and neck. Lymphatic vessels of the head and neck	8	2	3	3
Topic 51. Veins of the trunk: odd and semi-even veins, lower hollow vein, veins pelvis Gatekeeper hepatic vein. Porto- kavalny , coffee - kavalni and porto-coffee- cavalni anastomoses . Lymphatic vessels and nodes of the chest and abdomencavities and cavities pelvis	6	-	3	3
Topic 52. Autonomous part peripheral nervous systems. Cute part ANS. Parasympathetic part ANS. Vegetative plexuses.	8	2	3	3

Topic 53. Vascularization and innervation bodies chest, abdominal cavities and cavities pelvis Practical skills and generalization of the material on the anatomy of the heart, blood vessels and nerves body Blood circulation of the embryo and fetus.	8	2	3	3
Topic 54. Lymphatic system. Phylo - and ontogenesis of lymphatic vessels and nodes.	5	2	-	3
Contentful section 12. Vessels and nerve upper and lower ones limbs				
Topic 55. Anatomy of the somatic part of the peripheral nervous system	6	2	3	1
Topic 56. Blood supply and innervation of the upper limb.. Shoulder plexus	8	2	3	3
Topic 57. Vessels lower limbs Somatic nerve plexuses: lumbar, sacrum	8	2	3	3
Only hours -420 / 14 loans ECTS	420	64	162	194

4. Thematic plan lectures

No z.p. _	TOPIC	Number hours
	Contentful section 1. Introduction to anatomy Anatomy bones	
1	Introduction to the human anatomy course. The subject and problems of anatomy. Research methods in anatomy. The main modern trends in the development of anatomy. The development of Ukrainian anatomical schools. Kyiv anatomical school. Lviv Anatomical School. The main stages of ontogenesis. Classification of fabrics. Anatomical nomenclature.	2
2	General osteology. Bone as an organ. Structure, functions. Classification. Development, types ossification Axes and planes of the body. Bone as an organ. Classification of bones. Development. Types of ossification. Body bones	2
	Contentful section 2. connection bones	
3	Introduction to arthrology. General arthrology Classification connections bones Building and functions joints The structure of the spine as a whole	2
4	Anatomy of continuous and intermittent joints between bones. Development of connections between bones in ontogenesis. The connection between the bones of the trunk and between the bones of the head.	2
	Contentful section 3. Anatomy muscles	
5	General myology Muscle as authority. Building and muscle function. Classification. Development muscles Elements of biomechanics.	2
6	Anatomy of the muscles of the upper and lower limbs. Topography and fascia upper limb	2
	Contentful section 4. Travná system	
7	Introduction to splanchnology. General anatomy May systems. Classification of internal organs. Anatomy of the oral cavity. Palate. Anatomy of the tongue. Anatomy of salivary glands. Anatomy of teeth. Tooth -jaw system	2
8	The structure and functions of the glands of the digestive system. Liver, gall bladder , pancreas	2
	Contentful section 5. Respiratory system	
9	General anatomy respiratory systems. Embryogenesis of organs of the respiratory system	2
	Contentful section 6. Urine - sexual, endocrine and immune systems	
10	General anatomy urinary organs.	2
11	General anatomy women's sexual bodies	2

12	General anatomy men's sexual bodies	2
13	General anatomy bodies immune systems. General anatomy of organs endocrine systems	2
	Contentful section 7. Anatomy central nervous system	
14	Introduction to central nervous system Anatomy dorsal brain	2
15	Anatomy main brain Conductive ways	2
	Contentful section 8. Organs flair	
16	Anatomy bodies flair. Anatomy eye Authority sense of smell and taste	2
17	Anatomy of sense organs. Anatomy ears. Skin and its derivatives.	2
	Substantive chapter 9. Cranial nerves. Spinal nerves	
18	Classification of cranial nerves	2
19	Spinal nerves. General plan of the formation of somatic nerve plexuses.	2
	Contentful section 10. Vessels heads and neck	
20	The study of blood vessels is angiology. Cardiovascular system.	2
21	Anatomy arterial systems.	2
22	Veins of the head and neck. Lymph nodes and vessels of the head and neck	2
	Contentful section 11. Anatomy hearts Vessels and nerve body	
23	Anatomy hearts Anatomy of the heart (I): topography of the heart, anatomy of the chambers of the heart. Large and small circle of blood circulation.	2
24	Anatomy of the heart (II): structure of the heart wall, blood supply of the heart, pericardium. Projection of the borders of the heart and on the front wall of the chest cavity	
25	Arteries and veins of the great circle of blood circulation	2
26	Blood circulation of the embryo and fetus	2
27	Anatomy autonomous parts peripheral nervous systems. Nice part of ANS. Parasympathetic part of ANS. Vegetative plexus.	2
28	Lymphatic system. Phylo - and ontogenesis of lymphatic vessels and nodes	
	Contentful section 12. Vessels and nerve limbs	
29.	Anatomy somatic parts peripheral nervous systems.	2
30.	Blood supply and innervation of the upper limb	2
31.	Blood supply and innervation of the pelvis and lower limb.	2
32.	Somatic nerve plexuses: lumbar, sacral	2
	In total	64

4. Topics of seminar classes are not provided for in the program

5. Thematic plan practical classes

No z.p. _	TOPIC	Number hours
	Content section 1. Introduction to anatomy. Anatomy of bones	
1	General osteology. Bone as an organ. The doctrine of bones. Frontal, parietal, occipital, ethmoid bones.	3
2	Wedge-shaped, temporal bone. Channels of the temporal bone.	3
3	Facial skull. Eye socket, bony nasal cavity.	3
4	The outer and inner base of the skull. Temporal, subtemporal, pterygoid-palatine fossa.	3
5	Bones of the upper limb.	3

6	Bones of the lower limb.	3
	Content section 2. Connection of bones	
7	General arthrology. Classification of bone joints. Structure and functions of joints. The structure of the spine as a whole	3
8	Anatomy of continuous and intermittent joints between bones. Development of connections between bones in ontogenesis. The connection between the bones of the trunk and between the bones of the head.	3
9	Connection of the bones of the upper limb.	3
10	Connection of the bones of the lower limb.	3
	Content section 3. Muscle anatomy	
11	General myology. Muscle as an organ. Structure and function of muscles. Classification. Muscle development. Elements of biomechanics	3
12	Muscle as an organ. Classification of muscles. Development of skeletal muscles. Muscles and fascia of the back. Muscles and fascia of the chest. Diaphragm.	3
13	Abdominal muscles and fascia. Sheath of the rectus abdominis muscle. Inguinal canal. White belly line.	3
14	Muscles and fascia of the head. Muscles and fascia of the neck. Topography of the neck.	3
15	Anatomy of the muscles of the upper limb. Topography and fascia of the upper limb.	3
16	Muscles of the lower limb. Fasciae and topography of the lower limb.	3
	Content section 4. Digestive system	3
17	Introduction to splanchnology. Classification of internal organs. Anatomy of the oral cavity. Palate. Anatomy of the tongue. Anatomy of salivary glands. Anatomy of teeth. Tooth -jaw system.	3
18	Anatomy of the pharynx, esophagus. Stomach anatomy . Sections of the anterior abdominal wall.	3
19	Anatomy of the small and large intestines.	3
20	The structure and functions of the glands of the digestive system. Liver, gallbladder . Pancreas. Anatomy of the peritoneum	3
	Content section 5. Respiratory system	
21	General anatomy of the respiratory system. Embryogenesis of organs of the respiratory system.	3
22	Anatomy of the trachea, main bronchi, lungs. Mediastinum.	3
	Content section 6. Urinary - sexual, endocrine and immune systems	
23	Anatomy of urinary organs (kidneys, ureters, bladder, urethra).	3
24	Anatomy of male genital organs. Perineum. Anatomy of female genital organs. Breast	3
25	Anatomy of organs of the immune system. Anatomy of organs of the endocrine system	3
	Content section 7. Anatomy of the central nervous system	
26	General principles of the structure of reflex arcs. Gray and white matter of the central nervous system. Development of the central nervous system in ontology and phylogeny. External and internal structure of the spinal cord. Brain embryogenesis. Anatomy of the medulla oblongata and pons.	3
27	Anatomy of the cerebellum. IV ventricle. Rhombus-shaped fossa.	3
28	Anatomy of the midbrain. Anatomy of the diencephalon. III ventricle.	3
29	Bark, its constituent parts, functions. Olfactory brain. The relief of the cloak. Localization of functions in the cortex of the hemispheres of the terminal brain.	3
30	Basal nuclei. White matter of the hemispheres of the terminal brain. Lateral ventricles.	3

31	Shells of the brain and spinal cord. Formation and ways of circulation of cerebrospinal fluid.	3
32	Ascending pathways. Descending pathways.	3
	Content section 8. Sense organs	
33	Anatomy bodies flair. Anatomy eye Conductiveways of the visual analyzer.	3
34	Anatomy ears. Conductive ways of hearing andbalance	3
35	The organ of taste. The organ of smell. The leading pathways of tasteand sense of smell Skin, her derivatives Conductive ways skin analyzer.	3
36	Practical skills with educational material withanatomy sense organs	3
	Content section 9. Cranial nerves. Spinal nerves	
37	Classification cranial nerves I, II, III, IV, VI, VIII cranial pairs nerves	3
38	V couple cranial nerves VII couple cranial nerves. Vegetative nodesheads	3
39	THEM X, XI, XII couples cranial nerves.	3
40	Spinal nerves. General education plansomatic nerve plexuses. Cervical plexus. Decembernerv	3
	Practical skills and generalization material withanatomy nerves of the head and neck	3
	Content section 10. Vessels of the head and neck	
41	Aorta. Branches of the aortic arch. Common and external carotid arteries.	3
42	Internal carotid and subclavian arteries.	3
43	Veins of the head and neck. Lymph nodes and vessels of the head and neck.	3
44	Practical skills and generalization of the material on the anatomy of vessels and nerves of the head and neck. Vascularization and innervation of head and neck organs.	3
	Content section 11. Anatomy of the heart. Vessels and nerves of the trunk	
45	Anatomy hearts (I): topography hearts, anatomycameras hearts Big and small circles blood circulation Anatomy hearts (II): structure walls hearts,blood supply of the heart, pericardium. Projection of the borders of the heart and on front wall chest cavities	3
46	Aorta. Thoracic aorta. Abdominal aorta. Arteries pelvis Arteries and veins of the great circle of blood circulation	3
47	Veins of the head and neck. Lymphatic vessels of the head and neck	3
48	Trunk veins: odd and semi-even veins, lower hollow vein, veins pelvis Gatekeeper hepatic vein. Porto- kavalny , coffee - kavalni and porto-coffee- cavalni anastomoses . Lymphatic vessels and nodes of the chest and abdomencavities and cavities pelvis	3
49	Autonomous part peripheral nervous systems. Cute part ANS. Parasympathetic part ANS. Vegetative plexuses.	3
50	Vascularization and innervation bodies chest, abdominal cavities and cavities pelvis Practical skillsand generalization of the material on the anatomy of the heart, blood vessels and nervesbody Blood circulation of the embryo and fetus.	3
	Content section 12. Vessels and nerves of the upper and lower extremities	
51	Anatomy of the somatic part of the peripheral nervous system	3
52	Blood supply and innervation of the upper limb.. Shoulder plexus	3
53	Vessels lower limbs Somatic nerve plexuses: lumbar,sacrum	3
	In total	162

6. Thematic plan independent work students

Noz.p	TOPIC	Mr hours
	Content section 1. Introduction to anatomy. Anatomy bones	
1.	Describe the main ones stages development anatomy The history of the development of Ukrainian anatomical schools in XX - XXI centuries	3
2.	Periods ontogenesis. Embryogenesis.	4
3.	Methods anatomical research. Anatomical nomenclature. Types structures bodies a person	4
4.	Individual characteristics of the form brain skull (schematically).	4
5.	Describe gender, age and individual characteristics skull	4
6.	Breast cage in as a whole Pelvis in as a whole	4
7.	Anomalies development bones	4
	Contentful section 2. connection bones	
8.	Development connections bones	4
9.	Biomechanics joints	4
10.	Joints of the foot: Chopar's joints and Lisfranc . Arch of the foot.	4
	Contentful section 3. Anatomy muscles	
11.	Developmental defects muscles	4
12.	Elements of biomechanics	4
13.	Interfascial spaces heads and neck	4
14.	Weak places walls abdominal cavities	4
15.	Topographical creations upper limbs	4
16.	Topographical creations lower limbs	4
	Contentful section 4. Travna system	
17.	Classification of entrails. General plan of the structure hollow and parenchymatous bodies	2
18.	Development of teeth. Variants and anomalies of development dairy and permanent teeth.	2
19.	Physiological bites . Pathological disorders _ (schematically).	3
20.	Developmental defects face and tongue	2
21.	Anomalies development derivatives the front department of primary care intestines	2
22.	Anomalies development yolk ducts	2
23.	Options placing worm-shaped appendage and projection pain points on the front abdominal wall with appendicitis.	3
	Contentful section 5. Respiratory systems	
24.	Malformations of respiratory development systems.	4
25.	Anatomy bronchi, lungs, mediastinum.	4
	Contentful section 6. Urine - sexual, endocrine and immune systems	
26.	Disadvantages development endocrine organs and immune systems	3
27.	Disadvantages development genitourinary organs _ device	3

28.	Schematic representation of the structuralfunctional units parenchymatous bodies	3
29.	X-ray anatomy entrails	3
	Contentful section 7. Anatomy central nervous system	
30.	Development of the brain and its agefeatures.	4
31.	Anomalies development main brain	3
32.	Associative ways (schematically).	3
33.	Commissural ways (schematically).	3
3 4.	Projection ways (schematically).	3
35.	Circulation spinal cord liquid	3
36.	Formation shell dorsal and main brain	3
37.	Entrance 12 steam cranial nerves from the brain and skull	3
38.	Walls departments lateral ventricles	3
	Contentful section 8. Organs flair	
39.	Developmental defects body sight	3
40.	Derivatives skin	3
41.	Defects in the development of the organ of hearing and balance. Mechanism carrying out sound	3
	Contentful section 9. Cranial nerve. Spinal cord nerve	
42.	Projection of cranial nerve nuclei on the rhomboid pit	4
43.	Topography nerve nodes heads and neck	4
	Thoracic nerves	3
44.	Formation and branching of the spinal cordnerves	4
	Contentful section 10. Vessels heads and neck	
45.	Circle Vilisia .	4
46.	Lymphatic nodes heads	5
47.	Lymph drainage from bodies cavities neck	4
48.	Wing-shaped venous plexus.	4
	Content section 11. Anatomy of the heart. Vessels andnerve body	
49.	Disadvantages hearts	4
50.	Fetal circulation.	3
51.	Collateral blood circulation reduced blood circulation	3
52.	Intersystemic and intrasystemic arterioles -arterial anastomoses .	3
53.	Porto- kavalny and coffee - kavalni anastomoses .	3
54.	Hemomicrocirculatory channel.	3
	Contentful section 12. Vessels and nerve limbs	
55.	Arterial nets upper and lower limbs	4
56.	Plots sensitive and motor innervation upper and lower limbs somatic plexuses	3
	In total SRS with disciplines	194

9. Individual tasks - - are not provided

10. Teaching methods

According to the sources of knowledge, teaching methods are used: verbal - story, explanation,

lecture, instruction; visual - demonstration, illustration; practical - practical work, problem solving. According to the nature of the logic of knowledge, methods are used: analytical, synthetic, analytical-synthetic, inductive, deductive. According to the level of independent mental activity, the following methods are used: problem-based, searching, research.

1. Verbal methods: lecture, conversation;
2. Visual methods: illustration, demonstration
3. Practical methods: performing practical work and solving situational tasks to develop skills and abilities;
4. Students' independent work on understanding and assimilation of new material
5. Use of control and educational computer programs
6. Innovative teaching methods: business game, case method.

The types of training according to the curriculum are: lectures; practical training; independent work of students.

11. Control methods

Current control is carried out on the basis of control theoretical knowledge, practical skills and abilities.

Forms of current control are: *in the dream survey* (frontal, individual, combined), interview; practical verification of professional skills (conducted based on the results of practical work at the end of the class); test control ("open" and "closed" test tasks).

Current control is mandatory. During the evaluation of mastering of each topic from all disciplines of the curriculum for the current educational activity, the student is given grades on a 4-point (traditional scale) taking into account the approved evaluation criteria for the discipline. All types of work provided by the curriculum are taken into account. The student must receive a grade in each topic. The teacher conducts a survey of each student in the group at each lesson and assigns a grade in the journal of attendance and student success according to the traditional scale ("5", "4", "3", "2").

When evaluating the student's current educational activity, 20% of the grade is the student's independent work, which takes into account the knowledge of the topic of independent study and the performance of work in the notebook.

The final (summary) control of the sections is carried out at the end of the section in the form of a written test, which includes test tasks from the "Step-1" bank, theoretical questions and control of practical skills (solving situational problems, defining and describing macro- and micropreparations, etc.) .

Such methods of control as oral, written and test are used, which should contribute to increasing the motivation of students-future specialists for educational and cognitive activities. According to the specifics of professional training, preference is given to test and written control. In the case of final control, preference is given to written or test control.

12. Form of final control of study success .

The final control of the discipline is carried out on the basis of theoretical control knowledge, practical skills and abilities.

Assessment is a form of final control, which consists in assessing the student's learning of the learning material based solely on the results of his performance of certain types of work in practical, seminar or laboratory classes. Semester assessment of subjects is carried out after the end of its study, before the beginning of the examination session.

An exam (differential assessment) is a form of final control of a student's assimilation of theoretical and practical material from an educational discipline.

13. Scheme of accrual and distribution of points received by students.

The maximum number of points for a discipline is 200 points. The ratio between the results of the evaluation of the current educational activity and the final control of knowledge is 60% and 40%.

The first semester of studying the discipline ends with a test.

The maximum number of points that a student can score for the current educational activity while studying the discipline is 200 points , *the minimum number of points* - the minimum number of points - is 120 points.

The calculation of the number of points is carried out on the basis of the grades received by the student on a 4-point (national) scale during the study of the discipline, by calculating the arithmetic mean, rounded to two decimal places.

The student receives a credit in the last lesson of the discipline based on the results of the current assessment.

Only those students who do not have academic debt and whose average score for the current academic activity in the academic discipline is at least 3.00 are admitted to the credit.

The average grade for the current activity is converted into points on a 200-point scale, according to the conversion table (Table 1).

Table 1.

Recalculation of the average grade for the current activity into a multi-point scale (for disciplines ending with credit)

4-point scale	200-point scale	4-point scale	200-point scale	4-point scale	200-point scale	4-point scale	200-point scale
5	200	4.47	179	3.94	158	3.42	137
4.97	199	4.44	178	3.92	157	3.39	136
4.94	198	4.42	177	3.89	156	3.37	135
4.92	197	4.39	176	3.87	155	3.34	134
4.89	196	4.37	175	3.84	154	3.32	133
4.87	195	4.34	174	3.82	153	3.29	132
4.84	194	4.32	173	3.79	152	3.27	131
4.82	193	4.29	172	3.77	151	3.24	130
4.79	192	4.27	171	3.74	150	3.22	129
4.77	191	4.24	170	3.72	149	3.19	128
4.74	190	4.22	169	3.69	148	3.17	127
4.72	189	4.19	168	3.67	147	3.14	126
4.69	188	4.17	167	3.64	146	3.12	125
4.67	187	4.14	166	3.62	145	3.09	124
4.64	186	4.12	165	3.59	144	3.07	123
4.62	185	4.09	164	3.57	143	3.04	122
4.59	184	4.07	163	3.54	142	3.02	121
4.57	183	4.04	162	3.52	141	3	120
4.54	182	4.02	161	3.49	140	< 3	70-119 (refolding)
4.52	181	4.00	160	3.47	139		
4.49	180	3.97	159	3.44	138		

The learning result is also evaluated on a two-point scale (passed/failed).

Table 2
The scale of transferring points to the national system

According to the national system	On a 200-point scale
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counted	from 120 to 200 points
not counted	less than 119 points

Students' independent work, which is provided for by the topic of the lesson along with classroom work, is evaluated during the current control of the topic in the corresponding lesson.

The second semester (the last semester of studying the discipline) ends with a final control in the form of an exam.

Only those students who do not have academic debt (all missed classes have been completed) and whose average score for the current educational activity in the academic discipline is at least "3" are admitted to the exam.

The maximum number of points that a student can score for the current educational activity for admission to the exam is 120 points and is defined as the sum of the arithmetic average of all grades received in the semester.

The minimum number of points that a student must score for the current educational activity for admission to the exam is 72 points. Recalculation of the average grade for the current academic performance (on a 120-point scale) in the table. 3.

Table 3.

Recalculation of the average grade for the current academic performance in a multi-point scale for disciplines ending with an exam

4-point scale	200-point scale	4-point scale	200-point scale	4-point scale	200-point scale
5	120	4.29	103	3.58	86
4.96	119	4.25	102	3.54	85
4.92	118	4.21	101	3.50	84
4.87	117	4.17	100	3.46	83
4.83	116	4.12	99	3.42	82
4.79	115	4.08	98	3.37	81
4.75	114	4.04	97	3.33	80
4.71	113	4.00	96	3.29	79
4.67	112	3.96	95	3.25	78
4.62	111	3.92	94	3.21	77
4.58	110	3.87	93	3.17	76
4.54	109	3.83	92	3.12	75
4.50	108	3.79	91	3.08	74
4.46	107	3.75	90	3.04	73
4.42	106	3.71	89	3	72
4.37	105	3.67	88	Less than 3	Not enough
4.33	104	3.62	87		

The maximum number of points that a student can score when taking the exam is 80 (the minimum number is at least 50).

Discipline assessment is defined comprehensively as the sum of points for the current educational activity and points for the exam.

From the allocated 120 points for the current educational activity, 4 to 12 additional points are allocated for the assessment of individual independent work of higher education applicants, according to the work curriculum. Encouragement points are added to the final grade for the discipline at the end of its study.

Points with disciplines for students, which successfully completed the program are converted into the national scale and the ECTS system (tables 4, 5).

Table 4.

Discipline points	Evaluation on a 4-point scale
From 180 to 200 points	5
From 150 to 179 points	4
From 149 points to the minimum number of points that the student must score	3
Below the minimum number of points that the student must score	2

Table 5

Scale assessment: national and ECTS

Total points for all types educational activity	Rating ECTS	Rating by national scale	
		for exam, difzalik	for offset
180-200	AND	perfectly	counted
160-179	IN	fine	
150-159	WITH	satisfactorily	
130-149	D		
120-129	E		
50-119	FX	unsatisfactorily with the possibility of refolding	not counted with possibility rearrangement
0-49	F	unsatisfactorily with mandatory repeated studying the discipline	not counted with mandatory repeated study disciplines

14. Methodological support

1. Working curriculum of the discipline;
2. Plans of lectures, practical classes and independent work of students;
3. Abstracts of lectures on the discipline;
4. Methodical instructions for practical classes for students;
5. Methodical materials that ensure independent work of students;
6. Test and control tasks for practical classes;
7. List of exam questions

15. Recommended literature

The main one (Basic)

1. Human anatomy. Edition 2. Cherkasov V. G., Kravchuk S. Yu. and others. - Vinnytsia: Nova book, 2018. - 640 p.
2. Human anatomy. Volume 2. Edition 7. Holovatsky A. S. and others. - Vinnytsia: Nova book. - 2019. - 456 p.
3. Human anatomy. Edition 3. Cherkasov V.G., Kravchuk S.Yu. and other. - Vinnytsia: New book. - 2020. - 584 p.
4. Human anatomy in three volumes / A. S. Holovatskyi, V. G. Cherkasova, M. R. Sapin ,I. I. Fedonyuk . – Vinnytsia: Nova book, 2006, 2007, 2008 year
5. Anatomy a person IN three volumes / Under ed. IN. G. Koveshnikova . – Luhansk: Publishing

- house - " Shiko " Ltd "Virtual reality", 2005. - 328 with.
6. Human anatomy. In two parts. / Ed. K. A. Dubenko . – To: CJSC "Atlant-UMS",2004. - 689 with.
 7. Dubenko K. AND. Anatomical terminology / K. AND. Dubenko . – K.: Polygraph. Book, 2001.- 392 with.
 8. Dubenko K. A. International anatomical nomenclature / K. A. Dubenko . - K.: Perun, 1997. -143 p.
 9. Mateshuk-Vatseba L.R. Normal anatomy / L.R. Mateshuk-Vatseba . - Lviv.: Callconscience, 1997. – 269 p.
 10. International anatomical terminology (Latin, Ukrainian, Russian and english equivalents) / IN. G. Cherkasov, AND. AND. Baize, Yu. AND. Huminsky , AT. AND. Kovalchuk. – Vinnytsia:New Book , 2010. – 392 p.
 11. International anatomical nomenclature / Ed. I. I. Bobryka, V. G. Koveshnikova . - Kyiv:Health, 2001. – 328 p.
 12. Netlukh M. AND. Ukrainian-Latin anatomical dictionary / M. AND. Nethluh . - Lviv,2000 - 215 with.
 13. Sviridov AT. AND. Anatomy a person / AT. AND. Sviridov – Kyiv: Health, 2000 – 400 with.
 14. Sinelnikov R. D. Atlas of anatomy human _ In 4 volumes / R. D. Sinelnikov . - M.: Medicine,2004.
 15. Friedrich Paulsen . Sobotta . Atlas der Anatomie Dec Menschen / Friedrich Paulsen , Jens Waschke . – Munich : Urban & Fischer , 2011. – 416 S.
 16. Netter FH Atlas of Human Anatomy . Ciba-geigy limited / FH Netter . – Switzerland , 1991. –514 p.
 17. Rauber-Kopsch. Lehrbuch und atlas der anatomy Dec menshen / Rauber-Kopsch . – Bend I.Leipzig , 1940. – 500 S.

Auxiliary

1. Vilkhovoy IN. F. X-ray anatomical Atlas vessels / IN. F. Vilkhovoy . – Kyiv : Health, 1975. - 141 with.
2. Tonkov V. N. Textbook normal anatomy человека / VN Tonkov , editor . B. A. Dolgo - Saburova. - L., Medgiz , 1962. - 763 with.
3. Fick V. B. Introduction to X-ray anatomy . X-ray anatomy of bones and their joints / V. B. Fick // Methodical development for teachers and students. – Lviv, 2002. – 26 with.
4. Fiskova L.B. Methodological recommendations for independent work of students during study locomotor apparatus. Part 1. Osteology. Kind. 2nd, revised, add . / L. B. Fiskova , L. R. Mateshuk - Vatseba . - LDMU, Lviv, 1998. - 64 p.
5. Prives M. G. Anatomy человека / M. G. Prives , N. K. Lysenkov , V. I. Bushkevich . – Hippocrates , St. Petersburg: Publisher house St. Petersburg MAPO, 2004. – 720 with.

16. Informational resource

Testing center - database of license test tasks Step - 1 <http://testcentr.org.ua/OMIM> (Online Mendelian Inheritance in Man) – An Online Catalog of Human Genes and Genetic Disorders <http://omim.org/>