

SYLLABUS

concerning the cycle of education 2024-2030

(date range)

1.1. BASIC INFORMATION CONCERNING THIS SUBJECT / MODULE

Subject / Module	Anatomy
Course code / module *	A/A
Faculty of (name of the leading direction)	College of Medical Sciences , University of Rzeszow
Department Name	Department of Correct Anatomy
Field of study	Medical
Level of education	Uniform Master studies
Profile	General academic
Form of study	Non-stationary
Year and semester	1st year, 1st and 2nd semester
Type of course	Obligatory
Coordinator	Krzysztof Balawender M.D. PhD
First and Last Name of the Teachers	Krzysztof Balawender M.D. PhD Aleksandra Burbelka M.D. Maksymilian Klosowicz M.D.

* - According to the resolutions of the Faculty of Medicine

1.2. Forms of classes, number of hours and ECTS

Semester	Lecture	Exercise	Conversation	Laboratory	Seminar	ZP	Practical	Self-learning	Number of points ECTS
I	15	60	-	-		-	-		8
II	15	60	-	-		-	-		5

1.3. The form of class activities

classes are in the traditional form

classes are implemented using methods and techniques of distance learning

1.4. Examination Forms / module (exam, credit with grade or credit without grade)

2. REQUIREMENTS

Knowledge about the structure and functioning of the human body at the high school level.

3. OBJECTIVES, OUTCOMES, AND PROGRAM CONTENT USED IN TEACHING METHODS

3.1. Objectives of this course/module

C1	Understanding the detailed anatomical structure of the human body based on descriptive anatomy, which divides the human body into particular systems considered in sequence: bone, muscle, digestive, respiratory, urogenital, internal, vascular, nervous, common and sensory organs.
C2	Understanding correct human body structure, determines the functions of organs, systems and the organism as a whole. Dynamic development of imaging techniques of human body structures; radiology, computed tomography, magnetic resonance imaging and others that enable the visualization of structures and the interpretation of topographical relations between them, requires knowledge of normal anatomy. The student of the medical faculty, having knowledge in all the above-mentioned areas, acquires the ability to interpret the construction of the living subject to a degree that enables understanding of clinical issues and is prepared to the extent necessary to expand it in subsequent years of study and informed practical medical practice.

3.2 OUTCOMES FOR THE COURSE / MODULE (TO BE COMPLETED BY THE COORDINATOR)

EK (the effect of education)	The content of learning outcomes defined for the class (module)	Reference to directional effects (KEK)
EK_01	KNOWS THE STRUCTURE OF THE HUMAN BODY IN A TOPOGRAPHICAL AND FUNCTIONAL APPROACH, INCLUDING THE TOPOGRAPHICAL RELATIONS BETWEEN THE VARIOUS ORGANS, ALONG WITH ANATOMICAL, HISTOLOGICAL AND EMBRYOLOGICAL NOMENCLATURE	A.W1
EK_02	KNOWS THE MICROARCHITECTURE OF TISSUES, EXTRACELLULAR MATRIX AND ORGANS	AW3
EK_03	CAN EXPLAIN THE ANATOMICAL BASIS OF THE PHYSICAL EXAMINATION	A.U3
EK_04	IS ABLE TO INFER THE RELATIONSHIPS BETWEEN ANATOMICAL STRUCTURES ON THE BASIS OF ANATOMICAL DIAGNOSTIC STUDIES, ESPECIALLY IN THE FIELD OF RADIOLOGY	A.U4
EK_05	HE HAS ACQUIRED THE ABILITY TO SEE AND RECOGNIZE HIS OWN LIMITATIONS, MAKE SELF-ASSESSMENT OF DEFICITS AND EDUCATIONAL NEEDS	K.05
EK_06	FORMS CONCLUSIONS FROM ITS OWN MEASUREMENTS AND OBSERVATIONS	K.08

3.3 CONTENT CURRICULUM (filled by the coordinator)

A. Lectures

Problems of the lecture

Course contents

SEMESTER I

Lecture 1

Organization of anatomy classes. Basic anatomical terms. Practical classes, rules of participation in anatomy classes. Conditions for passing practicals, tests, practical and theoretical exams, textbooks. Basic anatomical terms; body axes, body lines, planes, body regions.

Lecture 2

Structure of bones. Joint types – classification, structure, and function. Bones of the upper limb. Upper limb joints.

Lecture 3

Division of muscle tissue. Muscles of the shoulder girdle. Axilla and axillary cavity. Blood vessels and nerves of the arm. Muscles of the arm. Shoulder and arm regions.

Lecture 4

Muscles of the forearm and hand. Cubital fossa. Blood vessels and nerves of the forearm. Muscles of the hand. Brachial plexus.

Lecture 5

Bones of the lower limb. Joints of the lower limb. Muscles of the pelvic girdle. Lumbar plexus. Sacral plexus.

Lecture 6

Muscles of the thigh. Muscles of the leg. Anatomy of the popliteal fossa. Blood supply of the lower limb. Innervation of the lower limb. Clinical aspects of foot anatomy.

Lecture 7

Muscles and fasciae of the thorax and back. Blood supply and innervation of the thoracic walls. Trachea and bronchi. Lungs. Pleura. Mediastinum. Diaphragm.

Lecture 8

Anatomy and development of the heart. Blood vessels and innervation of the heart. Pericardium. Fetal circulation. Radiological anatomy of the thorax.

Lecture 9

Muscles and triangles of the neck. Cervical plexus. Thyroid gland. Blood vessels and nerves of the neck. Larynx.

Lecture 10

Surgical anatomy of the anterior abdominal wall. Peritoneum. Stomach, duodenum, jejunum, and ileum. Large intestine.

Lecture 11

Liver, bile ducts, spleen, pancreas. Major abdominal vessels. Innervation of abdominal organs.

Lecture 12

Kidneys, ureters, urinary bladder. Lesser pelvis – topographical relations, blood vessels, and nerves. Male internal and external genital organs. Female internal and external genital organs. Lecture summary and completion.

Semester II

Lecture 1

Skull – structure, basics of anthropology, connections of the skull with the spine.

Lecture 2

Oral cavity. Nose and nasal cavity. Paranasal sinuses. Hard and soft palate. Pharynx.

Lecture 3

Internal structure of the cerebral hemispheres.

Lecture 4

Anatomical structure of the brainstem.

Lecture 5

Cerebellum. Reticular formation.

Lecture 6

Spinal cord. Voluntary motor pathways.

Lecture 7

Spinal nerve. Autonomic nervous system – introduction.

Lecture 8

Autonomic nervous system.

Lecture 9

Cranial nerves – part 1.

Lecture 10

Cranial nerves – part 2.

Lecture 11

Sensory organs – ear.

Lecture 12

Sensory organs – eye.

B. Problems of exercises

Course contents

SEMESTER I – laboratory classes topics

Exercise 1: Upper limb rim. Shoulder and collarbone. The free part of the upper limb. The humerus. Forearm bones: elbow and radial bone. Hand bones: the bones of the wrist, metacarpus and fingers. X-ray anatomy of the bones and joints of the upper limb.

Exercise 2: The joints of the upper limb. Sterno-clavicular joints and the articular-clavicular joint (articular surfaces, joint capsule, ligaments, range of movements, joints of the free upper limb part) Shoulder joint: surfaces, labial capsule, handbag, ligaments, range of movements. Elbow joint: the shoulder and elbow joint, the brachial-radial joint, the radial-elbow joint closer (surfaces, purse, ligaments, range of motion), the interosseous membrane, the elbow-radial joint further, the radial-wrist joint (surfaces, articular disc, range of motion). Hand joints: Joints: between - and intravertebral joints, wrist and metacarpus joints, thumb and thumb joint (surfaces and types of movements), metacarpophalangeal and interphalangeal joints.

Exercise 3: Muscles of the upper limb muscle: supraspinous muscle, subheated thigh, upper and smaller sacral, shoulder, subscapular - carcass, innervation, action. Chest and back muscles attached to the upper limb: quadrilateral, widest back, levator, parallelogram,

toothed, thoracic, subclavian - the effect of these muscles on movements in the joints of the upper limb. Down and axillary cavity: limitation, content. Axial medial and lateral opening.

Exercise 4: The brachial plexus - definition, topography, trunks and brachial plexus bundles. Branches of short plexus - range of innervation. Branches of the long brachial plexus. Shoulder area and skin nerves, fascia of the arm, intramuscular septum. Front group of the muscles of the arm: the biceps muscle of the shoulder, the coronary-brachial arm (trailers, innervation, action). Rear muscle group of the arm: triceps, elbow (trailers, activity, innervation). Musculo-cutaneous nerve: origin, course, branches, range of innervation.

Exercise 5: Forearm area, skin innervation, superficial veins. Bottom of the elbow. Dishes and nerves of the forearm. Forearm muscles: front, lateral and posterior groups - muscle identification, trailer, activity, innervation. Forearm fascia, intra-muscular stiffeners. Flexor retractors and extensors. Bottom of the elbow, limitation, topography of vessels and nerves in this area. Topographies of nerves: elbow, median and radial. Wrist channel, limitations, content. Radial hole.

Exercise 6: Hand surroundings, hand skin innervation. Muscles of the hand: muscles of the withers, the ball and middle muscles (spongy and interosseous muscles) - identification, function, innervation. He will say his hand, tendon sheaths. Subclavian artery - topography, branches. The artery and axillary vein - the course in the axillary cavity, branches. Arteries and veins of the arm: brachial artery, topography, branches. Arteries and veins of the forearm: ulnar and radial artery (topography, branches). Hand arteries and palm arches; superficial and deep, arteries of the metacarpus and fingers, veins of the hand: superficial and deep. She was a non-radiation and quadrilateral vein.

Exercise 7: Bones of the lower limb rim: pelvic bone. hip, sciatic and pubic bone. The acetabulum of the hip joint. Curtain hole. The sock is bigger and smaller. Joint spacing: muscle and vessel spacing. Puddle. Bones of the free part of the lower limb: femur, bones of the lower leg (tibia and arrow), bones of the foot (tarsus, metatarsus and toes). Lower limb joints: sacroiliac joint, pubic symphysis. Pelvis as a whole. Joints of the part of the free lower limb: hip joint (surfaces, bag, ligaments, range of movements), knee joint (surfaces, bag, external and internal ligaments, range of movements).

Exercise 8: Pond and tibio-sagittal joint. Intraosseous shin membrane. Ankle and upper joint - joint surfaces, range of movements. Cross-step pond. Tarso-metatarsal and interosteoarthritis. Foot joints. Mechanics of joints of the foot. The vault of the foot. X-ray anatomy of bones and joints of the lower limb. The dorsal muscles of the lower limb hoop. Front group - ilium-lumbar muscle (trailer, activity, innervation). Rear group - gluteal muscles, muscle of fascia fascia broad, pear-shaped (trailers, activity, innervation, abdominal muscles of the lower limb rim - lenses, twin, trapezoidal thighs (trailers, activity, innervation), iliac fascia and fascia fascia.

Exercise 9: Thigh muscles. Front group of thigh muscles - tailor's muscle, quadriceps (trailers, activity, innervation). Medial group of thigh muscles - adductor muscles, comb and slender muscle (trailers, activity, innervation). Rear group of thigh muscles - thigh-bisected, semi-acute and semi-biliary muscle (trailers, activity, innervation). Fascia broad. Hip and tibial band. Intramuscular partitions. Lumbar plexus - formation, topography, branches. Their course and scope of innervation. Cross plexus - formation, topography, branches, their course and scope of innervation. The sock is bigger and smaller. Over and chink hole (restriction, content). Joint spacing: muscle and vessel spacing. Thigh triangle, hip and pubic bottom. Channel of addressers - restrictions, content. Thigh canal: thigh ring, saphenous solution. The femoral hernia, the curtain canal - restriction, content.

Exercise 10: Enhancement of the skin of the buttocks and thighs. Front shin group: front tibial muscle, long fingers extensor, long palpus extensor (trailers, activity, innervation). Side group of the shin muscle: arrow muscles (trailers, activity, innervation). Rear group of shin muscle (trailer, activity, innervation): superficial layer: gastrocnemius muscle, soleus, plantar, deep layer: popliteal muscle, long-back flexor, tibialis posterior, flexor, long toe. The popliteal fascia. Popliteal fossa - limitation and content. Fascia tibia. Drawstrings, extensor muscles, flexors. Medial cube - limitations, content. Regeneration of the shin skin. Topography and scope of innervation of the tibial nerve and peroneal nerve and their branches.

Exercise 11: Short muscles of the foot: the muscles of the back of the foot and the plantar muscles. Dishes and femoral artery - topographies, branches, accompanying veins. Popliteal artery - beginning, course, division. Tibial arteries - the course, branches. Knee joint network. The system of superficial and deep veins of the lower limb - practical remarks. Lymphatic system of the lower limb, group of lymph nodes. Anatomy of a living person: watching and groping bone points, muscles and tendons on the lower limb, pulse tests of typical places. Settings of movements and muscles performing them in individual joints of the upper and lower limb. X-ray anatomy, upper and lower limb angiography. Pond nets.

TEST 1

Exercise 12: Surroundings and orientation lines of the chest. Spine characteristics (division into segments, curvature, spinal canal) Spine function. Features of the circle construction and characteristics of individual sections. Strict and mobile connections within the spine (structure and structure of the intervertebral disc). Ribs - construction features (rib characteristics of the first). Bridge - morphological features. Combination of ribs with a sternum and spine. General structure, shape variability and chest mechanics. Human anatomy - defining bone points of the chest (cervical incision and sternum process, rib arch, subostral angle, spinous processes of the vertebrae). Counting ribs. X-ray anatomy of the bones of the spine and chest. Chest muscles (trailers, innervation, vascularization, activity): superficial - greater pectoral, minor pectoral, subclavian, frontal teeth; deep - mm. intercostal, mm. transverse, transverse chest. Topography of the vaso-nerve cord in the intercostal space. The thoracic fascia. The vascularization of the chest walls.

Exercise 13: Branches of the subclavian artery (internal thoracic parenchyma, intercostal upper ventricle, thoracollar column, lateral thoracic parenchyma). Thoracic aortic wall branches (upper diaphragmatic torso, posterior intercostal volume). Venous outflow from the chest walls (odd venous system, skin veins of the front chest wall). An unevenness in the chest wall. Shoulder plexus - supraclavicular part. Intercostal nerves. The mammary gland - structure, vascularity, innervation, activity and drainage routes of the lymph from the nipple. The ridge - the area and orientation lines on the ridge. Muscles of the back (trailers, innervation, vascularization, activity): superficial - trapezius, m. The widest ridge, parallelogram, larger and smaller, m. Levator, mm. toothed rear; deep - m. spine rectifier. Sub-healthy muscles - trailers, innervation, vascularization, activity. Spine fascia (thoracolumbar fascia). Dorsal branches of thoracic spinal nerves.

Exercise 14: Ascending aorta and aortic arch, upper main vein, brachiocephalic veins, diaphragmatic nerves - topographic relations, activity. Pleura - definition, division. Pleural pleas. Pulmonary ligament, mesentery of the lung, pleural compresses. Pleural and pleural vascularization. Pleura activity. Trachea - definition, topographical relations, tracheal wall construction. Splitting the trachea and the difference between the right and left main bronchi. Tracheal vascularization and innervation.

Exercise 15: Lungs - topographical relations, general structure (arrangement of the lung root part within the lung cavity on the right and left sides). Division of intrapulmonary bronchial tree. Broncho-pulmonary segments. Structure of the lung parenchyma (definition of the pulmonary group). Functional and pulmonary vascularization. Pulmonary ailment. Lung lymphatic system. Pulmonary function (ventilation of the lungs, diffusion of gases through the vesiculose-capillary membrane). Diaphragm - definition, part of the diaphragm. Openings, slots, crevices and their contents. Diaphragm operation. Pleading and vascularization. Diaphragmatic hernia. Mechanics of breathing and types of breathing. Definition and division of mediastinum. The organs, vessels and nerves of the upper, front and rear mediastinum. Thymus - structure, topographic relations, activity.

Exercise 16: Heart - topographic relations in the chest (location, shape, fixation). Morphological features of the outer surface of the heart. The construction of the heart wall. Construction of individual heart cavities. Heart valves - construction, operation. Throw the valve on the front of the chest. Coronary circulation (topography of coronary arteries, extent of vascularization, vascularisation of the conducting system). Outflow of venous blood from the walls of the heart. Heart anatomy. The influence of the autonomic nervous system on myocardial function and the conductive system.

Exercise 17: The lymphatic system of the heart. Pericardium - definition, division (pericardial sinus), activity, vascularization, innervation. Thoracic aorta - topographical relations, branches. Pectoral cord - beginning, course, inflows. Dishes and lymph nodes of the chest. Fetal circulation - fetal circulation remains in the chest. The thoracic part of the

sympathetic trunk (topography, branches), topography and branches of vagus nerves in the thoracic region. Interpretation of X-ray images of organs and chest vessels

Exercise 18: Around the neck. Muscles of the neck (superficial - wide neck, sternocleidomastoidal, central - subcranial and excentric mm, deep - inclined) - trailers, innervation, vascularization, operation. Foreskin - division: Fascia of the neck. Neck triangles - limiting the content. Cervical plexus - definition, topographic relations, skin and muscle branches. The dorsal branches of the cervical spine. Topography of the sublingual nerve. Additional nerve - topography, range of innervation. The cervical segment of the sympathetic trunk - topography and branches. The lymphatic system of the neck. The thyroid gland and parathyroid glands - structure, topographic relations, vascularity, innervation, activity. Common carotid artery - place of departure, course, division (carotid gland - innervation, activity). The ball of the rail. Nerve-nerve cord neck - composition, topographic relations.

Exercise 19: Internal carotid artery - the course on the neck. Vagus nerve - cervical segment (topography and branches). External carotid artery - topographic relations, branches Upper thyroid artery, lingual artery, occipital artery, posterior aorta, ascending throat. External jugular vein - formation, topography, inflows. Larynx - the skeleton of the larynx (morphological features of the laryngeal cartilages). Strict and joint connections of the laryngeal cartilage. Mechanics of the larynx joints. Membrane and ligamentous connections of the laryngeal cartilage with adjacent forms. Membrane and ligamentous connections inside the larynx (elastic cone, quadrilateral membrane). Functional division of the larynx muscles (trailers). Division of larynx cavities. Limiting the entry of the larynx. The upper larynx cavity. Indirect laryngeal cavity (definition of vestibular folds, vocal folds, vocal lips, glottis, laryngeal pocket). Bottom of the larynx. Vascularization and innervation of the larynx. Larynx function.

TEST 2

Exercise 20: General concepts. Division into the surroundings. Pelvis as a whole. Detailed structure of the pelvic and sacrum. Cross-iliac joints and their function. Pubic symphysis. Pelvic ligaments. The sock is bigger and smaller. Curtain hole. Dimensions of the pelvis, conjugate, pelvic surfaces. Abdominal wall - layers. Abdominal muscles - trailers, innervation, vascularization, activity. The concept of aponeurosis. Structure of the abdominal muscle sheath above and below the arcuate line and its contents. The internal surface of the anterior abdominal wall - folds, pits. The inguinal canal - location and limitation of inguinal rings (superficial and deep), walls, course and contents of the inguinal canal. Places of reduced resistance of the abdominal wall - replace and give limitations. Concept of a hernia. Abdominal hernia - congenital and acquired, internal, detailed knowledge of anatomical relations in straight and oblique inguinal hernia. Human anatomy - bone pelvic points, Lanza point, Mc Burney and correlation of the position of individual organs with the sounds of tapping the abdominal cavity.

Exercise 21: Peritoneum- layered structure, peritoneal functions. Peritoneal cavity, peritoneal sac. The network bag - location and restrictions, entries into the network bag, network bag mesenteries and walls, organs adhering to them. The network is smaller and larger. The construction of mesentery and ligaments in the abdominal cavity. Organ-to-peritoneal ratio - intra-, extrinsic and retroperitoneal position. Mutual placement of abdominal organs - replace these organs, indicate their location, determine what organs are adjacent. Determine the location of specific organs on the living subject. Gastrointestinal tract - parts, general structure of gastrointestinal walls - layers, innervation. The abdominal part of the esophagus. Topography of vagus nerves in the esophagus's surroundings. Esophageal vasculature. Stomach - external and layered structure. Gastric mucosa - mucous glands, separation of structure in different parts of the stomach, gastric digestive enzymes. Structure and activity of the pylorus.

Exercise 22: Duodenum - external and layered structure. Duodenal mucosa - duodenal glands, duodenal digestive enzymes. Duodenal warts. Gut and winding ileum - location of the course, division into parts. Structure of the intestinal mucosa in the proximal and distal segments. Small intestine functions. Arterial vascularization of the stomach, duodenum, jejunum and ileum. Angioarchitectonics of vessels running in various sections of the intestine. Meckel diverticula - location, practical meaning. Intestines, colon (ascending, transverse, descending, sigmoidal, rectum) - location, function, vascularity, attitude to the peritoneum. Appendectomy - construction, meaning, location variants. Differences in external structure, mucosa and angioarchitektonics of the small and large intestine. The ratio of the organs of the gastrointestinal tract to the peritoneum. X-ray images of the gastrointestinal tract.

Exercise 23: Liver - location, external structure, division into lobes. Cavity, liver ligament. Construction has altered hepatic function and liver function. Bile - origin, physiological significance. Inside, hepatic bile ducts. Functional and nutritional vascularization of the liver. Liver veins. The concept of the liver segment, liver division. Intrahepatic bile ducts and their topography. Gallbladder - external structure, location, function. Anatomic and functional valves in the bile ducts. Pancreas - location, division into parts, fine structure. Enzymatic and hormonal activity of the pancreas. Pancreatic ducts and their topography. Pancreatic vascularization. Digestion of foods in the digestive tract. Spleen - location, internal and external structure, ligaments. Spleen function. Vascularization. Abdominal aorta - layered walls, crossing the diaphragm, location, aortic branches and their topography. Arterial abdominal circulation in the abdominal cavity, physiology of visceral circulation.

Exercise 24: The lower main vein - the layered structure of the walls, the passage through the diaphragm, the tributaries, the areas from which it collects the blood. The concept of portal circulation. Portal circulation in the abdominal cavity and its physiological significance. Formation and topography of the portal vein. Portal hypertension. Ocular circulatory, gullet, renal, rectal and retroperitoneal circulation. Anatomical connection of the upper and lower main vein. Dishes and lymph nodes in the abdominal cavity, dairy tank. Fetal circulation - outline. Remains of fetal circulation in the abdominal cavity. The

autonomic nervous system - the physiology of the sympathetic and parasympathetic parts in relation to the organs of the digestive tract. Lumbar, ventral and pelvic segment of the sympathetic trunk. Visceral plexus - structure, location, branches, secondary plexuses. Neural strands in the gastrointestinal wall. Visceral and somatic pain in the aspect of innervation of the abdominal organs. Head fields

Exercise 25: Kidney - location, external structure, fixation of the kidneys. Kidney bags. Structure of the kidney in the frontal section. Nefron - construction and operation. Renal vascularization. Stubble construction of urinary outflow routes. Ureter - layered walls, course, topography, peristalsis. Urinary bladder - external structure, relation to the peritoneum. The structure of the bladder mucosa - the bullous triangle. Vascularization and innervation of the bladder. The mechanism of holding and displacing urine. Urethra - the course, the difference in the structure of the male and female urethra. Adrenal glands - location, external structure, activity. Layered internal structure - hormones corresponding to individual layers and their activity.

Exercise 26: Crotch and crotch area in men and women. Pelvic diaphragm, urogenital diaphragm - parts, structure, operation. Rectum - layered structure, detailed mucosal structure, arterial and venous vascularization. Anus. Varicose veins and haemorrhoid nodules. Internal iliac artery - visceral and wall branches. Lumbar plexus, sacral plexus - formation of position, short and long branches. The pudendal nerve - topography and range of innervation. Ductus, sciatica-rectum.

Exercise 27: The epididymis - structure, function. Vas deferens - the course. Spermatic cord - elements included in the spinal cord, the course of the spermatic cord. Prostate gland - location, structure, detailed topographic relations. Seed vesicles and bulbous-tubular glands. The physiological significance of additional sexual glands. Anatomical relations during rectal examination. Scrotum. The penis - external and internal structure, vascularization and innervation. Erection and ejaculation mechanism. Urethra - the course, division into parts, mouth glands. Genetic, gonadal, somatic, social-psychotic gender. Sexual dimorphism in the field of general body structure. Skeleton. Inner love of the external genitalia.

Exercise 28: Ovary - location construction, ligaments, vascularization. Hormonal activity of the ovary. Releasing an ovum - an ectopic pregnancy. Ovoid - division into parts, layered walls, activity, vascularization. Uterus - external and layered structure. Endometrium, myometrium, perimetrium, parametricum. Correct and incorrect position and position of the uterus. Uterine ligaments. Cyclic changes in the endometrium. Vulva - crotch, vestibule of the vagina and vestibular glands, urethral meatus, clitoris, labia majora and larger, hymen. Vagina - a layered structure of vaginal vault walls. Female urethra. Anatomy of insemination and fertilization. Childbirth - birth canal topographical relations during rectal and two-handed examination in women.

TEST 3

SEMESTER II – laboratory classes topics

Exercise 1: Basic knowledge about skull bone structure: composition, shape, internal structure, development. Identification of constituent bones: even and even bones, division into splanchno - and neurocranium. Individual development of the human skull - bones formed on the connective and cradlear surface. Baby and infant skull, menses. Deadlines: vault, forehead, ophthalmia, temple, occiput. Connections of the skull bones: tight (trabozrosty, cartilage, bonerosis) and joint. Wedging as a special type of connection. Sutures: coronary, sagittal, carbon-like, parietal-parietal, scaling, wedge-scaling, parietal-mammary, occipital-mammary, front-zygomatic, wedge-clavicular, palatal, transaural, fronto-nasal, maxillary-maxillary, zygomatic-maxillary . Approximate time of seam overgrowth.

Exercise 2: Articular joints - examples, temporomandibular joint, (lifting, lowering, easing, reversing, movements, lateral and mechanics of movements. Differences in the structure of the skull related to age and sex, skull base and main openings based on the skull. - and skulls under the influence of injuries - anatomical basis of skull base fractures

Exercise 3: Base of the skull - the front, middle and posterior (bone forming these holes, the boundaries of the pits), the contents - all holes on the base leading the larger vessels and the nn. cranial or their branches. Skull bones: occipital (basal part, scales, lateral parts - and structures associated with these parts, including the throat nodules, elements on the external and internal surface of the scales: external and internal occipital protuberances, cervical margins, external and internal occipital crests) , sinus furrows: sagittal sagittal, transverse, occipital protuberance, sublingual nerve channel, conduit canal, cervical incision), parietal (margins, elements visible on the external and internal surface: parietal tumor, temporal border, sulcus of the superior sinuum), temporal (part scaly, mammary, tympanic, rocky = pyramid and elements related to these parts, eg zygomatic process, mandibular apex, nipple, base, top and three pyramid surfaces, internal auditory hole, cervical incision, carotid artery canal, styloid process , nipple and nipple, facial nerve canal, conduit external hatch), wedge (shank, large and smaller wings, winged processes and elements related to these parts: Turkish saddle, sphenoid sinus, sloping processes, carotid furrow, round hole, oval, spine, visual canal, wing bottom), frontal (scales, orbital parts, nasal part and related elements: frontal tumors, glaucoma, supraorbital margins, apertures and supraorbital incisions, frontal incision, frontal opening, zygomatic process, sulcus of the superior sinualis, cerebral cortex, fingerprints, nasal spike) , zygomatic (shank, appendix, temporal), maxillary (shank, appendix, zygomatic, frontal, alveolar, palatal and related components: maxillary and maxillary sinus, orifice and orbital margin, nasal incision and anterior nasal spike, bottom notch , open channel, openings), sieve (sieve plate, vertical plate, labyrinth and elements with them) associated: rooster comb, lateral lobe = orbita, medial lobe, upper, middle nasal turbinates), palatine (horizontal lamina, vertical plaque, appendages: pyramidal, orbital, cuneiform and related components: palatine major opening, smaller).

Exercise 4: Bony boundaries of the orbit and nasal cavity. Temporal fossa (temporal muscle, superficial and deep temporal vessels, deep temporal nerves from V3, temporal branch of the zygomatic nerve-from V2, auriculotemporal nerve from n.V3, temporal and zygomatic

branches from n.VII), infratemporal fossa (pterygoid muscles, pterygoid venous plexus, maxillary artery, mandibular nerve, chorda tympani), retromandibular fossa (part of the parotid gland, terminal branches of the facial nerve, branches of the external carotid artery: posterior auricular artery, superficial temporal artery, maxillary artery, auriculotemporal nerve). Orbit - walls of the orbit. Pneumatic spaces of the skull associated with the frontal, ethmoid, sphenoid, maxillary and temporal bones. Cervical spine – characteristic features, specific structure of vertebra I, II, VII. Connections of the skull with vertebra I and vertebra I with II – upper and lower head joints – atlanto-occipital and atlanto-axial. Mechanics of head joints. Muscles of mastication: masticator, temporal, pterygoid, lateral and medial. Muscles of facial expression: muscles of the cranial vault, surrounding the eyelids, surrounding the mouth, surrounding the nostrils, auricle. Muscles of the neck: superficial layer - broad neck muscle, sternocleidomastoid, middle layer: supra- and infrahyoid muscles, deep layer: scalene muscles, prevertebral muscles.

Exercise 5: Nasal cavity - vault, side walls, bottom, frontal nostrils - \ "gates \" to the nasal cavity, posterior nostril. Nasal cartilage - septum, lateral, greater wing, smaller, navicular, przymieieszowa. The nasal noses. The olfactory field and its location. Bones forming the hard palate, the muscles of the palate and their innervation. The olfactory route. The paranasal sinuses - wedge, frontal, maxilla and sieve cells - the size of the sinuses, the meaning, the innervation. Places of the mouth of the paranasal sinuses and tears to the nasal cavity. Language. Salivary glands. In order to. Throat. The warts of the tongue, their role and location - surrounded, threadlike, conical, mushroom-like, deciduous. Muscles of internal and external language. Vascularization and innervation of the tongue. The way of taste: receptors - taste buds. First neuron - coil cells in a reel: elbow (VII), lower coil (IX and X), hence through a lone band. The second neuron - the nucleus of the lonely band, from there to the opposite hill. Third Neuron - the arcuate nucleus additional hills - to the bark of the island and the lower part of the median bend.

Exercise 6: Salivary glands: parotid, submandibular, sublingual - composition of saliva and meaning, functional division of the salivary glands, mucus, mixed glands, location, place of mouth in the mouth. Secant teeth, canines, premolars and molars. Pattern of dairy and permanent dentition. Throat - division into parts: nasal, oral and laryngeal. Diagram of the construction of the throat wall. Spit and levers of the throat and their innervation. A sensory innervation of the throat. Angiosperms and its clinical significance. Vascularization of the head: arteries and veins of the head and neck.

Exercise 7: Tires of the brain and spinal cord. The hard tire and its creations: the sickle of the brain and the cerebellum, the tent of the cerebellum, the supra and supratentorial space, the indentation of the tent, the cerebellar sickle, the diaphragm of the saddle. Clinical significance of the above structures. Venous sinus duralis, arachnoid granulation. Tincture and innervation of the dura mater. Tire vascularization. Over- and "sub-dural space". Spider tire, its bars and their mechanical role. Cerebrospinal fluid reservoirs. Perivascular spaces (Virchowa-Robina). Spinal cord tires.

Exercise 8: Cerebrum. Patches, bends and furrows. The boundaries of the patches, the ability to indicate the corners of a given piece. Microscopic construction of gray and white matter. Functional centers in the cerebral cortex: limbic system, hippocampus formation and functions assigned to them.

Exercise 9. Amygdala, bulwark, basal ganglia: caudate nucleus, lentic nucleus. striatum; caudate nucleus + lenticular nucleus crust with a similar embryonic origin and function (neostriatum). Pale knob (globus pallidum). Internal structure of hemispheres - white substance. Mating, commissable and projective roads - precise definitions, examples of individual roads. Inner, outer, last bag. Brain scrotals: large, front, posterior, vaults, glands. Long and short mating paths - examples. Cerebrospinal fluid - composition and function. The formation of cerebrospinal fluid in the choroid plexus of all chambers. Absorption of cerebrospinal fluid. Grains of arachnoid. Side chambers and chamber third - production and circulation of cerebrospinal fluid. Corners of side chambers. Chamber walls and connecting holes.

Exercise 10: Intracranial division: thalamencephalon (epithalamus, thalamus, metathalamus) subthalamus, hypothalamus. Szyszynka and its product - melatonin. Sweethearts, nucleus of the headgear. Hill - specific nuclei (with a relatively well-known function): lateral knee (visual pathway), medial condyle body (auditory pathway), VPL (ventral posterolateral) - from medial to somatosensory bark, VPM (ventral posteromedial) - from tractus trigeminothalamicus for the somatosensory cortex, VL / VA (vetral lateral and ventral anterior) from the cerebellum and ganglia of the base to the motor cortex, AV (anteroventral) - from the mammary bodies to the cingulate cusp.

Exercise 11: Division of the hypothalamus into parts: ophthalmic, nodular, and mastic. Nuclear hypersensitive (neurosecretory), paraventricular (neurosecular), super-cruciate, anterior nucleus. In the medial-nodule part: dorsomedialis, ventromedialis and at the bottom of the funnel cone - infundibularis (arcuatus). Complex of testicular nuclei and hypothalamic posterior nucleus. The action of the hypothalamus. Pituitary, division into parts: posterior, i.e. neuropathies, which is the funnel and the posterior and frontal lobes, i.e. the pituitary gland. Influence of the hypothalamus on the pituitary gland. Neurosekrecja. Hypothalamic-pituitary portal circulation. Hormones of the anterior pituitary gland. Third chamber, its position, holes connecting with lateral chambers, delays.

TEST 1

Exercise 12: Elements of the external brain stem structure - all. Structure of the brainstem on cross-sections through upper and lower hillocks, bridge, bolt, crossroads of pyramids. Elements: slender and wedge bunch and their nuclei, pyramid intersection, internal arcuate fibers, medial band (more along the auditory path), oligoneum, lower, middle and upper cerebellar boughs (see next exercise), red core, black essence, cap, cover, water supply. Exit places and nuclei nn. cranial in the brainstem.

Exercise 13: The fourth chamber, the bottom of the fourth chamber. The ceiling of the fourth chamber: the cerebellum, the branches of the cerebellum, and the curtains of the choroid and the choroid plexus. Bottom of the fourth chamber: parallelogram bottom. Division and structural elements distinguishable at the bottom of the parallelogram in the upper and lower triangle. Location of nuclei nn. cranial in the brainstem.

Exercise 14: Vermis and hemispheres, upper and lower surface. Morphological division into lobes: frontal lobes, first fissure, mid-posterior lobes (the cerebellar hemisphere, pyramid and suppository suppository), posterior lateral aperture, papulo-floc lobe (papules + lumps). Tonsils of the cerebellum. Morphological and clinical division into longitudinal zones: worm, intermediate zone (post-periphery), lateral zone. The cerebellar cortex, the indigenous body. Nucleus: top, spigot + globular, toothed.

Exercise 15: Branches of the cerebellum: the lower (the centripetal fibers from the spinal cord and the brainstem), the middle (the centripetal fibers from the bridge's nuclei), the upper (centrifugal fibers, mainly from the nucleus to the bark, the displacement path from the cerebellum). The structure of the cerebellar cortex - ext. molecular layer, Purkinje cell layer, granular layer. Functional aspects of the cerebellum morphological structures. Reticular formation, functions: motor, sensory, visceral, associated with consciousness, sense of existence, vigilance.

Exercise 16: External and internal structure. The concept of rope (funiculus), horn (corn) and column (columna). Interneurons: mating, commissural and projective. The substantia gelatinosa, nucleus proprius, fasciculus dorsolateralis (Lissauer tract), nucleus dorsalis. Movement cells of the anterior horns. Sympathetic intermediate nucleus (nucleus intermedio-lateralis), the parasympathetic nucleus intermedio-medialis. White, gray front and back dense. White matter: long ascending fibers, long descending fibers, short (propriospinalis) connecting different segments of the core. Clinical syndromes: spinal shock, Brown-Sequard syndrome, syringomyelia. Cortico-spinal and cortico-motor (motor) roads.

Exercise 17: Descending roads: vestibulospinalis - posture correction, corticospinalis, reticulospinalis, rubrospinalis, tectospinalis. The corticospinal (pyramidal) pathway, the motor pathway of the spinal nerves. Precentral gyrus - cell body and neuron. The cellular body II- the spinal cord's frontal horns. Spastic paralysis (paralysis spastica), i.e. inability to perform movements along with pathological muscle tone. Paracysis flaccida, e.g. after traumatic nerve injury, in the disease of Heine and Medina etc. The corticobulbaris pathway. Central and peripheral neuron infection. Stroke.

Exercise 18: Roots, trunk, branches. The front root: the front and side of the anterior motor mobile motions. Back root, ganglion spinale. Stem n. Spinal: branches (ventral, dorsal, meningomous, connecting white-confluence and connecting gray-zwójjowa.). Essence gray core in cross-section - front, rear, lateral, intermediate gray essence. White essence in cross-section - front cord, lateral and posterior spinal cord, spinal cord infiltration and their relation to spinal cord elements. Surface pathway (warmth, cold, pain) - anterior-lateral apical-lateral

pathway. The path of conscious deep feeling and pressure, discriminating touch and vibration. Strands, scrolls, nerves. Centers of the autonomic nervous system in the spinal cord (indirect and lateral nucleus and intermediate medial nucleus).

Exercise 19: Internal carotid puncture: cervical part - from the beginning to the rocky part of the temporal bone. Then, through the cervical opening, where it is surrounded by a venous plexus that protects the free ripple and further detailed course. Branches: cavernous sinus, ocular (under the nerve in the visual channel): middle volleyball, tear, end branches: t plexus torso, dorsal rhinoplasty, back connective tissue: (connects to the back of the brain), choroidal choroid: to the choroid plexus of the lateral ventricle, frontal brain: frontal connecting, middle brain: (hh. middle, oval cortical). Generally range: brains, orbits with contents, eyelids, durabura of the anterior cranial fossa, mucus membrane, sinuses and nasal cavity. Spinal cord: branches: posterior spinal column - can run, locally reinforcing up to the end of the core, t. Spinal front, posterior lower back of the cerebellum, basal: lower anterior cerebellum, labyrinth, branches to the bridge, upper cerebellum, final forks: back of the brain (hg choroidal, central hg, cortical). Arterial cerebral circle.

Exercise 20: Outflow of venous blood from the brain. Superficial and deep veins of the brain. Sinus venous dura. Aspects of anatomical-practical: haemorrhagic and ischemic strokes, aneurysms, arteriovenous malformations, epidural hematoma, subdural, subarachnoid haemorrhage. Strokes in the vicinity of the inner bag. Spinal cord dissection.

TEST 2

Exercise 21: Superior centers of the autonomic system (limbic system, amygdala, hypothalamus, locus coeruleus, reticular formation and others). Functional division of the autonomic system. The sympathetic part. Sympathetic trunk, sympathetic nerves: gg. along the arteries, nn. cardiac, nn. visceral. Strands: cardiac, intraosseous, upper and lower abdomen. Upper cervical ganglion. Branches of the heart. A starburst scroll. Visceral nerve greater. Visceral nerve smaller. The parasympathetic part of the autonomic nervous system. Ciliocortex (g. Ciliare), wing-palatal ganglion (g. Pterygo-palatinum). Subgital coil (g. Submandibulare) of the fiber from the salivary gland upper n. VII through the tympanic phalanx. The ear coil (g. Oticum), the fibers from the dorsal nucleus n. IX (also called salivary lower) - through the tympanic nerve and its extension - rocky smaller, fibers to the parotid gland and cheekbones. Nerve X - the dorsal nerve nucleus X range of supply. The cruciate region - the intermediate nucleus (nucleus intermedio-medialis), at the level of neuromers S2-S4. Pelvic visceral nerves (nervi splanchnici pelvini = nervi erigentes). Intestinal intestinal part of the autonomic system. - plexus convolutional neural network along the entire length of the gastrointestinal tract, including the vesicle and the pancreas. Intramuscular plexus (plexus myentericus seu Auerbachii), submucosal plexus (plexus submucosus seu Meissneri).

Exercise 22: Facial nerve VII (facialis): two parts - greater movement, less so-called nervus intermedius - parasympathetic-sensory. The larger part: stapedius, stylohyoideus, posterior

digastricis gaster, facial expressions and buccinator, platysma and occipitalis. Nerves - branches of the facial: up to mm. expressions: n. temporalis - frontal m., n. zygomaticus - oculi orbicularis, n. buccalis - buccinator et orbicularis oris, n. mandibularis - orbicularis oris, n. cervicalis - platysma, n. auricularis posterior - m. occipitalis. The smaller part: parasympathetic: lacrimal gland, submandibular and sub-sublethal salivary glands, mucus membrane glands. nose, sinuses, hard and soft palate. Parasympathetic fibers in the upper (tear) salivary nucleus. Parasomal fibers, large rocky nerve (lacrimal gland and nasal glands) and eardrum (submandibular and sublingual gland) Nerve V. Special feeling: taste of two-thirds of the tongue, hard and soft palate, cell bodies in the ganglion of the elbow. in the tympanic cavity, the rostral part of the nucleus of the lonely band (the taste nucleus). Clinical aspects related to the course of the nerves V and VII.

Exercise 23: Geptear nerve (glossopharyngeus), innervation range: one transversely striated muscle - stylopharyngeus (sore throat when speaking and swallowing), parasympathetic fibers through the ear, the parotid gland and the posterior part of the tongue, feeling (unconscious) from the carotid sinus and a cervical ball - through the branch of the carotid artery sinus, the sensation of taste from the back 1/3 of the tongue through the lower coil, the general sensation from the back 1/3 of the tongue, the ear's skin, internal area. tympanic membrane, tonsils of the palate, throat through the upper or lower nerve of the nerve IX. The course of the nerve IX. Plexus tympanicus: from the northern part of the gallery, connecting the n. VII and L. cervico-tympanum from cervical-internal plexus plexus. Erroneous nerve (vagus) X extent of innervation: skeletal muscles of the throat, soft palate (without tensor veli palatini - V3), larynx – with except stylopharyngeus (IX) and one tongue muscle (palatoglossus). Throat plexus formation arises from gg. IX, X and sympathetic fibers, parasympathetic smooth muscles and glands of thoracic and abdomen (including thyroid, parathyroid glands), conduct visceral sensation from the chest and abdomen, from receptors in the aortic arch wall, from aortic bodies near the aortic arch, feeling General from the posterior base of the skull, the skin of the external auditory canal (posterior and lower wall), a piece of tympanic membrane, throat, larynx. The course of the vagus nerve, upper laryngeal nerve, Laryngeal recurrent laryngeal nerve, laryngeal laryngeal nerve (motor for all larynx muscles with the exception of the annular thyroid).

Exercise 24: Tricuspid V (trigeminus), thrombotic ganglion (trigeminale ganglia). Ramus seu nervus ophthalmicus - V1 - comes out - upper orbital fissure, Ramus sev nervus maxillaris - V2 - comes out - round hole (foramen rotundum). Ramus V3 seu nervus mandibularis comes out - oval hole (foramen ovale). The scope of innervation: motor: chewing muscles, m. Tensor tympani, m. Tensor veli palatini, mylohyoideus, venter anterior m. Digastrica, sensory: conjunctiva, eyeball, sinus mucosa, nasal and oral cavity, a little extrinsic the surface of the eardrum, the ankle of the anterior and middle skulls. The main division of the branches: Ophthalmic nerve - V1: lacrimal, frontal: (peripheral, supraorbital, nerve to the frontal sinus), nasopharyngeal: (long and short cilium, subpanular, front and posterior screen), Tire to the tent of the cerebellum. Jaw nerve - V2: zygomatic: (zygomico-temporal, zygomico-facial), suborbital: (nasal external, labial upper, alveolar upper hindquarters, central and frontal), wing-palatal: (orbital, palatal larger and smaller, nasal posterior upper , guttate), meningitis

to the middle and anterior cranium. Mandibular nerve - V3: buccal, anterior-temporal: (facial, anterior, external auditory canal, synovial joint joint), lingual, alveolar lower, aortic to the anterior and middle cranial fossa, medial posterior: (to tensor veli palatini, to tensor veli tympani), chewing, temporal deep, lateral lateral, up to mylohyoideus, to the abdomen of the anterior twin-dung. Extra XI nerve (accessorius) - its nuclei lie in the spinal cord, range of supply. Nerve XII sublingual (hypoglossus) range of procurement. Triangle n. Sublingual at the bottom of the IV chamber.

Exercise 25: The sclerolus, cornea - layers and innervation, conjunctival and eyelid conjunctiva, conjunctival sac, eyelid apparatus. Membrane - choroidea, terms: uvea, iris, corpus ciliare. The front and back chamber of the eye. Production, absorption and circulation of eye fluid. Glaucoma. Eye as an optical device. The concept of diopter, the refractive power of lenses, lens defects. Optical defects of the eye: short and far-sightedness, long-sightedness, astigmatism, spherical and chromatic aberration. Lens - layers. Endosperm and cataract (cataract). Retina, its parts, crotchets and layers: pigmentary and neuronal. Retinal layers. Blind spot, macula yellow. The formation of the optic nerve. The way of sight. Receptors - retinal and reticular rod cells. Nn. cranial III, IV, VI, and motor, autonomic and sensory innervation of the eye. Third oculomorphoc nerve (oculomotorius). It supplies four of the six outer muscles of the eye, upper eyelid levator (levator palpebrae superioris), pupil sphincter (constrictor pupillae) and ciliary muscle. Tier IV nerve (trochlearis). Nerve VI abductor (abducens) supplying the simple side eye.

Exercise 26: Division: external, middle and internal ear. Elements of the structure of the outer ear, the external auditory canal. Cylinder pit - division into pneumatic spaces. The walls of the tympanic cavity, tympanic contents: auditory ossicles and their connections. Eardrum - acoustic mechanics in the middle ear. Inner and outer ear midlife and clinical consequences. Hearing receptor - Corti's organ. Endolimfa. Perylimfa. The mechanism of hearing - the way of hearing. The mechanism of registration of head movements in space. The complexity of balance. Construction of the organ of Corti. Series of internal and external cells. The Corti tunnel. The role of internal and external cells. Stereocillia. Hearing (multieuronic) route: receptors - the internal nerve-like hair cells of the snail (organ Corti). The first neuron - bipolar cells of the spiral coil of the snail (ganglion spirals cochleae). Second neuron - abdominal and dorsal cochlear nucleus. Third Neuron - lateral testicle nucleus, nucleus of the trapezius body, olives nucleus, lower mucus nuclei. The "fourth" neuron - the nucleus of the medial knee-shaped body. The axons of these cells form the auditory radiance that runs through the posterior part of the inner capsule to the transverse temporal curves - the center of hearing. The sidebone - the fibers of the auditory path that cross in the bridge and the midbrain. The vestibular part of the bone maze: the vestibule and the three semicircular canals. Łagiewka, small bag, semicircular wires. Kinetic labyrinth (reacting mainly to angular movements of the head). Static labyrinth (mainly reacting to linear accelerations in different directions and tilting of the head without rotation). Clusters of support and sensory cells. Freckle spot, pouch spot. Otolites (otoconia - ear dust), otolithica membrane. The vestibular pathway. The first neuron - atrial ganglion cells (vestibulare ganglion) in the inner auditory canal. Second neuron - vestibular nuclei at the border of the bridge and the core.

Lower kernel (also spinal, descending), medial, lateral (Deiters) and upper. Third Neuron and Cortical Center - vestibular pathways to the hill. Cortical center in the parietal lobe.

Exercise 27: Cervical plexus: abdominal branches nn. C1-C4 core. Skin branches of the cervical plexus (occipital smaller, greater ear, transverse neck, supraclavicular). Short moving fibers up to mm. pre-vertebral neck, lateral group mm. neck and mm. straight neck. Ansa cervicalis. Diaphragmatic nerve (n.phrenicus) Posterior cervical plexus (plexus cervicalis posterior), nerves: suboccipitalis, major occipital nerve (occipitalis major) and occipitalis third. Shoulder plexus: fusion of abdominal branches spinal C5-Th, three trunks of plexus. Upper trunk C5-C6, middle trunk - C7, lower trunk C8-Th1. Stems form from the trunks, and from the branches of the bundles - individual nerves. The position of the plexus - the lateral side of the neck, axillary cavity, scapular mantle. From the supraclavicular part they pass: n. Dorsal shoulder blade, n supra-abdomen, n. Subclavian, niphthalmic long, nn. Chest, lateral, lateral, medial nora, n. coned, thoracic dorsal and branches up to mm. sloping and long neck. From the subclavian part: musculo-cutaneous n., Median n., Elbow n., Cutaneous medial forearm, upper arm, radial nodule, axillary n. Topography of the weave branch. Range of innervation. Nn. intercostal. Vascular and nervous bunch. Principles of puncturing and cutting intercostal spaces. The scope of innervation of the chest wall, abdominal wall, chest and abdominal skin (sensory), pleura and wall peritoneum. Branches nn. intercostal - muscular, cutaneous lateral and anterior, pleural and peritoneal, joint and periosteal.

Exercise 28: Lumbar-sacral plexus: part - upper, lumbar and lower plexus, sacral plexus. Lumbar spine (plexus lumbalis), abdominal branches nn. spinal L1-L4 (sometimes Th12-L4). Branches short, hh. muscular (ie, trapezius lumbar, lumbar major, lumbar minor, mm laterallateral). Long branches: n. Hip and abdomen (n. Iliohypogastricus), iliac-inguinal (n. Ilioinguinalis), n. Sex-femoral (n. Genito-femoralis), n. Dermal lateral thigh (n. Cutaneus femoris lateralis), n. Curtain (n. Obturatorius) and femoral (n. Femoralis).

The scope of innervation and the course of these nerves. Cross plexus (plexus sacralis): abdominal branches of lumbar and sacral spinal nerves. Short branches, supply range: pear-shaped muscle, inner binder, four-sided thighs and both mm. twins, as well as the hip joint, the periosteum of the ischial tumor and both thigh trochans. Long branches: upper gluteal nerve (n. Gluteus superior), n. Bottom gluteus (n. Gluteus inferior), cutaneous thigh nerve (n. Cutaneus femoris posterior), sciatic nerve (n. Ischiadicus), the pudendal nerve (n. Pudendus) and n. Nodular (n. Coccygeus).

Feeling and its types:

A) Special (smell, taste, sight, hearing, vestibular stimuli = linear and angular displacement of the head in space.

B) General, that is:

1) deep (from proprioceptors in muscles, tendons, ligaments, etc.),

2) superficial (pain - other than visceral, heat, cold, pruritus, some sexual sensations, touch, pressure, vibration),

3) visceral pain including thoracic and abdominal parenchyma, vessel walls and other information necessary for non-conscious autonomous regulation - about secretions, pH, osmolarity, oxygen saturation, etc.

TEST 3

3.4 TEACHING METHODS

Lecture: lectures with multimedia presentation, providing students with in-depth scientific knowledge in the field of anatomy, solving research problems

Laboratory classes: methods based on practical activities of students: practical classes in the dissection room, methods of intravital imaging of anatomical structures: X-ray, CT, NMR

Teaching aids: virtual anatomical table, anatomical models, boards, didactic films

4 METHODS AND EVALUATION CRITERIA

4.1 Methods of verification of learning outcomes

Symbol of effect	Methods of assessment of learning outcomes (Eg.: tests, oral exams, written exams, project reports, observations during classes)	Form of classes
EK_01	Observation during classes	prosectorial exercises
EK_02	Colloquium, exam	exercises, lectures
EK_03	COLLOQUIUM, PRACTICAL EXAM, TEST EXAM	exercises, lectures,
EK_04	Observation during classes, colloquium, test exam	exercises, lectures, seminars
EK_05	Colloquium, exam	exercises, lectures,
EK_06	Observation during the course of the prosector classes, colloquium, exam	exercises, lectures,
EK_07	Colloquium, practical exam	exercises
EK_08	Observation during the course of the prosector classes, practical exam, test exam	exercises, lectures, seminars

4.2 Conditions for completing the course (evaluation criteria)

Lectures

The condition of passing the course is to achieve all the results of the training, in particular, to lectures - written test (MCQ test), verified learning outcomes: EK_02, EK_03, EK_04, EK_06,

Laboratory classes

The condition for passing the exercises is attendance at classes and obtaining credits for the winter and summer semesters. Student absences due to illness should be documented with an applicable sick leave. Absences should be excused immediately after the cause has subsided, i.e. during the first class after the period of absence. Unexcused absences from classes are treated as failed exercises. Failure to make up exercises prevents taking the colloquium. Unexcused absences result in failing the semester. In unforeseen situations, the decision regarding the possibility of passing is made by the Head of the Department. A necessary condition for passing the semester is a positive result of 3 colloquia in the form of tests, ending the cycle of exercises. Each credit will include 30 single or multiple choice test questions. In order to pass the semester, no less than 60% of points must be obtained from each test. A negative result of passing the cycle of exercises can be corrected once within 2 weeks after the first date in the form of a test. For each colloquium, there is only one retake date. In the event of a lack of a positive assessment, after obtaining the Dean's consent, the student will pass the entire semester in a committee.

Verified learning outcomes EK_01- EK_08,

Final exam

The condition for admitting a student to the exam is a positive result of all 6 mid-semester tests, attendance at classes and passing the semester test from lectures in the winter semester. **A negative result in passing any thematic block results in not admitting the student to the final exam.**

The final exam consists of a **practical and theoretical part**. The condition for admitting to the theoretical exam is a positive result of the practical exam. In the practical exam, the marked anatomical structures must be recognized. Giving the correct answer within 45 seconds consists of providing the correct Polish name of the marked structure and its English name (in accordance with the current anatomical nomenclature).

1 point - the student receives for correctly providing the Polish/English name and the correct definition of the right or left side.

0.5 points – for an incompletely correct Polish/English name or a missing/error in specifying the page

0 points – for an incorrect Polish/English name

For correctly describing 1 structure (1 pin), the student can receive a maximum of 2 points (1 point for the correct Polish name and 1 point for the correct English name).

Obtaining at least 60% of the possible points means a positive result in this part of the exam.

The theoretical exam (MCQ type test), verifying the learning outcomes, consists of 100 single- or multiple-choice questions covering all the material included in the

subject program. To pass the theoretical exam, you must **obtain 60%** of the possible points from the test. **A student who failed the practical exam cannot take the theoretical exam, receiving an insufficient grade on the first attempt.**

Any comments regarding the test, including the correctness of the questions, can only be submitted during the test by raising your hand and reporting the question/problem to one of the people conducting the exam. Substantive comments on the content of the questions are submitted in writing during the test on a special sheet. The submitted comments are considered by the subject coordinator and the teachers.

If a substantive error in a question is confirmed, the question is canceled and the percentage thresholds listed below are calculated in relation to the new number of questions.

Unexcused absence from the final test results in receiving an insufficient grade.

Absence from the exam can only be excused by a rector's/dean's or doctor's note submitted within 3 days from the date of the final test to the Dean's Office and the Department of Histology and Embryology. Failure to submit a note within this period results in receiving an insufficient grade.

Knowledge assessment, verified learning outcomes:

Written test

5.0 - has knowledge of each of the contents of education at the level of 90% -100%

4.5 - has knowledge of each of the content of education at the level of 84% -89%

4.0 - has knowledge of each of the content of education at the level of 77% -83%

3.5 - has knowledge of each of the content of education at the level of 70% -76%

3.0 - has knowledge of each of the content of education at the level of 60% -69%

2.0 - has knowledge of each of the contents of education below 60%

Assessment of skills, verified learning outcomes:

5.0 - the student actively participates in classes, recognizes and is able to correctly name individual anatomical units on phantoms and in the human body; can relate knowledge of the detailed human anatomy, especially in the area of the musculoskeletal system and the nervous system with the function and tasks of individual organs.

4.5 - the student actively participates in the classes, with little help from the teacher he recognizes and is able to properly name individual anatomical units on phantoms and in the human body; can relate knowledge of the detailed human anatomy, especially in the area of the musculoskeletal system and the nervous system with the function and tasks of individual organs.

4.0 - the student actively participates in classes, with minor corrections of the teacher, commits minor mistakes, recognizes and is able to properly name individual anatomical units on phantoms and in the human body; can relate knowledge of the detailed human anatomy, especially in the area of the musculoskeletal system and the nervous system with the function and tasks of individual organs.

3.5 - the student participates in activities with corrections and teacher's instructions recognizes and is able to properly name individual anatomical units on phantoms and in the human body; can relate knowledge of the detailed human anatomy, especially

in the area of the musculoskeletal system and the nervous system with the function and tasks of individual organs.

3.0 - the student participates in classes, with numerous corrections and instructions from the teacher, but commits minor mistakes and recognizes and correctly names individual anatomical units on phantoms and in the human body; can relate knowledge of the detailed human anatomy, especially in the area of the musculoskeletal system and the nervous system with the function and tasks of individual organs.

2.0 - the student passively participates in classes, commits blatant errors in the diagnosis and proper naming of anatomical units, and can not link knowledge of the detailed human anatomical structure with the function and tasks of individual organs.

Knowledge evaluation, verified learning outcomes: EK_01-EK_05

Assessment of skills, verified learning outcomes: EK_06-EK_08

5. Total student workload required to achieve the desired result in hours and ECTS credits

Activity	Hours / student work
Hours of classes according to plan with the teacher	170
Participation in the consultations, exams	5
Preparation for tests	270
SUM OF HOURS	445
TOTAL NUMBER OF ECTS	13

6. TRAINING PRACTICES IN THE SUBJECT / MODUL

Number of hours	
Rules and forms of apprenticeship	

1. LITERATURE

Obligatory sources:

1. **Textbook of Anatomy: Volume I-III, 2e** Vishram Singh; 2014 Reed Elsevier India Private Limited
2. **Gray's Anatomy for Students.** R.L. Drake, A.W. Vogl, W.M. Mitchell
3. **Basic Clinical Neuroscience.** P.A. Young, P.H. Young, D. Tolbert

4. Atlas of Human Anatomy. Frank H. Netter

Additional sources for self-studying:

1. Clinically Oriented Anatomy. K.I.Moore, A.F. Dalley

Acceptance Unit Manager or authorized person