Ministry of Science and Higher Education of the Russian Federation

Kazan Federal University

Institute of Fundamental Medicine and Biology
Department of Morphology and General Pathology

For the students of “General Medicine” and “Dentistry” Specialties

**ANATOMY**

**Curriculum of the laboratory classes**

For the students of “General Medicine” and “Dentistry” Specialties

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| **Curriculum of the discipline** |
| 1st semester (1st year of study) |
| Lecture (2 hours): History of anatomy. Cells, tissues, organs. Conception of organism unity. Organism and environment.Lecture (2 hours): Bone. Types and functions of skeletal structures. Bone’s classification.Lecture (2 hours): Syndesmology. Lecture (2 hours): Arthrology. Synarthrosis. Joints.Lecture (2hours): The myology. Classification of muscles. Lecture (6hours): Fasciae and intercellular spaces. Topography of muscles.  |
| **Lesson 1**: The vertebral column: the vertebrae, the sacrum, the coccyx. Chest bones: the sternum, the ribs.**Lesson 2**. Pectoral girdle: the clavicle, the scapula. The bones of free part of upper limb: the humerus, the bones of forearm (radius, ulna), bones of the hand.**Lesson 3**. Pelvic girdle: the hip bone. The bones of free part of lower limb: femur, patella, leg bones (the tibia, the fibula), bones of the foot.**Lesson 4.** Neurocranium: the occipital bone, the parietal bone, the frontal bone, the ethmoid bone, the sphenoid bone, the temporal bone and its canals.**Lesson 5.** The facial skeleton: the maxilla, the palatine bone, the zygomatic bone, the nasal bone, the lacrimal bone, the inferior nasal concha, the vomer, the mandible, the hyoid bone.**Lesson 6.** The calvaria. External and internal surfaces of cranial base. The temporal fossa. The infratemporal fossa. Cranial fossa. Orbit. The bony nasal cavity. The bony oral cavity. The pterygopalatine fossa. **Lesson 7.** Skeleton as a whole.**Control**  **«Osteology»** |
| **Lesson 8. Solid (non-synovial) joints (sutures, fontanelles, gomphoses), cartilaginous joints). Synovial (cavitated) joints (**the temporomandibular joint). Vertebral joints, The atlanto-occipital joint, the atlanto-axial joint. Vertebral column as a whole. The thoracic joints. The joints of rib. The joints of pectoral girdle. The thoracic cage as a whole. The joints of shoulder girdle: acromioclavicular joint, sternoclavicular joint. The joints of free upper limb: The shoulder joint. The elbow joint. The joints of forearm. The wrist joint. The joints of hand. The joints of pelvic girdle. Pelvis as a whole. Joints of Free Lower Limb: The hip joint. The knee joint. The joints of leg. The ankle joint. The joints of foot. |
| **Lesson 9.** The muscles of head. The masticatory muscles. The fasciae of head. The facial muscles: epicranial, external ear muscles, muscles around eyes, nose and mouth. **Lesson 10.** The muscles of neck: superficial, medial, deep. Topography of neck. Fasciae and intercellular spaces of neck. **Lesson 11.** The muscles of upper limb. The muscles of pectoral girdle, shoulder, arm. The muscles of hand. The fasciae of upper limb. The tendon sheaths. **Lesson 12.** The muscles of lower limb. The muscles of pelvic girdle. The muscles of hip. The muscles of leg. The muscles of foot. The fasciae and tendon’s sheaths of lower limb.**Lesson 13.** The diaphragm. The muscles of chest. The fasciae of chest. **Lesson 14.** The muscles of abdomen. The rectus sheath. Linea alba. The inguinal canal. The fasciae of abdomen. The muscles of the back. **Written control/MCQ for “Syndesmology and arthrology”**).**Lesson 15.** **Control** **«Myology».** |
| **2nd semester (1st year of study)** |
| **Lectures (6 hours):** Development of alimentary system, peritoneum.Development of the respiratory system. Development of the urinary/genital system.**Lectures (6 hours):** Circles of circulation. Development of the heart. Development of the blood vessels. Fetus blood circulation. The veins of greater circulation. The anastomoses. The lymphatic system. |
| **Lesson 1.** Splanchnology is the science of viscera. Hollow and parenchymatous organs. Principles of structure of hollow organs: mucous membrane, muscular coat, adventitia or serous layer. Principles of structure of parenchymatous organs. Systems of organs. The alimentary system. Oral cavity. Teeth. Hard palate. Soft palate. The fauces. The tongue. The glands of mouth: parotid, submandibular, sublingual, the minor salivary glands. The Pirogov’s –Walder’s lymphatic ring. The pharynx, the oesophagus. The stomach.Lesson 2. The small intestine: the duodenum, the jejunum, the ileum. The large intestine: the caecum (ileoceacal valve, ileoceacal orifice, the appendix (the variants of its position), the ascending colon, the transverse colon, the descending colon, the sigmoid colon, the rectum. Its function, structure, topography, relation to the peritoneum. The pancreas: functions, structures, ligaments, topography and relation to the peritoneum. Pancreatic ducts. Exocrine and endocrine functions of the pancreas.**Lesson 3.** Liver, fixating apparatus, the role of the portal vein. Functions, structures, ligaments, topography and relation to the peritoneum. The gallbladder, bile ducts: functions, structures, ligaments, topography and relation to the peritoneum. The peritoneum. Parietal and visceral layers, the mesenteries, the omentums, the ligaments, the folds. The abdominal cavity and peritoneal cavity, the retroperitoneal space. The omental, hepatic, pregastric bursa.**Lesson 4.** The respiratory system.  Upper and lower respiratory tracts. Nose, nasal sinuses. Its function, structure, topography. The larynx: the cartilages, connections, muscles, cavities, the wall of the larynx. The trachea. Bronchi. The lungs. The pleura, The pleural cavity. Mediastinum. Their functions, structures, topography.**Lesson 5.** The urinary system.  The kidneys, urinary tract of kidney. Their functions, structures, topography, relation to the peritoneum, fixation. The kidneys’ stalk (renal leg). The ureter. Their functions, structures, topography, relation to the peritoneum and blood vessels, constrictions. The urinary bladder. Their functions, structures, topography, relation to the peritoneum and blood vessels, constrictions.**Lesson 6.** The male genital system. The scrotum, fascial sheaths of testis and spermatic cord. The testis: structures, topography, exocrine and endocrine functions. The defferent duct. The spermatic cord. The seminal gland. The ejaculatory duct. The prostate. The bulbo-urethral glands. The penis. The male urethra. Their functions, structures, topography.**Lesson 7.** The female genital system. The ovary, their exocrine and endocrine function. The uterus. The uterine tube. Their functions, structures, topography, relation to the peritoneum, ligaments of the uterus. The vagina. Their functions, structures, topography, relation to the peritoneum. The labia majoria. The vestibule of the vagina. The vestibular glands, the clitoris. Their functions, structures, topography. The perineum. Pelvic diaphragm. Male and female urogenital diaphragm. Their functions, structures, topography. **Lesson 8.:** Thyroid, parathyroid, suprarenal endocrine glands. Their functions, structures, topography.**Control “Splanchnology”****Lesson 9.** The heart. Shape and localization of the heart in thorax cavity. The atria and the ventricles, their structures. The structure of the heart wall. The endocardium, the myocardium, the epicardium. The valves of the heart. The arteries and the veins of the heart. The pericardium. The arteries of lower circulation. The pulmonary trunk, the pulmonary veins.**Lesson 10.** The arteries of the greater circulation. The aorta. Topography. The branches of the ascending aorta, the branches of the aortic arch. The brachiocephalic trunk. The common carotid artery. The internal and external carotid arteries. The subclavian artery. The anastomoses between head and neck arteries.**Lesson 11.** The arteries of the upper limb. The axillary, the brachial, the radial and ulnar arteries: their topography, branches and projection onto the skin. The palmar arterial arches (superficial and deep).**Lesson 12.** The thoracic and abdominal aorta, its topography. The arteries of the thorax aorta and abdominal aorta. The anastomoses between branches of thorax and abdominal aorta.**Written control “Aorta and its branches”.****Lesson 13.** The pelvic arteries. The common iliac artery, internal and external iliac arteries, topography. The femoral artery. The popliteal artery. The arteries of the thigh and foot. The arterial arches of the foot.**Lesson 14.** The venous system. The veins of greater circulation. The superior vena cava and its topography. The veins of the head and neck (deep and superficial). The brachiocephalic veins. Internal, external and anterior jugular veins. Axillar vein, subclavian vein. Intercostal veins. The azygos and hemiazygos veins. Their influents (tributaries), topography. The common iliac vein. The internal iliac vein. The external iliac vein. The veins of the abdominal cavity and pelvis. The portal vein, its topography and influents (tributaries).**Lesson 15.** Lymphatic system. Thoracic and right lymphatic duct. Subclavian and jugular trunks. Thoracic lymphatic vessels and nodes. Lymphatic vessels and nodes of the head, neck, thoracic and abdominal cavities, pelvis, upper and lower limb (superficial and deep).**Control «Cardiovascular system»****Lesson 16.** Features of organs’ blood supply.**Consultation before exam** |
| **Exam** |