

**Thematic lesson plan of lectures  
in the discipline «Human anatomy – anatomy of head and neck»  
for students of the educational program  
specialist/bachelor's/master's degree  
in the specialty/direction of training 31.05.03 Dentistry,  
direction (profile) Dentistry,  
form of study full-time  
for the 2023-2024 academic year**

№	Topics of lectures	Hours (academic)
<b>I semester</b>		
1	<b>The subject of human anatomy. Principles of the modern anatomy. Methods of investigation in the anatomy.</b> <sup>1</sup> Content of the subject. History of anatomy. Human development. General structure of human body development. The concept of organs and organ systems. The position of man in nature. Anatomical terminology <sup>2</sup>	2
2	<b>Structure of human skeleton. Its development in phylo- and ontogenesis. Variants and anomalies of bones of human skeleton (vertebrae, ribs, sternum).</b> <sup>1</sup> Regularities in the structure of the skeleton of the trunk. Features of the anatomy of the skeleton of the trunk at various stages of evolution. The development of the skeleton of the trunk is distinguished in prenatal ontogenesis. Age-related changes in the skeleton of the trunk. Variants and anomalies <sup>2</sup>	2
3	<b>Phylo- and ontogenesis of the skull. Development of the skull in fetal period, peculiarities of the skull of newborn.</b> <sup>1</sup> General patterns of the structure of the skull. Stages of development of the skull in phylo- and ontogenesis. Mammalian skull, origin of the auditory ossicles and the temporomandibular joint. Ontogenesis of the human skull roof. Newborn skull anatomy <sup>2</sup> (part 1)	2
4	<b>Phylo- and ontogenesis of the skull. Development of the skull in fetal period, peculiarities of the skull of newborn.</b> <sup>1</sup> General patterns of the structure of the skull. Stages of development of the skull in phylo- and ontogenesis. Mammalian skull, origin of the auditory ossicles and the temporomandibular joint. Ontogenesis of the human skull roof. Newborn skull anatomy <sup>2</sup> (part 2)	2
5	<b>Bones of the upper limb. Its development in phylo- and ontogenesis. Variants and anomalies of upper limb. Bones of the lower limb. Its development in phylo- and ontogenesis. Variants and anomalies of lower limb.</b> <sup>1</sup> Regularities of the structure of the additional skeleton. Phylo- and ontogenesis of the upper limb bones. Features of the structure of the bones of the upper limb. Variations and abnormalities of the upper limb bones. The development of the bones of the lower extremity in phylo- and ontogenesis. Features of the structure of the bones of the lower limb. Variations and abnormalities of the bones of the lower limb. <sup>2</sup>	2
6	<b>General arthrology. Private anatomy of joints.</b> <sup>1</sup> Phylo- and ontogenesis development of compounds. Classification of bone joints. Features of the structural elements of the joints. Joint biomechanics <sup>2</sup>	2
7	<b>Functional anatomy of the temporomandibular joint.</b> <sup>1</sup> Joint development, its comparative anatomy. Features of the structure of bone and soft tissue components. Features of blood supply and innervation. <sup>2</sup>	2
8	<b>The anatomy of the muscular system.</b> <sup>1</sup> Muscle development. The concept of myotome. Muscle structure. Muscle auxiliary apparatus. Muscle classifications. Skeletal muscle variations and abnormalities <sup>2</sup>	2
9	<b>The general information of splanchnology. The functions, development of alimentary system. Variants and anomalies.</b> <sup>1</sup> Division of the vegetative tube. Regularities in the structure of the digestive tube. Features of the morphology of the mucous membrane and submucosa in various parts of the digestive tube. Features of	2



	the structure of the muscular and outer membranes in various parts of the digestive tube. Features in the anatomy of the digestive system of mammals. <sup>2</sup>	
10	<b>Development of the oral cavity. Malformations of the oral cavity and face.</b> <sup>1</sup> Prenatal and postnatal development of the walls of the oral cavity. Features of the development of the tongue and salivary glands. Anomalies and malformations of the palate and tongue. Anomalies of the salivary glands.	2
11	<b>Comparative anatomy and embryology teeth.</b> <sup>1</sup> The concept of a heterodontic dental system. General patterns of tooth morphology. Phylogenesis of tooth development. Features of prenatal development of teeth. Postnatal development of teeth <sup>2</sup>	2
12	<b>Teeth: particular dental anatomy. Features of the structure in childhood. Variations and anomalies. Occlusion</b> <sup>1</sup> Characteristics of the macro-, microstructure of dentin, features of its chemical composition, trophism and function. Tooth-jaw segment. The concept of dental, alveolar and basal arches; articulation: occlusion; bite. Variant dental anatomy (part 1) <sup>2</sup>	2
13	<b>Teeth: particular dental anatomy. Features of the structure in childhood. Variations and anomalies. Occlusion</b> <sup>1</sup> Characteristics of the macro-, microstructure of dentin, features of its chemical composition, trophism and function. Tooth-jaw segment. The concept of dental, alveolar and basal arches; articulation: occlusion; bite. Variant dental anatomy (part 2) <sup>2</sup>	2
14	<b>Functional anatomy of the digestive system. Structural features, development, variations and anomalies, methods of intravital research.</b> <sup>1</sup> The intersection of the airways and digestive tracts in the pharynx. Anatomical narrowing of the esophagus. Factors that prevent the reflux of contents from the stomach into the esophagus. Macrostructural differences between the small and large intestine. Physiological sphincters of the colon. Segmental structure of the liver according to Quino. Anatomical features of the digestive system organs in newborns and young children. Variants of the structure and anatomy of the organs of the digestive system. <sup>2</sup>	2
15	<b>The organs of respiratory system. The functions, development in phylo- and ontogenesis. Variants and anomalies. Methods of investigation.</b> <sup>1</sup> The place of the respiratory system in the hierarchy of the functional systems of the body. Development of the respiratory system in phylo- and ontogenesis. The feasibility of the specific shape and structure of the external nose of a person. The work of the larynx as an organ of respiration and voice formation. Anatomical differences between the right and left lungs (by mass, shape, number of lobes) and the meaning of the division of the lungs into lobes. Variant anatomy and anomalies of the respiratory system <sup>2</sup>	2
16	<b>The urinary organs. The functions, development in phylo- and ontogenesis. Variants and anomalies. Methods of investigation.</b> <sup>1</sup> Organs and tissues of the body that have the functions of secreting toxic substances. Factors providing kidney fixation. Lobe, lobule, segment of the kidney. Kidney function. The functional significance of the bladder triangle. Ontogenesis of the urinary system. Variants of the structure and anomalies of the organs of the urinary system. <sup>2</sup>	2
17	<b>The genital organs. The functions, development in phylo- and ontogenesis. Variants and anomalies. Methods of investigation.</b> <sup>1</sup> General patterns of genital anatomy. The main directions of the evolution of the male genital organs. Reproductive hormonal, vegetative-sexual and vegetative-somatic functions of the ovary. Morpho-functional characteristics of the endometrium. Phylogenesis of the female genital organs. Homology of male and female genital organs. Variants of the structure and anomalies of the genital organs. <sup>2</sup>	2
	<b>Total for the 1st semester</b>	<b>34</b>
<b>II semester</b>		
1	<b>The cardiovascular system. The heart: functions, development in phylo- and ontogenesis. Variants and anomalies. Methods of investigation.</b> <sup>1</sup> Phylo- and ontogeny of the heart. Features of the structure and function of the heart. Features of the structure of the chambers and walls of the heart. Heart anomalies. <sup>2</sup>	2
2	<b>General patterns of the structure of blood vessels. Development, principles of location and topography of branches. Functional anatomy of arteries, their anastomoses.</b> <sup>1</sup> Features of the structure and function of blood vessels. General patterns in the vascular system. Classification of vessels. Development, structural features of arterial vessels. Regularities of the course	2



	and branching of the arteries. Distribution of arteries in organs <sup>2</sup>	
3	<b>The veins: functions, development in phylo- and ontogenesis. Features of blood circulation in fetus changes of hemocirculation system after birth.</b> <sup>1</sup> Development, structural features of venous vessels. Hemodynamics in the veins. Venous depots. Features of the venous outflow of the head. Microcirculation. Collateral circulation. Age-related changes <sup>2</sup>	2
4	<b>The lymphoid system. Functions, development in phylo- and ontogenesis. Variants and anomalies. Methods of investigation.</b> <sup>1</sup> Principles of the structure of the lymphatic system (capillaries, vessels, trunks and ducts, their general characteristics). Pathways for the outflow of lymph from regions of the body into the venous bed <sup>2</sup>	2
5	<b>General information of the nervous system. Phylo- and ontogenesis of the nervous system. The formation of the parts of brain.</b> <sup>1</sup> Definition of the nervous system, its departments. The principle of the nervous system. Reflex definition. Elements of neuroglia. Morphological and functional classification of neurons. Receptor definition, their classification. The main stages of the evolution of the nervous system. Features of the human brain, unlike other mammals. Prenatal development of the nervous system. Characteristics of the features of the nervous system of the newborn. Age-related changes in the nervous system. Variants of the structure of the nervous system. <sup>2</sup>	2
6	<b>The brain stem.</b> <sup>1</sup> Determination of the brain stem. Regularities of the location of sensitive, motor and autonomic nuclei in the brain stem. Reflex functions of the medulla oblongata. Pons functions. The direction of evolution of the equilibrium system. Functions of the cerebellum, midbrain and diencephalon. <sup>2</sup>	2
7	<b>Structure of the cortex of hemisphere. The localization of functions in cortex of hemisphere. The first and second signal systems.</b> <sup>1</sup> Knowledge of the dynamic localization of functions in the cortex of the cerebral hemispheres. Bark architectonics. Cytoarchitectonics of the cortex. The notion "analyzer" according to Pavlov. Regularities of localization of nuclei II of the signaling system. Characterization of the properties of the centers <sup>2</sup>	2
8	<b>Limbic system. Reticular formation (nuclei, connections, function).</b> <sup>1</sup> Morphological formations of the olfactory brain. Morphological structures belonging to the limbic system. "Chain of the hippocampus". Functions of the hippocampus. Limbic system dysfunctions. Striopallidal system: its connections with other anatomical structures of the brain. Morphofunctional features of neurons in the reticular formation. The nuclei of the reticular formation, their brief morphological and functional characteristics. Reticulo-loop connections. Sources of activation of reticular neurons <sup>2</sup>	2
9	<b>Vegetative nervous system (sympathetic part)</b> <sup>1</sup> Innervation of internal organs by sympathetic plexuses. The structure of the sympathetic clothed ANS. Features of topography and formation of sympathetic plexuses. Regularities of the structure of the autonomic nervous system. <sup>2</sup>	2
10	<b>Vegetative nervous system (parasympathetic part)</b> <sup>1</sup> Features of the structure of the parasympathetic ANS. Differences between PNS and ANS. <sup>2</sup>	
11	<b>Endocrine glands.</b> <sup>1</sup> Features of the structure and function of the endocrine glands of the branchiogenic group. Features of the structure and function of the endocrine glands of the neurogenic group. Development of endocrine glands. The relationship between the nervous and endocrine systems. <sup>2</sup>	2
12	<b>Peripheral nervous system.</b> <sup>1</sup> Plexus of somatic nerves. Distribution patterns. Types of damage <sup>2</sup>	
13	<b>Functional anatomy of the trigeminal nerve. Anatomical substantiation of anesthesia.</b> <sup>1</sup> Topography of the main branches of the trigeminal nerve. Exit from the skull of the main branches of the trigeminal nerve. Anatomical substantiation of needle stick projections during anesthesia on the upper and lower jaws <sup>2</sup>	
14	<b>Sense organs.</b> <sup>1</sup> Features of the structure and function. Auxiliary apparatus. Conducting apparatus. Developmental anomalies. Age changes. <sup>2</sup>	



15	<b>Private anatomy of the head and neck: facial part of the skull: development in postnatal ontogenesis, places of typical jaw fractures, anomalies. Craniometric points</b> <sup>1</sup> Development of the facial part of the skull in embryogenesis. Features of the development and structure of the upper and lower jaws, their blood supply and innervation. Places of typical fractures. Contorforse. Variant anatomy of the maxillary sinus and mandibular canal. <sup>2</sup> (part 1)	2
16	<b>Private anatomy of the head and neck: facial part of the skull: development in postnatal ontogenesis, places of typical jaw fractures, anomalies. Craniometric points</b> <sup>1</sup> Development of the facial part of the skull in embryogenesis. Features of the development and structure of the upper and lower jaws, their blood supply and innervation. Places of typical fractures. Contorforse. Variant anatomy of the maxillary sinus and mandibular canal. <sup>2</sup> (part 2)	2
17	<b>Private anatomy of the head and neck: Teeth: features of the structure of tissues.</b> <sup>1</sup> The structure of the hard and soft tissues of the tooth. Mineralization of enamel in various parts of the crowns of teeth. Dentine tubes, dentine fluid. Receptor areas. Nerve fibers of the pulp. Features of the nerve fibers of the pulp of milk teeth. Periodontal ligaments <sup>2</sup>	
18	<b>Private anatomy of the head and neck: Variant anatomy of the root canals.</b> <sup>1</sup> Formation of root canals of single and multi-rooted teeth. Lateral, additional canals. Apical delta. Channels of the root furcation area. Variant anatomy of root canals of incisors, canines, premolars and molars. Features of the anatomy of the root canals of milk teeth <sup>2</sup> (part 1)	
19	<b>Private anatomy of the head and neck: Variant anatomy of the root canals.</b> <sup>1</sup> Formation of root canals of single and multi-rooted teeth. Lateral, additional canals. Apical delta. Channels of the root furcation area. Variant anatomy of root canals of incisors, canines, premolars and molars. Features of the anatomy of the root canals of milk teeth <sup>2</sup> (part 2)	2
	<b>Total for the 2nd semester</b>	<b>38</b>
	<b>Total for the discipline</b>	<b>72</b>

<sup>1</sup> -Subject

<sup>2</sup> - essential content

Considered at the meeting of the department of Anatomy,  
«1» June 2023, Protocol № 24

Head of the Department



S.A. Kalashnikova