

**THEMATIC PLAN OF INDEPENDENT WORK OF THE STUDENT IN  
THE DISCIPLINE "NORMAL PHYSIOLOGY – PHYSIOLOGY OF THE  
MAXILLOFACIAL REGION" FOR STUDENTS OF THE EDUCATIONAL  
PROGRAM SPECIALIST IN THE SPECIALTY 31.05.03,  
FOR THE 2023-2024 ACADEMIC YEAR**

№	The topic of independent work	Hours (academic)
1	<p><b>Physiology of the digestive system<sup>1</sup></b>            Biological fluids of the oral cavity (oral fluid, gingival fluid, saliva; their features). Salivary glands and their secret (qualitative features of the chemical composition of secretions secreted by various salivary glands), salivary gland functions. Mechanism of saliva formation. Regulation of salivation. Salivating center. Salivary gland innervation: influence of parasympathetic and sympathetic nerves on salivation, humoral regulation. The adaptive significance of salivation.            Physiological methods of studying digestion in the oral cavity. Methods of research of the chewing apparatus. The physiological masticatory test. Methods of salivation research. Absorption in the mouth. Swallow. Morphological and functional characteristics of smooth muscle. Digestion in the stomach. Functions of the stomach. Composition and properties of gastric juice. Regulation of gastric secretion. Phases of gastric secretion. Adaptive nature of secretory activity of the stomach. Digestion in the duodenum. Composition and properties of pancreatic secretions. Regulation of pancreatic secretion. Phases of pancreatic secretion. Oral and parietal digestion. Absorption of nutrients. Oral and parietal digestion. Absorption of nutrients. Motor activity of the small intestine and its regulation<sup>2</sup></p>	8
2	<p><b>Physiology of respiration<sup>1</sup></b>            Biomechanics of inhalation and exhalation. Lung volumes and capacities. Gas exchange in the lungs. The structure aerogemateski barrier. The main regularities of gas transition through the membrane. Partial pressure of gases in the alveolar air and gas tension in the blood. Transport of gases by blood. The dissociation of oxyhemoglobin, factors that accelerate the dissociation. Transport of carbon dioxide. Regulation of respiration. Modern ideas about the structure and localization of the respiratory center. The role of mechano-and chemoreceptors in the regulation of respiration. Breathing at low atmospheric pressure. Breathing at high atmospheric pressure<sup>2</sup></p>	6
3	<p><b>Blood physiology<sup>1</sup></b>            Plasma proteins, their physiological significance. Oncotic blood pressure, its role. The rate of erythrocyte sedimentation, factors affecting its value. Clinical significance of ESR. Acid-base state of the blood. Blood buffer systems. The relationship between the physical and chemical properties of blood and the</p>	8

	functions of the oral cavity. Red blood cells, structure, quantity, function. Hemoglobin, structure, quantity, function. Types and compounds of hemoglobin. White blood cells, number, types, and their functions. Leukocyte formula and its clinical significance. Vascular-platelet hemostasis. Platelets, structure, role in hemostasis. Stages of vascular-platelet hemostasis. Coagulation hemostasis, its phases. Factors that accelerate and slow blood clotting. Fibrinolysis system, stages and mechanisms of fibrinolysis. Anticoagulation mechanisms (anticoagulation system). The concept of primary and secondary anticoagulants. Protective role of the oral hemostasis system <sup>2</sup>	
4	<b>Physiology of the cardiovascular system<sup>1</sup></b> Excitability of the heart muscle, its features. The ratio of the process of arousal and changes in excitability in the heart muscle. Heart cycle, its phases. The role of the valve apparatus. Functional organization of the vascular system, classification of vessels. The concept of vascular tone, basal and Central vascular tone. Vasomotor center. Regulation of vascular tone (humoral and nervous). The concept of vasoconstriction and vasodilation. Blood pressure as an indicator of systemic circulation. Systolic, diastolic and pulse blood pressure, normal values. Factors that affect the value of blood pressure. Features of microcirculation in the maxillofacial region and organs of the oral cavity <sup>2</sup>	6
5	<b>Physiology of the excretory system<sup>1</sup></b> Nephron, as a structural and functional unit of the kidney, the structure of the nephron. The process of urine formation: glomerular filtration, tubular reabsorption and secretion. The concept of primary and final urine. The role of kidneys in the regulation of mineral metabolism in dental tissues. Regulation of urinary function of the kidneys (nervous and humoral) <sup>2</sup>	5
	TOTAL	33

<sup>1</sup> - subject

<sup>2</sup> - essential content

Considered at the meeting of the department of normal physiology "25" 05 2023,  
protocol № 9a

Head of the Department



S.B. Клаучек