

Summary of the working program of the academic discipline

«BIOLOGICAL CHEMISTRY – BIOCHEMISTRY OF ORAL CAVITY» General Educational Program of higher education (specialist's degree programs)

31.05.03 Dentistry

Department: **BIOCHEMISTRY NAMED AFTER G.YA.GORODISSKAYA**

1. The purpose of mastering the discipline: participation in forming the relevant competencies: professional (GPC-2) and universal (UC-1) competencies:

Tasks of the discipline is to form knowledge about the molecular mechanisms of the physiological functions of the human body and their disturbances in pathological conditions, about the main patterns of metabolic processes that determine the state of health and human adaptation to changes in the conditions of the external and internal environment; substantiate biochemical mechanisms for prevention and treatment, biochemical methods for diagnosing and monitoring the effectiveness of treating diseases of various organs and tissues, especially organs and tissues of the oral cavity.

2. Position of the academic discipline in the structure of the General Educational Program (GEP).

2.1 The discipline "BIOLOGICAL CHEMISTRY - BIOCHEMISTRY OF THE ORAL CAVITY" refers to the core part of Block 1 of GEP HE (31.05.03 "Dentistry", specialist level). In the general system of training doctors, biochemistry occupies a special position - it is a science that, on the one hand, gives fundamental knowledge about the molecular mechanisms of the functioning of the human body, and on the other hand, is an applied medical discipline, the knowledge of which is necessary for every dentist.

The discipline is taught in 2 and 3 semesters/ first and second years of study.

2.2. The following knowledge, skills and abilities formed by previous academic disciplines are required for mastering the discipline: general and bioorganic chemistry, biology, physics.

2.3. Mastering the discipline is required for forming the following knowledge, skills and abilities for subsequent academic disciplines: propaedeutic and prevention of dental diseases, therapeutic dentistry, pathophysiology - pathophysiology of the head and neck, immunology - clinical immunology

3. Deliverables of mastering the academic discipline and metrics of competence acquisition

Mastering the discipline aims at acquiring the following universal (UC) and general professional (GPC) competencies:

	Competence code	The content of the competence (or its part)	As a result of mastering the discipline, the students should:		
			know	be able to	possess
1.	GPC-2.	Capable analyze results own activities to prevent professional mistakes	IGPC 2.1: orders rendering medical help, clinical recommenda-	IGPC 2.2: analyze the results examination and treatment of patients with dental diseases;	IGPC 2.3: participation in clinical (clinico-anatomical) conferences on

			tions with taking into account standards of medical care; analysis technique results of own activity	compose action plan to prevent professional mistakes based on analysis results of own activity	parsing mistakes professional activity
2.	UC-1.	Able to carry out a critical analysis of problem situations based on a systematic approach, develop an action strategy.	IUC 1.1: methods of critical analysis and evaluation of modern scientific achievements; basic principles of critical analysis.	IUC 1.2: gain new knowledge based on analysis, synthesis, etc.; collect data on complex scientific problems related to the professional field; search for information and solutions based on action, experiment and experience.	IUC 1.3: researching the problem of professional activity using analysis, synthesis and other methods of intellectual activity; developing an action strategy to solve professional problems.

4. Volume of the academic discipline and types of academic work

Type of educational work	Labor intensity		Labor intensity (AH) in semesters		
	volume in credit units (CU)	volume in academic hours (AH)	2 nd	3 rd	
			semes ter	semes ter	
Classroom work, including			54	54	
Lectures (L)		24	12	12	
Laboratory practicum (LP)*					
Practicals (P)		84	42	42	
Seminars (S)					
Student's individual work (SIW)		72	36	36	
exam		36		36	
TOTAL LABOR INTENSITY	6	216	90	126	

*- relevant for both full-time and distance learning

5. Sections of the academic discipline and competencies that are formed

№	Competence code	Section name of the discipline
1.	UC-1, GPC -2	Structural organization of proteins. Features of the functioning of oligomeric proteins. Enzymes - structural organization and functioning.
2.	UC-1, GPC-2	Energy metabolism

3.	UC-1, GPC-2	Amino acid metabolism
4.	UC-1, GPC-2	Biosynthesis of nucleic acids and proteins. Fundamentals of molecular genetics.
5.	UC-1, GPC-2.	Nucleotide metabolism.
6.	UC-1, GPC-2	Hormonal regulation of metabolism and body functions.
7.	UC-1, GPC-2	Carbohydrate metabolism
8.	UC-1, GPC-2	Lipid metabolism.
9.	UC-1, GPC-2	Biochemistry of the liver. Inactivation of foreign substances in the body.
10.	UC-1, GPC-2	Biochemistry of connective tissue.
11.	UC-1, GPC-2	Biochemistry of mineralized tissues.
12.	UC-1, GPC-2	Biochemistry of the oral fluid.