

Summary of the working program of the academic discipline

« MEDICAL PHYSICS »

(name of the academic discipline)

General Educational Program of higher education (specialist's degree programs)

31.05.03 Dentistry

Department: **MEDICAL BIOPHYSICS**

1. The purpose of mastering the discipline participation in the formation of UC-1 competencies consists in the formation of students' ability to carry out a critical analysis of problem situations based on a systematic approach, to develop an action strategy.

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

2.1. The discipline « Medical physics » refers to the core part of Block 1 (B1.PEP.E1) of GEP HE. The discipline is taught in 1st and 2nd semesters, 1 year of study.

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

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

№	Competence code	The content of the competence (or its part)	Code and name of the competence acquisition metric	As a result of mastering the discipline, the students should:		
				know	be able to	possess
1.	UC-1	Able to carry out a critical analysis of problem situations based on a systematic approach, develop an action strategy	<p><u>ID-1_{UC-1.1}</u> Knows: methods of critical analysis and evaluation of modern scientific achievements; basic principles of critical analysis.</p> <p><u>ID-2_{UC-1.2}</u> Can: acquire new knowledge based on analysis, synthesis; collect data on complex scientific problems related to the professional field; search for information and solutions based on actions, experiment and experience.</p> <p><u>ID-3_{UC-1.3}</u> Has practical experience: research of professional activity samples with the use of analysis, synthesis and other methods of</p>	methodology of abstract thinking for systematization of quantitative and qualitative characteristics of the physiological state of the organism and the surrounding environment	to gain new knowledge based on analysis, synthesis, to identify objective, physical processes in biological systems and to determine their connection with the fundamental laws of physics	the methodology of abstract thinking for making conclusions about the results of measurements of the physical characteristics of biological objects and mathematical processing of the data obtained

			intellectual activity; development of an action strategy for solving professional problems.			
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4. Volume of the academic discipline and types of academic work

Total labor intensity of the discipline is 2 CU (72 AH)

Type of educational work	Labor intensity		Labor intensity (AH) in semesters	
	volume in credit units (CU)	volume in academic hours (AH)	semester 1	semester 2
<i>Classroom work, including</i>	<i>1,2</i>	<i>44</i>	<i>22</i>	<i>22</i>
Lectures (L)	0,3	12	6	6
Laboratory practicum (LP)	<i>FSES are not provided</i>			
Practical (P)	0,9	32	16	16
Seminars (S)	<i>FSES are not provided</i>			
<i>Student's individual work (SIW)</i>	<i>0,8</i>	<i>28</i>	<i>14</i>	<i>14</i>
Mid-term assessment	<i>FSES is not provided</i>			
CREDIT				
<i>TOTAL LABOR INTENSITY</i>	<i>2</i>	<i>72</i>	<i>36</i>	<i>36</i>

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

№	Competence code	Section name of the discipline
1.	UC-1	Biomechanics.
2.	UC-1	Molecular physics, thermodynamics.
3.	UC-1	Electrical properties of organs and tissues of the human body, the effect of electromagnetic fields.
4.	UC-1	Medical optics.
5.	UC-1	Physical fundamentals of medical introscopy.