

*Summary of the working program of the academic discipline*

**« BIOPHYSICS »**

(name of the academic discipline)

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

*31.05.01 General Medicine*

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 « Biophysics » refers to the core part of Block 1 (C.1.1.57) of GEP HE. The discipline is taught in 3 semester/2year 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	<u>ID-1 UC-1.1.</u> Knows: methods of critical analysis and evaluation of modern scientific achievements; basic principles of critical analysis <u>ID-2 UC-1.2.</u> Able to: 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.	methods of systematic and critical analysis; methods of developing action strategies for identifying and solving a problem situation	apply the methods of a systematic approach and critical analysis of problem situations; develop a strategy of actions, make concrete decisions for its implementation	methodology of systematic and critical analysis of problem situations; methodology of goal setting, determination of ways to achieve it, development of action strategies.

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

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

Type of educational work	Labor intensity		Labor intensity (AH) in semester semester 3
	volume in credit units (CU)	volume in academic hours (AH)	
<b>Classroom work, including</b>	<b>1,2</b>	<b>44</b>	<b>72</b>
Lectures (L)	0,3	10	10
Laboratory practicum (LP)	<i>FSES are not provided</i>		
Practicals (P)	0,9	34	34
Seminars (S)	<i>FSES are not provided</i>		
Student's individual work (SIW)	<b>0,8</b>	<b>28</b>	28
Mid-term assessment			
<b>CREDIT</b>			
<b>TOTAL LABOR INTENSITY</b>	<b>2</b>	<b>72</b>	<b>72</b>

### 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	Physical processes in biological membranes.
4.	UC-1	Biophysics of transport processes and formation of biopotentials.
5.	UC-1	Electrical properties of organs and tissues of the human body. Physical processes in tissues when exposed to current and electromagnetic fields.
6.	UC-1	Optics, microscopy methods.
7.	UC-1	Quantum biophysics.
8.	UC-1	Interaction of ionizing radiation with matter. Dosimetry.