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)
33.05.01 Pharmacy
Department: **MEDICAL BIOPHYSICS**

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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 (B1.PEP.5) of GEP HE. The discipline is taught in 1,2 semesters/1year 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

№	Compe-tence 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.	*ID-1* *UC-1.1* Knows: methods of critical analysis and evaluation of modern scientific achievements; basic principles of critical analysis. *ID-2* *UC-1.2* 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, experience and experience. *ID-3* *UC-1.3* Has practical experience: research of the problem of professional activity with the use of analysis, synthesis	Physical irregularities under-lying the processes occurring in the body; physical-physical properties of biological tissues; mechanism - we are the effects of physical factors on the organ; the basics of the device of physiotherapy and diagnostic equipment; the rules of	To analyze the processes of the vital activity of biosystems using the laws of physics; to explain the physical properties of biological tissues, the functioning of systems using methods of physical and mathematical modeling; to justify the choice of a physical	Methods of measuring biophysical quantities; methods of compiling the simplest physical and mathematical models for studying biosystems; methods of obtaining information from various sources.

			and other methods of intellectual activity; development of an action strategy to solve professional problems.	safety techniques when working with equipment; the latest achievements in the field of biophysics and prospects for their use in various areas of medicine-new and pharmacy.	factor acting on the body with diagnostic and therapeutic to evaluate the available data of physiotherapy and diagnostic equipment.	

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 by semester (AH)	
	volume in credit units (CU)	volume in academic hours (AH)	semester 1	semester 2
Classroom work, including	**1,2**	**44**	**22**	**22**
Lectures (L)	0,3	10	4	6
Laboratory practicum (LP)*	***FSES are not provided***			
Practicals (P)	0,9	34	18	16
Seminars (S)	***FSES are not provided***			
Student's individual work (SIW)	**0,8**	**28**	**14**	**14**
Mid-term assessment	***FSES are not provided***			
CREDIT				
TOTAL LABOR INTENSITY	***2***	***72***	***36***	***36***

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

№	Competence code	Section name of the discipline
1.	UC-1	Biomechanics. Physical properties of biomembranes.
2.	UC-1	Biophysics of the processes of formation of biopotentials. Ion channels. Active and passive transport through membranes. Modeling of biophysical processes.
3.	UC-1	Molecular physics, thermodynamics.
4.	UC-1	Optics, microscopy methods.
5.	UC-1	Quantum biophysics.