

Summary of the working program of the academic discipline

« PHYSICS »

(name of the academic discipline)

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

33.05.01 Pharmacy

Department: **MEDICAL BIOPHYSICS**

1. The purpose of mastering the discipline participation in the formation of the competencies of UC-1, GPC -1, consisting in the formation of students' ability to carry out a critical analysis of problem situations based on a systematic approach, develop a strategy of actions and the ability to use basic biological, physico-chemical, mathematical methods for the development, research and examination of medicines.

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

2.1. The discipline «Physics» refers to the core part of Block 1 (B1.E.9) of GEP HE. The discipline is taught in 2 semester/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

№	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.
2.	GPC -1	Able to use basic	<u>ID-1 GPC-1.2.</u> Applies	The basic	Analyze the	Methods of

	biological, physico-chemical, mathematical methods for the development, research and examination of medicines.	basic physico-chemical methods of analysis for the development, research and examination of medicines and medicinal plant raw materials.	laws of modern physics. Theoretical foundations of physical methods of substance analysis. Characteristics of physical factors and mechanisms of their action on the organism. Metrological requirements when working with physical equipment. Safety precautions when working with equipment. The latest achievements in the field of physics and the prospects of their use in various areas of pharmacy.	life processes of biosystems using the laws of physics. Technical work on physical devices used for quantitative and qualitative analysis of the material. To justify the choice of a physical factor acting on the organ with a diagnostic and therapeutic purpose. Choose the optimal method of quantitative and qualitative analysis of the substance, using appropriate physical devices and apparatuses.	measuring physical quantities. Methods of colorimetry, polarimetry, spectrophotometry and refractometry. The method of abstract thinking to make a conclusion about the results of measurements of the physical characteristics of biological objects and mathematical processing of the data obtained. Skills of practical use of devices and equipment in the physical analysis of the substance. Skills of obtaining information from various sources.
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4. Volume of the academic discipline and types of academic work

Total labor intensity of the discipline is 3 CU (108 AH)

Type of educational work	Labor intensity		Labor intensity (AH) in semesters
	volume credit (CU)	in units academic hours (AH)	
			2
<i>Classroom work, including</i>	1,8	66	66
Lectures (L)	0,4	14	14
Laboratory practicum (LP)*	1,4	52	52
Practicals (P)	<i>FSES are not provided</i>		
Seminars (S)	<i>FSES are not provided</i>		
<i>Student's individual work (SIW)</i>	1,2	42	42
Mid-term assessment	<i>FSES are not provided</i>		
CREDIT			
TOTAL LABOR INTENSITY	3	108	108

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

№	Competence code	Section name of the discipline
1.	UC-1, GPC-1	Mechanics.
2.	UC-1, GPC-1	Molecular physics, thermodynamics.
3.	UC-1, GPC-1	Electricity and magnetism.
4.	UC-1, GPC-1	Optics.
5.	UC-1, GPC-1	Quantum physics. Spectroscopy.
6.	UC-1, GPC-1	Physics of ionizing radiation.