## ***Summary of the working program of the academic discipline***

«**INFORMATION SUPPORT FOR THE MEDICINE LIFECYCLE**»

General Educational Program of higher education (specialist's degree programs): *33.05.01* *Pharmacy*

Department: *Management and Economics of Pharmacy and Pharmaceutical Technology*

**1. The purpose of mastering the discipline** – participation in forming the following competencies:

* universal competencies (UC-1 (1.2, 1.3));
* general professional competencies (GPC-1 (1.4), GPC-6 (6.1-6.4);
* professional competencies (PC-4 (4.4), PC-9 (9.2)).

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

**2.1.** The discipline refers to the core partof Block 1 of GEP HE (B1.C.25).

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

Mastering the discipline aims at acquiring the following universal (UC), general professional (GPC) 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 |
|  | UC-1 | Able to  realize critical analysis of problem situations based on  a systematic approach, develop strategy actions | UC-1.2. Identifies gaps in the information needed to solve a problem situation, and designs processes for their elimination  UC-1.3. Critically assesses reliability of information sources, works with conflicting information from different sources | * basic principles and methods of scientific and informational activity * principles of selection of professional information about medicines from possible sources of information * have an idea of national and world information resources in the field of healthcare and pharmacy * basics of creating information systems and using new information technologies for processing pharmaceutical information * documentary sources of pharmaceutical information, classifications, the main types of pharmaceutical information, their purpose and features * general principles and methods of information retrieval * forms, methods and means of pharmaceutical information and advertising | * to use specialized information resources * to use in practice various methods to study the information needs of specialists and the population * to search for pharmaceutical information and information about medicines using modern information search engines * to analyze the quality of information about medicines for specialists and consumers, taking into account the requirements of the law and ethical standards * to evaluate the quality of information and advertising of medicines * select the necessary amount of information about medicines required for specialists and patients | * skills of search and selection of pharmaceutical information in information search systems for solving professional tasks * by methods of processing text and graphic information using a computer * Internet techniques for performing professional tasks |
|  | GPC-1 | Able to use basic biological, physical-chemical, chemical, mathematical methods for the development, research and examination of medicines, the manufacture of medicinal products | GPC-1.4. Applies mathematical methods and performs mathematical processing of data obtained during the development of medicines, as well as research and examination of medicines and medicinal plant raw materials | * basic principles of research planning, competent description of statistical data, selection of criteria for statistical analysis, correct interpretation of its results * methodology of analysis and processing of pharmaceutical information based on the results of research in the field of pharmacy * the main terms used in the analysis and processing of research results, as well as in the presentation of their results * the main applied software products used in the analysis and processing of pharmaceutical information | * plan scientific research, describe statistical data, interpret research results * analyze and process pharmaceutical information based on the results of research in the field of pharmacy * apply applied software products used in the analysis and processing of pharmaceutical information | * principles of research planning, competent description of statistical data, selection of criteria for statistical analysis, correct interpretation of its results * by the methodology of analysis and processing of pharmaceutical information based on the results of research in the field of pharmacy * the main terms used in the analysis and processing of research results, as well as in the presentation of their results * by skills in the main applied software products used in analysis and processing of pharmaceutical information |
|  | GPC-6 | Able to understand the principles of modern information technologies and use them to solve the tasks of professional activity | GPC-6.1. Applies modern information technologies in the interaction with parties to the circulation of medicinal products taking into account the requirements of information security  GPC-6.2. Performs an effective search for information necessary to solve the tasks of professional activity using legal reference systems and professional pharmaceutical databases  GPC-6.3. Uses specialized software for mathematical processing of observational and experimental data in solving problems of professional activity  GPC-6.4. Applies automated information systems in the internal processes of the pharmaceutical organization, as well as for interactions with customers and suppliers | * modern information technologies in interaction with subjects of drug circulation * specialized software for mathematical processing of observational and experimental data in solving professional tasks * automated information systems in the internal processes of a pharmaceutical organization, as well as for interactions with customers and suppliers | * apply modern information technologies for solving professional tasks * search for information, necessary for solving problems of professional activity, using legal reference systems and professional pharmaceutical databases * use automated information systems in the internal processes of a pharmaceutical organization, as well as for interaction with customers and suppliers | * skills in applying modern information technologies to solve professional problems * skills in searching for information, necessary for solving problems of professional activity, using legal reference systems and professional pharmaceutical databases * skills in using automated information systems in internal processes of pharmaceutical organization and for interaction with clients and suppliers |
|  | PC-4 | Able to participate in monitoring the quality, effectiveness and safety of medicines and medicinal plant raw materials | PC-4.4. Informs in accordance with the procedure established by law about the non-compliance of the medicinal product for medical use with the established requirements or about the non-compliance of the data on the effectiveness and safety of the medicinal product with the data on the medicinal product contained in the instructions for its use | * modern aspects of drug safety control and pharmacovigilance system * classification of adverse reactions, risk factors for their occurrence, features of pre- and post-registration studies of drug safety * approaches to the organization of the pharmacovigilance system at the pharmacy organization level and the algorithm of action of a pharmaceutical specialist in case of detection of adverse reactions in real practice | * identify and document adverse reactions, identify risk factors for their occurrence, * organize the functioning of the pharmacovigilance system at the pharmacy organization level and develop an algorithm for the action of a pharmaceutical specialist in case of adverse reactions in real practice | * skills of establishing and documenting in accordance with the procedure established by law on the non-compliance of a medicinal product for medical use with the established requirements or on the non-compliance of data on the effectiveness and safety of a medicinal product with data on a medicinal product contained in the instructions for its use |
|  | PC-9 | Able to solve tasks of professional  activities in the transfer of medicines through pharmaceutical and medical organizations | PC-9.2. Performs pharmaceutical information and consulting during the sale, release and transfer of medicines for medical use | * the main terms used in conducting pharmacoeconomical and pharmacoepidemiological studies * sources of obtaining and levels of evidence-based medicine data | * to select a drug among analogues and synonyms based on pharmacoeconomical analysis * to use the results of pharmacoeconomical research to improve the quality of pharmaceutical care to the population | * skills of working with information obtained from various sources (clinical research data, drug form, standards for the use of drugs, printed reference books, electronic databases, Internet resources) |

**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) | 3 | 4 |
| Classroom work, including | 2,44 | 88 | 44 | 44 |
| Lectures (L) | 0,56 | 20 | 10 | 10 |
| Laboratory practicum (LP)\* | Laboratory practicums are not stipulated | | | | |
| Practicals (P) | 1,89 | 68 | 34 | 34 |
| Seminars (S) | Seminars are not stipulated | | | | |
| Student’s individual work (SIW) | 1,55 | 56 | 28 | 28 |
| Mid-term assessment | 1 | 36 |  | 36 |
| credit/exam *(specify the type)* |  |  |  | exam |
| TOTAL LABOR INTENSITY | 5 | 180 | 72 | 108 |

**5. Sections of the academic discipline and competencies that are formed when mastering them**

|  |  |  |  |
| --- | --- | --- | --- |
| № | Competence code | Section name  of the discipline | The content of the section in teaching units |
| 1 | UC-1  GPC-1  GPC-6  PC-4  PC-9 | Information support for the medicine lifecycle | The concept of the life cycle of medicines  Information technologies in lifecycle management of medicines  Quality assessment of pharmaceutical information  Analysis and processing of pharmaceutical information  Post-registration drug assessment: pharmacoepidemiology  Post-registration drug assessment: pharmacoeconomics  Post-registration assessment of drugs: pharmacovigilance  Basics of state regulation of pharmaceutical information, which is advertising |