Federal State Budgetary Educational Institution of Higher Education
"Privolzhsky Research Medical University"
Ministry of Health of the Russian Federation

APPROVED
Vice-Rector for Academic Affairs
_____ E.S. Bogomolova
31 August 2021

WORKING PROGRAM

Name of the academic discipline**: Educational practice in pharmacognosy**

Type of practice: educational

Specialty**: 33.05.01 PHARMACY**

Qualification: PHARMACIST

Department: Pharmaceutical Chemistry and Pharmacognosy

Mode of study: **full-time**

Labor intensity of the academic discipline: 216 academic hours

Practice duration - 4 weeks (school days 24)

Nizhny Novgorod
2021

The working program has been developed in accordance with the Federal State Educational Standard for the specialty 33.05.01 PHARMACY, approved by order of the Ministry of Science and Higher Education of the Russian Federation on March 27, 2018 N 219.

Developers of the working program:
O.A.Vorobeva, Associate Professor of the Department, PhD.

The program was reviewed and approved at the department meeting (protocol No. 1 of 08/29/2021)

Head of the Department of Pharmaceutical Chemistry and pharmacognosy, Ph.D. _____ /O.V. Zhukova/

29 August 2021

AGREED
Deputy Head of EMA ph.d. of biology _____ Lovtsova L.V.
(signature)

29 August 2021

1. Type of practice - educational.

2. Method of conducting practice - visiting.

3. The form of the practice - continuously.

4. Scope of practice - 6 CU.

5. Duration of practice - 4 weeks/216 academic hours (AH).

6. List of planned learning outcomes during internship, correlated with the planned results of mastering the educational program

6.1. **The purpose and objectives of mastering the academic discipline Educational practice in pharmacognosy**

The purpose of mastering the discipline: participation in forming the relevant competencies UC-1; GPC-1,3; PC-4.

As a result of completing the discipline, the student should

Know:

- system of rational use of natural resources of medicinal plants and their protection;
- characteristics of the raw material base of medicinal plants andthe system of procurement of medicinal plant materials in the country;
- basic information about the distribution and distribution areas of medicinal plants used in medical practice;
- general principles of rational procurement of medicinal plant materials and measures for the protection of natural, exploited thickets of medicinal plants;
- the nomenclature of medicinal plant raw materials and medicinal products of plant and animal origin permitted for use in medical practice;
- a system of complex resource study of medicinal plants;
- methods for determining the resources of wild medicinal plants in a given region using the example of herbaceous, woody and shrubby plants;
- regulatory documents for pharmaceutical activities when working with medicinal raw materials and herbal medicines;
- requirements for packaging and labeling of medicinal plant materials;
- rules for acceptance in a pharmacy of medicinal plant materials from suppliers;
- rules for the storage of medicinal raw materials andmedicinal products of plant and animal originin a pharmacy;
- pharmacological groups of non-prescription medicinal herbal raw materials and herbal medicines, medical purposes;
- rules for dispensing medicinal raw materialsand medicines of plant and animal originfrom a pharmacy.

Be able to:

- recognize medicinal plants by external signs in nature;
- use macroscopic and microscopic methods of analysis to determine the authenticity of MRM;
- determine HR in whole and crushed form using the appropriate determinants;
- recognize impurities of foreign plants in the analysis of raw materials.
- carry out the preparation of medicinal plant materials of various morphological groups;

- carry out acceptance, bringing raw materials to a standard state, analysis, processing, storage and dispensing of medicinal plant materials and herbal medicines
- store medicinal raw materials and medicinal products of plant and animal origin in a pharmacy.

Possess:

- the skills of identifying medicinal plants by external signs in live and herbaric species
- skills to determine the resources of wild medicinal plants
- skills to carry out statistical processing of resource research data, calculation of biological, operational reserve, possible volumes of annual procurement of medicinal plant materials of various morphological groups;
- the skills to organize and carry out the procurement of medicinal plant materials, taking into account the rational use of medicinal plant resources, to predict and justify ways to solve the problem of protecting the thickets of medicinal plants and the preservation of their gene pool
- skills to carry out primary processing, bring to a standard state and carry out drying of medicinal plant materials;
- skills to assess the quality of medicinal plant materials (plant organs used, histological structure, chemical composition of active and other groups of biologically active substances)
- skills to ensure the correct storage conditions for medicinal raw materials of plant and animal origin.
- skills to assess the possibilities of using herbal and animal medicines for the treatment and prevention of various diseases; analyze the effect of drugs on the basis of their pharmacological properties; possible toxic effects.
- skills to substantiate the ways of using raw materials and the use of herbal medicines in pharmaceutical practice.

Position of the academic discipline in the structure of the General Educational Program of Higher Education (GEP HE) of the organization.

The discipline belongs to the section of basicB2.U.2.

The discipline is taught in the 6th semester.

The following knowledge, skills and abilities formed by previous academic disciplines are required for mastering the discipline: *botany, latin, pharmacognosy*

Mastering the discipline is required for forming the following knowledge, skills and abilities for subsequent academic disciplines: *pharmacology, biotechnology, pharmaceutical technology, management and economics of pharmacy, pharmaceutical chemistry, toxicological chemistry*

6.2. **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	Code and name of the competence	As a result of mastering the discipline, the students should:

		part)	acquisition metric	know	be able to	possess
1.	UC-1.	Able to realize critical analysis of problem situations based on a systematic approach, develop strategy actions	UC-1.1. Analyzes the problem situation as a system identifying its components and connections between themUC-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 UC-1.4. Develops and meaningfully argues the strategy of solving the problem situations based on the system and interdisciplinary approaches UC-1.5. Uses logical and methodological tools for critical evaluation of modern concepts of philosophical and social nature in its subject areas	• methodology of abstract thinking for systematization of processes and construction of cause-and-effect relationships; • modern theoretical and experimental methods for the implementation of own and borrowed results of scientific research into practice.	• abstract, analyze and synthesize the information received; • highlight and to systematize the essential properties and connections of objects, to identify the main patterns of the objects under study; • search, select and analyze information obtained from various sources in order to make the best decision at the modern scientific level, in accordance with professional tasks and the requirements of legal documents.	• methods of self-control, abstract and analytical thinking; • skills in analyzing methodological problems that arise in solving research and practical problems, including those in interdisciplinary areas; • skills of presenting an independent point of view
2.	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-1.1. Applies basic biological methods of analysis for the development, research and examination of pharmaceuticals and medicinal plant raw materials GPC-1.2. Applies basic physical-chemical and chemical analysis methods for the development, research and examination of medicinal products and medicinal plant raw materials GPC-1.3. Applies	•organization of a system of state control over the production and manufacture of drugs; • the main regulatory documents, production and manufacture, quality control, storage and use of medicines (domestic and international standards (GMP, GLP, GCP, GPP), pharmacopoeias, orders of the Ministry of Health of the Russian Federation, guidelines and instructions approved by the Ministry of Health of the Russian Federation) for examination	• apply chemical, biological, physico-chemical and other methods of analysis during the examination of medicines.	•ensuring the process of quality control of medicines with equipment and consumables; • basic chemical, biological, physico-chemical and other methods of analysis during the examination of medicines.

			the basic methods of physical-chemical analysis in 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	using chemical, biological, physicochemical and other methods; • pharmacopoeial methods of analysis used in the analysis of medicinal products using chemical, biological, physicochemical and other methods.		
3.	GPC-3.	Able to carry out professional activities taking into account specific economic, environmental, social factors within the framework of the system of regulations of the medicine circulation sphere	GPC-3.1. Complies with norms and rules established by the authorized state authorities when solving the tasks of professional activity in the field of medicine circulation GPC-3.3. Performs labor actions taking into account their impact on the environment, preventing the occurrence of environmental hazards	• laws and legislative acts of the Russian Federation, normative and methodological materials of the Ministry of Health of Russia, regulating the procedure for conducting examinations provided for in the state registration of medicines; •general principles of development, testing and registration of medicines; • the basic principles, strategies, methods and procedures for quality control of medicines in the conditions of pharmaceutical organizations used in the course of examinations provided for in the state registration of medicines, in accordance with the requirements of the current regulatory and legislative framework.	• put into practice the basic principles of the system of quality control and safety of medicines in the conditions of pharmaceutical organizations; • to organize and carry out the procedure for quality control of medicines at the level of their production, transportation and storage using methods of pharmacopoeial analysis.	• skills in organizing and conducting quality control of medicines at the level of their production, transportation and storage; • the main methods of pharmaceutical analysis provided for in the state registration of medicines; • skills in carrying out preventive measures to ensure the quality of medicines at the level of their production, transportation and storage.
4.	PC-4.	Able to participate	PC-4.1. Conducts	•laws and	• apply	• basic chemical and

		in monitoring the quality, effectiveness and safety of medicines and medicinal plant raw materials	pharmaceutical analysis of pharmaceutical substances, excipients and medicines for medical use of factory production in accordance with quality standards PC-4.2. Performs intra-pharmacy quality control of medicines for medical use manufactured in a pharmacy organization PC-4.3. Conducts pharmacognostic analysis of medicinal plant raw materials and medicinal herbal preparations 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	legislative acts of the Russian Federation, regulatory and methodological materials of the Ministry of Health of Russia, regulating the procedure for quality control of medicines in the conditions of pharmaceutical organizations; • methods of analysis used in the quality control of drugs in the conditions of pharmaceutical organizations; • monitor drug quality assurance systems; • the process of providing equipment and consumables for quality control in the conditions of pharmaceutical organizations;	chemical, physico-chemical methods of intra-pharmacy quality of drugs in the conditions of pharmaceutical organizations; • draw up documentation of the established form for the control of manufactured medicinal products in the conditions of pharmaceutical organizations; • monitor drug quality assurance systems; • provide the process of quality control in pharmaceutical organizations with equipment and consumables.	physico-chemical methods of intra-pharmacy quality control of drugs in the conditions of pharmaceutical organizations; • registration of documentation of the established sample for the control of manufactured drugs in the conditions of pharmaceutical organizations.

8. Content of the practice.

8.1. Sections of practice and types of academic work

No. p/n	Sections (stages) of practice	Types of educational work, in practice, including independent work of students and labor intensity (in hours)			Forms of current control
		Types of educational work	aud		
1	Preparatory	Acquaintance with the program, calendar plan, base of practice. TV instruction. Receiving an individual task.	1.5		offset
2	Wild-growing medicinal plant of various habitats	Acquaintance with wild-growing medicinal plants in various habitats	12		diary
3	Definition, morphological description of medicinal plant and their herbarization.	Definition, morphological description of medicinal plants and their herbarization	13		diary
4	Pharmacognostic analysis of PRM.	Mastering Express Methods for Phytochemical Analysis of MPRS in Field and Laboratory Conditions	3.5		diary
5	Cultivation of medicinal plant.	The study of cultivated medicinal plants. Acquaintance with the methods of cultivation of medicinal plants on the basis of practice, mastering the techniques for caring for medicinal plants	13		diary
6	office processing	Chamber processing of raw materials. Bringing raw materials to a standard state	12		diary
7	Pharmacy assortment of medicinal plant raw	Study of the pharmacy assortment of MRM, finished medicines based on MRM, dietary supplements, homeopathic drugs.	100		diary

	materials and GLS based on it				
8	Practical	Preparation of an individual task	-	20	diary
9	Control	Preparing a report, receiving a credit.	6	35	credit
	TOTAL		**161**	**55**	

9. Forms of reporting on practice.
9.1. Practice diary.
9.2. Feedback from the practice base (individual and/or generalized).
9.3. A set of licensed and freely distributed software, including domestic production

Item no.	**Software**	**number of licenses**	**Type of software**	**Manufacturer**	**Number in the unified register of Russian software**	**Contract No. and date**
1	Wtware	100	Thin Client Operating System	Kovalev Andrey Alexandrovich	1960	2471/05-18 from 28.05.2018
2	MyOffice is Standard. A corporate user license for educational organizations, with no expiration date, with the right to receive updates for 1 year.	220	Office Application	LLC "NEW CLOUD TECHNOLOGIES"	283	without limitation, with the right to receive updates for 1 year.
3	LibreOffice		Office Application	The Document Foundation	Freely distributed software	
4	Windows 10 Education	700	Operating systems	Microsoft	Azure Dev Tools for Teaching Subscription	
5	Yandex. Browser		Browser	«Yandex»	3722	
6	Subscription to	170	Office Applica-	Microsoft		23618/HN10

	MS Office Pro for 170 PCs for FGBOU VO "PIMU" of the Ministry of Health of Russia		tion			030 LLC "Softline Trade" from 04.12.2020

10. Organization of current, intermediate and final control of knowledge*

No. p / p	Forms of control	Name of the discipline section	Assessment formats		
			types	number of test questions	number of test task options
1	2	3	4	5	6
	Credit	All sections of the discipline	Control questions	30	Unlimited (when conducting computer testing)
			Situational tasks	45	Unlimited (when conducting computer testing)

11. **Educational, methodological and informational support for mastering the academic discipline (printed, electronic publications, the Internet and other network resources)**

11.1. Key literature references

No.	Name according to bibliographic requirements	Number of copies	
		In the library	At the department
1	Pharmacognosy: textbook Electronic resource / I. A. Samylina, G. P. Yakovlev. - M. : GEOTAR-Media, 2014. - 976 p. – Access mode: http://www.studmedlib.ru/book/ISBN9785970430712.html	-	Electronic variant
2	State Pharmacopoeia of the Russian Federation Electronic resource / XIII Vol. 1: M.: - 2015. .- Access mode: http://www.femb.ru/feml	-	EBS "Student Advisor"
3	State Pharmacopoeia of the Russian Federation Electronic resource / XIII Vol. 3.: M.: - 2015. .- Access mode: http://www.femb.ru/feml	-	EBS "Student Advisor"
4	Samylina, I.A. Pharmacognosy [Electronic resource]: textbook / I.A. Samylina, G.P. Yakovlev. - M. :	EBS "Student Advisor"	EBS "Student Advisor"

	GEOTAR-Media, 2016. - Access mode: http://www.studmedlib.ru/book/ISBN9785970439111.html		

11.2. Further reading

No.	Name according to bibliographic requirements	Number of copies	
		In the library	At the department
1	Slesarev, V.I. Chemistry. Fundamentals of living chemistry: a textbook for universities / V.I. Slesarev. - St. Petersburg: Himizdat, 2000. - 768 p.	1	-
2	Pharmacognosy. Ecotoxicants in medicinal plant raw materials and phytopreparations: textbook / IV Gravel, Ya.N. Shoikhet, G. P. Yakovlev, I. A. Samylina. M. : GEOTAR-Media, 2012. 304 p.	1	-
3	Bobkova, N.V. Pharmacognosy. Test tasks and situational tasks [Electronic resource]: study guide / N.V. Bobkova; ed. I.A. Samylina. -M. : GEOTAR-Media, 2011. Access mode: http://www.studmedlib.ru/book/ISBN9785970416907.html	EBS "Student Advisor"	Electronic variant
4	Pharmacognosy. Test tasks and situational tasks: textbook / ed. I. A. Samylina. - M. : GEOTAR-Media, 2013. - 288 p.	1	-
5	Pharmacognosy. Medicinal raw materials of plant and animal origin: textbook / ed. ed. G. P. Yakovleva. - 2nd ed. correct and additional - St. Petersburg. : SpecLit, 2010. 863 p.	51	Electronic variant
6	Samylina, I. A. - Pharmacognosy. Atlas. In 3 vols T.1: General part. Terms and techniques of microscopic analysis in pharmacognosy: a study guide / I. A. Samylina, O. G. Anosova. - M. : GEOTAR-Media, 2007. - 192 p.	2	Electronic variant
7	Samylina, I. A. Pharmacognosy. Atlas. In 3 tons T.2: Medicinal plant materials. Anatomical and diagnostic features of pharmacopoeial and non-pharmacopoeial medicinal plant raw materials: a textbook / I. A. Samylina, O. G. Anosova. - M. : GEOTAR-Media, 2007. - 384 p.	2	Electronic variant
8	Samylina, I. A. - Pharmacognosy. Atlas. In 3 tons T.3: Medicinal plant materials, fees. vegetable powders. Medicines based on crushed plant raw materials: a textbook / I. A. Samylina, V. A. Ermakova, N. V. Bobkova, O. G. Anosova. - M. : GEOTAR-Media, 2009. - 488 p.	1	Electronic variant
9	Samylina, I.A. Pharmacognosy. Atlas. Volume 1 [Electronic resource] / Samylina I.A., Anosova O.G. - M. : GEOTAR-Media, 2010. Access mode: http://www.studmedlib.ru/book/ISBN9785970415764.html	EBS "Student Advisor"	EBS "Student Advisor"
10	Samylina, I.A. Pharmacognosy. Atlas. Volume 2 [Electronic resource] / Samylina I.A., Anosova O.G. - M. : GEOTAR-Media, 2010. - Access mode: http://www.studmedlib.ru/book/ISBN9785970415	EBS "Student Advisor"	EBS "Student Advisor"

	788.html		
el ev en	Pharmacognosy. Atlas. Volume 3 [Electronic resource] / Samylina I.A., Ermakova V.A., Bobkova I.V., Anosova O.G. - M. : GEOTAR-Media, 2010. □ Access mode: http://www.studmedlib.ru/book/ISBN9785970415801.html	EBS "Student Advisor"	EBS "Student Advisor"
12	Sorokina, A.A. Pharmacognosy. Concepts and terms: textbook / A. A. Sorokina and I. A. Samylina; Ed. organization GOU VPO Moscow Medical Academy. THEM. Sechenov Roszdrav. -M. : Medical Information Agency, 2007. □ 86 p.	1	-
13	Kurkin, V. A. Pharmacognosy: textbook / V. A. Kurkin. - Samara: Etching; SamGMU, 2004.□ 1180 p.	98	-
14	Kurkin, V. A.Pharmacognosy: a textbook for students of pharmaceutical universities (faculties) / V. A. Kurkin; Ed. organization Samara State Medical University. - 2nd ed., revised. and additional - Samara: Etching, 2007. - 1239 p.	70	Electronic variant
15	Selected lectures on pharmacognosy: textbook / V. F. Levinova, M. D. Reshetnikova, A. V. Khlebnikov, N. A. Startseva, A. B. Yakovlev; ed. G. I. Oleshko .- Perm : B.I., 2003. - 295 p.	56	-
16	Muravyova, D. A. Pharmacognosy: textbook / D. A. Muravyova, I. A. Samylina and G. P. Yakovlev. - 4th ed., revised. and additional .. - M .: Medicine, 2002. □ 656 p.	101	Electronic variant
17	European Pharmacopoeia 8th Edition. Vol. 1 and 2 with Supplements. Strasbourg: EDQM, 2013. 3503 p.	Electronic variant	-

11.4. Electronic educational resources for teaching academic subjects

11.4.1. Internal Electronic Library System of the University (IELSU)

Name of the electronic resource	Brief description (content)	Access conditions	Number of users
Internal electronic library system	Proceedings of the teaching staff of the Academy: textbooks and teaching aids, monographs, collections of scientific papers, scientific articles, dissertations, abstracts of dissertations, patents.	from any computer on the Internet, using an individual login and password	Not limited

11.4.2. Electronic educational resources acquired by the University

No. p / p	*Name of the electronic resource*	*Brief description (content)*	*Access conditions*	*Number of users*

1.	DB “Medicine. Healthcare (HPE)" (EBS "Student Consultant")	Educational literature + additional materials (audio, video, interactive materials, test tasks) for higher medical and pharmaceutical education	from any computer on the Internet, using an individual login and password [Electronic resource] - Access mode: http://www.studmedlib.ru/	General subscription of PIMU
2.	Electronic library system «BookUp»	Educational and scientific medical literature of Russian publishing houses, incl. translations of foreign publications	from any computer located on the Internet by login and password, from the computers of the academy. Subscribed editions are available for reading. [Electronic resource] - Access mode: http://www.books-up.ru/	General subscription of PIMU
3.	Electronic Medical Library "Doctor's Consultant"	National guidelines in all areas of medicine, clinical guidelines, textbooks, monographs, atlases, pharmaceutical reference books, audio and video materials, ICD-10 and ATC, recent publications in foreign journals with brief annotations in Russian	from any computer on the Internet, using an individual login and password	Not limited
4.	Domestic electronic periodicals	Medical periodicals	from the university computers on the platform of the SCIENTIFIC electronic library eLIBRARY.RU Subscribed editions are available for reading. [Electronic resource] - Access	Not limited

			mode: https://elibrary.ru/	
5.	DB Medline Complete	Foreign full-text database of articles from scientific periodicals and collections of medical and natural science topics	from university computers; from any computer on the Internet, using an individual login and password	Not limited
6.	Springer Electronic Collection	Full-text scientific publications (journals, books, articles, scientific protocols, conference materials, etc.) in the natural sciences, medical sciences and the humanities	from university computers	Not limited
7.	Electronic collection "Freedom" on the Science Direct platform	Books and periodicals of the publishing house "Elsevier" in the natural sciences, medicine and humanities	from university computers	Unlimited - until 12/31/2019
8.	DB Scopus	International Science Citation Abstract Database	from university computers	Not limited
9.	DB Web of Science Core Collection	International Science Citation Abstract Database	from university computers; from any computer on the Internet, using an individual login and password	Not limited
10.	DB Questel Orbit	Questel Patent Database	from university computers	Not limited

11.4.3 Open access resources

No. p / p	Name of the electronic resource	Brief description (content)	Access conditions
1	Federal Electronic Medical Library (FEMB)	Includes electronic analogues of printed publications and original electronic publications that have no analogues recorded on other media (dissertations, abstracts, books, magazines, etc.).	from any computer on the Internet
2.	Scientific electronic library	The largest Russian	from any computer on the

	eLIBRARY.RU	information portal in the field of science, technology, medicine and education, containing abstracts and full texts of scientific articles and publications.	Internet.
3.	Scientific electronic library of open access CyberLeninka	Full texts of scientific articles with annotations published in scientific journals in Russia and neighboring countries.	from any computer on the Internet
4.	Russian State Library (RSL)	Abstracts for which there are copyright agreements with permission for their open publication	from any computer on the Internet
5.	Reference and legal system "Consultant Plus"	Federal and regional legislation, judicial practice, financial advice, legislative comments, etc.	from any computer on the Internet

12. **Material and technical support for mastering an academic discipline**

12.1. List of premises for places activities for the discipline

*1.*Park "Switzerland" Prioksky district of Nizhny Novgorod,

*2.*Botanical garden "Dubenki"

*3.*Reserve "Green City"

12.2. List of equipment for classroom activities for the discipline

*1.*Each group of students in practice must be provided with a first aid kit.

2. Each student must have the following items of excursion equipment with him (herbarium net, dry clean newspapers (without color drawings and photographs), rope for pulling the net, scissors, digging shovel, plastic bags for collecting raw materials).

*3.*For installation work, you need:sheets of cardboard, labels, a textbook (or other reference material), white strong threads, scissors with sharp ends, a razor, a pen with black paste, a simple pencil, a ruler, a needle, an awl.

*4.*To conduct phytochemical analysis in the field, chemical glassware and reagents are required.

✓ For the organizational and final stages of practice - the necessary classroom fund of the department, furniture and equipment of classrooms, electronic computers, educational and methodological developments, library fund.

✓ Pharmaceutical analysis laboratories are equipped with a sufficient number of chemical glassware and reagents for the individual work of each student, the necessary instruments and apparatus: refractometers, polarimeters, spectrophotometers in the UV and Visible regions, as well as in the IR region, photoelectrocolorimeters, pH meters, a chromatograph for highly efficient liquid chromatography, a device for determining the friability of tablets, a device for determining the disintegration of tablets and capsules, a device for determining the dissolution of tablets, a device for determining the melting point (MTP) with electric heating, a muffle furnace, a dry-air cabinet, analytical balances, pharmaceutical scales, a set of weights and others

13. List of changes to the working program (to be filled out by the template)

Federal State Budgetary Educational Institution of Higher Education
"Privolzhsky Research Medical University"
Ministry of Health of the Russian Federation
(FSBEI HE "PRMU" of the Ministry of Health of Russia)

Department of
Name of the department

CHANGE REGISTRATION SHEET

working program for the academic discipline
NAME OF THE ACADEMIC DISCIPLINE

Field of study / specialty / scientific specialty: _____
(code, name)

Training profile: _____
(*name) - for master's degree programs*

Mode of study: _____
full-time/mixed attendance mode/extramural

Position	Number and name of the program section	Contents of the changes made	Effective date of the changes	Contributor's signature
1				

Approved at the department meeting
Protocol No. _____of _____20__

Head of the Department
_____ _____/_____
department name, academic title signature print name

Annex 1

Lectures using DOT and EIOS

No. p / p	Subject
	Medicinal plants of central Russia. Habitats, features of harvesting. Methods of phytochemical

	analysis of MMR (medicinal plant raw materials).
	Features of storage, packaging and labeling of various groups of medicinal plant materials.Regulatory regulation of the acceptance of medicinal plant raw materials by pharmacy organizations

Theoretical classes (practical classes or seminars) using DOT and EIOS

No. p / p	Subject
1	The study of cultivated medicinal plants. Acquaintance with the methods of cultivation of medicinal plants, mastering the methods of caring for medicinal plants
2	Methods of pharmacognostic analysis of medicinal plant materials

Independent work

No. p / p	Subject
	Study of the pharmacy assortment of MRM, finished medicines based on MRM, dietary supplements, homeopathic drugs.
	Chamber processing of raw materials. Bringing raw materials to a standard state
	Herbarization of medicinal plants
	Preparation of medicinal plant materials of various morphological groups, bringing to a standard state.
	The study of the range of finished medicinal herbal raw materials, fees, as well as finished medicines based on herbal raw materials sold by pharmacy organizations.
	The study of the features of the processing of medicinal plant materials for the manufacture of finished dosage forms.