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. Bogomolov
31 August, 2021

PRACTICE PROGRAM

Practice Name: **PRACTICE IN PHARMACEUTICAL TECHNOLOGY**

Type of practice: **PRODUCTION**

Specialty: **33.05.01 PHARMACY**

Graduate qualification: PHARMACIST

Department: MANAGEMENT AND ECONOMICS OF PHARMACY AND PHARMACEUTICAL TECHNOLOGY

Mode of Study: FULL-TIME

Nizhny Novgorod
2021

The work program was developed in accordance with the Federal State Educational Standard of Higher Education in the specialty 33.05.01 Pharmacy, approved by order of the Ministry of Education and Science of the Russian Federation dated March 27, 2018 No. 219.

Compiler of the practice program:
Ponomareva Alena Anatolyevna, Candidate of Philological Sciences, Associate Professor, Department of Management and Economics of Pharmacy and Pharmaceutical Technology

The practice program was reviewed and approved at a meeting of the department (minutes No. 9 of April 29, 2022).

Head of the Department, Ph.D. _____ I.V. Spitskaya

June 1, 2021

AGREED
Deputy Head of UMU _____ L.V. Lovtsova

June 1, 2021

1. The purpose and objectives of the internship.

1.1. The purpose of the internship– participation in the formation of:

- general professional competencies (GPC-1 (1.1-1.4), GPC - 2 (2.2), GPC - 6 (6.2-6.3);
- professional competencies (PC-1 (1.1-1.4), PC-7 (7.1-7.4)).

1.2. Practice objectives– as a result of the internship, the student must:

know

- requirements for maintaining subject-quantitative accounting of medicines
- requirements for maintaining reporting documentation in pharmaceutical organizations,
- professional record keeping
- classification of narcotic drugs, psychotropic, toxic chemicals, biological agents, radioactive substances and their physical and chemical–characteristics;
- technology of dosage forms obtained in the conditions of pharmaceutical production: powders, collections, granules, capsules, microgranules, microcapsules, dragees, tablets, aqueous solutions for internal and external use, solutions–in viscous and volatile solvents, syrups, aromatic waters, tinctures, extracts, ophthalmic dosage forms, solutions for injections and infusions, suspensions for enteral and parenteral use, emulsions for enteral and parenteral use, ointments, suppositories, plasters, sticks, films, aerosols ;
- technology for the manufacture of medicines in a pharmacy: powders, aqueous solutions for internal and external use, solutions in viscous and volatile solvents, ophthalmic dosage forms, solutions for injections and infusions, suspensions for enteral and parenteral use, emulsions, aqueous–extracts from medicinal plant materials, complex combined preparations with a liquid dispersion medium, ointments, suppositories;
- normative documentation regulating the production and quality of medicines in pharmacies and pharmaceutical enterprises;
- nomenclature of modern excipients, their properties, purpose
- theoretical foundations of biopharmacy, pharmaceutical factors that have–influence on the therapeutic effect in the extemporaneous and industrial production of dosage forms
- device and principles of operation of a modern laboratory and production–equipment;
- analysis methods used in drug quality control and described in the State Pharmacopoeia
- normative documentation regulating the manufacture, production and quality of medicines at pharmaceutical enterprises;
- technology of dosage forms obtained in the conditions of pharmaceutical production

Be able to:

- maintain reporting documentation in accordance with established requirements
- register data on manufactured drugs
- draw up basic technological and instrumental schemes for the production of finished medicines
- draw up a material balance and carry out calculations taking into account the con-

sumption rates of the entire technological process by stages

- draw up a technological section of the industrial regulation for the production of finished dosage forms
- carry out step-by-step control at the stages of manufacturing the finished product and during the holiday;
- as well as to standardize DF in terms of technological and biopharmaceutical indicators in accordance with the current regulatory documents
- make fragments of ND on LF
- work independently with educational and reference literature;
- ensure compliance with the rules of industrial hygiene, environmental protection, labor, safety

process:

- the skills of conducting subject-quantitative accounting of certain groups of drugs and other substances subject to such accounting
- skills in maintaining reporting documentation in the prescribed manner–skills in maintaining registration of data on the manufacture of medicinal products (filling out a written control passport;
- in the case of use in the manufacture of drugs that are subject to quantitative accounting, registration of the reverse side of the prescription)
- basic information transformation technologies: text, spreadsheet editors;
- technique of working on the Internet for professional activities;
- skills in compiling technological sections of industrial regulations for the production of finished dosage forms, including technological and instrumental schemes for the production of finished dosage forms;
- develop an accounting policy, keep records of inventory items: cash and settlements, prepare reports for internal and external users of accounting information

2. The place of practice in the structure of the EP VO organization.

The practice refers to Block 2 of the PEP VO of the specialist in the specialty 33.05.01 Pharmacy, conducted on the 4th year in the 7th semester according to the schedule.

Type of practice: production.
Practice Type: practice according to the profile of training.
Practice method: stationary.
Practice form: continuously.
General laboriousness of the practice:3 credits (108 academic hours).
Practice duration: 12 days.

3. The results of mastering and indicators of the achievement of competencies during the internship.

The internship is aimed at developing the following universal (UC), general professional (OPK) and professional (PC) competencies among students:

No. p / p	Competency Code	The content of the competence (or part of it)	Code and name of the indicator of achievement of competence	As a result of studying the discipline, students should:		
				know	be able to	process
1.	GPC-1.	GPC-1. Able to use basic biological, physico-chemical, chemical, mathematical methods for the development, research and examination of medicines, the manufacture of medicines	GPC-1.1. Applies the main biological methods of analysis for the development, research and examination of medicines and medicinal plant materials GPC-1.2. Applies basic physico-chemical and chemical methods of analysis for the development, research and examination of medicines and medicinal herbal raw materials GPC-1.3. Applies the main methods of physical and chemical analysis in the manufacture of medicines GPC-1.4. Applies mathematical methods and performs mathematical processing of data obtained during the development of medicines, as well as research and ex-	• requirements for maintaining subject-quantitative accounting of medicines • requirements for maintaining reporting documentation in pharmaceutical organizations, • professional record keeping • classification of narcotic drugs, psychotropic, toxic chemicals, biological agents, radioactive substances and their physical and chemi- cal–characteristics; • technology of dosage forms obtained in the conditions of pharmaceutical production: powders, collections, granules, capsules, microgranules, microcapsules, dragees, tablets, aqueous solutions for internal and external use, solutions–in vis-	• maintain reporting documentation in accordance with established requirements • register data on manufactured drugs • draw up basic technological and instrumental schemes for the production of finished medicines • draw up a material balance and carry out calculations taking into account the consumption rates of the entire technological process by stages • draw up a technological section of the industrial regulation for the production of finished dosage forms • carry out step-by-step control at the stages of manufacturing the finished product and during the holiday; • as well as to standard-	• the skills of conducting subject-quantitative accounting of certain groups of drugs and other substances subject to such accounting • skills in maintaining reporting documentation in the prescribed manner–skills in maintaining registration of data on the manufacture of medicinal products (filling out a written control passport; • in the case of use in the manufacture of drugs that are subject to quantitative accounting, registration of the reverse side of the prescription) • basic information transformation technologies: text, spreadsheet editors; • technique of working

			amination of medicines and medicinal plant materials	cous and volatile solvents, syrups, aromatic waters, tinctures, extracts, ophthalmic dosage forms, solutions for injections and infusions, suspensions for enteral and parenteral use, emulsions for enteral and parenteral use, ointments, suppositories, plasters, sticks, films, aerosols ; • technology for the manufacture of medicines in a pharmacy: powders, aqueous solutions for internal and external use, solutions in viscous and volatile solvents, ophthalmic dosage forms, solutions for injections and infusions, suspensions for enteral and parenteral use, emulsions, aqueous–extracts from medicinal plant materials, complex combined preparations with a liquid dispersion medium, ointments, suppositories; • normative documentation regulating the pro-	ize DF in terms of technological and biopharmaceutical indicators in accordance with the current regulatory documents • make fragments of ND on LF • work independently with educational and reference literature; • ensure compliance with the rules of industrial hygiene, environmental protection, labor, safety	on the Internet for professional activities; • skills in compiling technological sections of industrial regulations for the production of finished dosage forms, including technological and instrumental schemes for the production of finished dosage forms; • develop an accounting policy, keep records of inventory items: cash and settlements, prepare reports for internal and external users of accounting information

				duction and quality of medicines in pharmacies and pharmaceutical enterprises; • nomenclature of modern excipients, their properties, purpose • theoretical foundations of biopharmacy, pharmaceutical factors that have–influence on the therapeutic effect in the extemporaneous and industrial production of dosage forms • device and principles of operation of a modern laboratory and production–equipment; • analysis methods used in drug quality control and described in the State Pharmacopoeia • normative documentation regulating the manufacture, production and quality of medicines at pharmaceutical enterprises; • technology of dosage forms obtained in the conditions of pharmaceutical production		

2.	GPC-2	Able to apply knowledge about morphofunctional features, physiological states and pathological processes in the human body to solve professional problems	GPC-2.2. Explains the main and side effects of drugs, the effects of their combined use and interaction with food, taking into account morphofunctional features, physiological conditions and pathological processes in the human body	• requirements for maintaining subject-quantitative accounting of medicines • requirements for maintaining reporting documentation in pharmaceutical organizations, • professional record keeping • classification of narcotic drugs, psychotropic, toxic chemicals, biological agents, radioactive substances and their physical and chemical–characteristics; • technology of dosage forms obtained in the conditions of pharmaceutical production: powders, collections, granules, capsules, microgranules, microcapsules, dragees, tablets, aqueous solutions for internal and external use, solutions–in viscous and volatile solvents, syrups, aromatic waters, tinctures, extracts, ophthalmic dosage forms, solutions	• maintain reporting documentation in accordance with established requirements • register data on manufactured drugs • draw up basic technological and instrumental schemes for the production of finished medicines • draw up a material balance and carry out calculations taking into account the consumption rates of the entire technological process by stages • draw up a technological section of the industrial regulation for the production of finished dosage forms • carry out step-by-step control at the stages of manufacturing the finished product and during the holiday; • as well as to standardize DF in terms of technological and biopharmaceutical indicators in accordance with the current regulatory	• the skills of conducting subject-quantitative accounting of certain groups of drugs and other substances subject to such accounting • skills in maintaining reporting documentation in the prescribed manner–skills in maintaining registration of data on the manufacture of medicinal products (filling out a written control passport; • in the case of use in the manufacture of drugs that are subject to quantitative accounting, registration of the reverse side of the prescription) • basic information transformation technologies: text, spreadsheet editors; • technique of working on the Internet for professional activities; • skills in compiling technological sections of industrial regula-

				for injections and infusions, suspensions for enteral and parenteral use, emulsions for enteral and parenteral use, ointments, suppositories, plasters, sticks, films, aerosols ; • technology for the manufacture of medicines in a pharmacy: powders, aqueous solutions for internal and external use, solutions in viscous and volatile solvents, ophthalmic dosage forms, solutions for injections and infusions, suspensions for enteral and parenteral use, emulsions, aqueous–extracts from medicinal plant materials, complex combined preparations with a liquid dispersion medium, ointments, suppositories; • normative documentation regulating the production and quality of medicines in pharmacies and pharmaceutical enterprises; • nomenclature of mod-	documents • make fragments of ND on LF • work independently with educational and reference literature; • ensure compliance with the rules of industrial hygiene, environmental protection, labor, safety	tions for the production of finished dosage forms, including technological and instrumental schemes for the production of finished dosage forms; • develop an accounting policy, keep records of inventory items: cash and settlements, prepare reports for internal and external users of accounting information

				ern excipients, their properties, purpose • theoretical foundations of biopharmacy, pharmaceutical factors that have–influence on the therapeutic effect in the extemporaneous and industrial production of dosage forms • device and principles of operation of a modern laboratory and production–equipment; • analysis methods used in drug quality control and described in the State Pharmacopoeia • normative documentation regulating the manufacture, production and quality of medicines at pharmaceutical enterprises; • technology of dosage forms obtained in the conditions of pharmaceutical production		
3.	GPC-6.	Able to understand the principles of operation of modern information technologies and use them to solve problems	GPC-6.2. Carries out an effective search for information necessary to solve the problems of professional activity, us-	• requirements for maintaining subject-quantitative accounting of medicines • requirements for main-	• maintain reporting documentation in accordance with established requirements • register data on	• the skills of conducting subject-quantitative accounting of certain groups of drugs and other

		of professional activity	ing 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	taining reporting documentation in pharmaceutical organizations, • professional record keeping • classification of narcotic drugs, psychotropic, toxic chemicals, biological agents, radioactive substances and their physical and chemical–characteristics; • technology of dosage forms obtained in the conditions of pharmaceutical production: powders, collections, granules, capsules, microgranules, microcapsules, dragees, tablets, aqueous solutions for internal and external use, solutions–in viscous and volatile solvents, syrups, aromatic waters, tinctures, extracts, ophthalmic dosage forms, solutions for injections and infusions, suspensions for enteral and parenteral use, emulsions for enteral and parenteral	manufactured drugs • draw up basic technological and instrumental schemes for the production of finished medicines • draw up a material balance and carry out calculations taking into account the consumption rates of the entire technological process by stages • draw up a technological section of the industrial regulation for the production of finished dosage forms • carry out step-by-step control at the stages of manufacturing the finished product and during the holiday; • as well as to standardize DF in terms of technological and biopharmaceutical indicators in accordance with the current regulatory documents • make fragments of ND on LF • work independently with educational and	substances subject to such accounting • skills in maintaining reporting documentation in the prescribed manner–skills in maintaining registration of data on the manufacture of medicinal products (filling out a written control passport; • in the case of use in the manufacture of drugs that are subject to quantitative accounting, registration of the reverse side of the prescription) • basic information transformation technologies: text, spreadsheet editors; • technique of working on the Internet for professional activities; • skills in compiling technological sections of industrial regulations for the production of finished dosage forms, including technological and instrumental schemes for

				use, ointments, suppositories, plasters, sticks, films, aerosols ; • technology for the manufacture of medicines in a pharmacy: powders, aqueous solutions for internal and external use, solutions in viscous and volatile solvents, ophthalmic dosage forms, solutions for injections and infusions, suspensions for enteral and parenteral use, emulsions, aqueous–extracts from medicinal plant materials, complex combined preparations with a liquid dispersion medium, ointments, suppositories; • normative documentation regulating the production and quality of medicines in pharmacies and pharmaceutical enterprises; • nomenclature of modern excipients, their properties, purpose • theoretical foundations of biopharmacy, phar-	reference literature; • ensure compliance with the rules of industrial hygiene, environmental protection, labor, safety	the production of finished dosage forms; • develop an accounting policy, keep records of inventory items: cash and settlements, prepare reports for internal and external users of accounting information

				maceutical factors that have–influence on the therapeutic effect in the extemporaneous and industrial production of dosage forms • device and principles of operation of a modern laboratory and production–equipment; • analysis methods used in drug quality control and described in the State Pharmacopoeia • normative documentation regulating the manufacture, production and quality of medicines at pharmaceutical enterprises; • technology of dosage forms obtained in the conditions of pharmaceutical production		
4.	PC-1.	Capable of manufacturing medicines for medical use	PC-1.1. Carries out activities to prepare the workplace, technological equipment, medicinal and excipients for the manufacture of medicinal products in accordance with prescriptions and (or) requirements	• requirements for maintaining subject-quantitative accounting of medicines • requirements for maintaining reporting documentation in pharmaceutical organizations, • professional record	• maintain reporting documentation in accordance with established requirements • register data on manufactured drugs • draw up basic technological and instrumental schemes for the	• the skills of conducting subject-quantitative accounting of certain groups of drugs and other substances subject to such accounting • skills in maintaining reporting documenta-

			PC-1.2. Produces medicinal products in accordance with established rules and taking into account the compatibility of medicinal and excipients, controlling quality at all stages of the technological process PC-1.3. Packs, labels and (or) issues manufactured medicinal products for dispensing PC-1.4. Registers data on the manufacture of medicinal products in the prescribed manner, including keeping a subject-quantitative record of groups of medicinal products and other substances subject to such accounting	keeping • classification of narcotic drugs, psychotropic, toxic chemicals, biological agents, radioactive substances and their physical and chemical–characteristics; • technology of dosage forms obtained in the conditions of pharmaceutical production: powders, collections, granules, capsules, microgranules, microcapsules, dragees, tablets, aqueous solutions for internal and external use, solutions–in viscous and volatile solvents, syrups, aromatic waters, tinctures, extracts, ophthalmic dosage forms, solutions for injections and infusions, suspensions for enteral and parenteral use, emulsions for enteral and parenteral use, ointments, suppositories, plasters, sticks, films, aerosols ; • technology for the	production of finished medicines • draw up a material balance and carry out calculations taking into account the consumption rates of the entire technological process by stages • draw up a technological section of the industrial regulation for the production of finished dosage forms • carry out step-by-step control at the stages of manufacturing the finished product and during the holiday; • as well as to standardize DF in terms of technological and biopharmaceutical indicators in accordance with the current regulatory documents • make fragments of ND on LF • work independently with educational and reference literature; • ensure compliance with the rules of industrial hygiene, environmental	tion in the prescribed manner–skills in maintaining registration of data on the manufacture of medicinal products (filling out a written control passport; • in the case of use in the manufacture of drugs that are subject to quantitative accounting, registration of the reverse side of the prescription) • basic information transformation technologies: text, spreadsheet editors; • technique of working on the Internet for professional activities; • skills in compiling technological sections of industrial regulations for the production of finished dosage forms, including technological and instrumental schemes for the production of finished dosage forms; • develop an accounting policy, keep records of

				manufacture of medicines in a pharmacy: powders, aqueous solutions for internal and external use, solutions in viscous and volatile solvents, ophthalmic dosage forms, solutions for injections and infusions, suspensions for enteral and parenteral use, emulsions, aqueous–extracts from medicinal plant materials, complex combined preparations with a liquid dispersion medium, ointments, suppositories; • normative documentation regulating the production and quality of medicines in pharmacies and pharmaceutical enterprises; • nomenclature of modern excipients, their properties, purpose • theoretical foundations of biopharmacy, pharmaceutical factors that have–influence on the therapeutic effect in the extemporaneous	protection, labor, safety	inventory items: cash and settlements, prepare reports for internal and external users of accounting information

				and industrial production of dosage forms • device and principles of operation of a modern laboratory and production–equipment; • analysis methods used in drug quality control and described in the State Pharmacopoeia • normative documentation regulating the manufacture, production and quality of medicines at pharmaceutical enterprises; • technology of dosage forms obtained in the conditions of pharmaceutical production		
5.	PC-7.	Able to carry out operations related to the technological process in the manufacture of medicines, and their control	PC-7.1. Ensures a level of good manufacturing in accordance with applicable codes and regulations PC-7.2. Participates in all technological operations carried out in the manufacture of medicines at pharmaceutical enterprises	• requirements for maintaining subject-quantitative accounting of medicines • requirements for maintaining reporting documentation in pharmaceutical organizations, • professional record keeping • classification of narcotic drugs, psychotropic, toxic chemicals, bio-	• maintain reporting documentation in accordance with established requirements • register data on manufactured drugs • draw up basic technological and instrumental schemes for the production of finished medicines • draw up a material balance and carry out cal-	• the skills of conducting subject-quantitative accounting of certain groups of drugs and other substances subject to such accounting • skills in maintaining reporting documentation in the prescribed manner–skills in maintaining registration of data on the

			PC-7.3. Monitors compliance with the requirements of the technological regulations of production in order to comply with the norms of the technological process PC-7.4. Monitors the compliance of equipment used in production and instrumentation with the requirements of technological documentation PC-7.5. Monitors the compliance of the used raw materials and auxiliary materials with the requirements of ND	logical agents, radioactive substances and their physical and chemical–characteristics; • technology of dosage forms obtained in the conditions of pharmaceutical production: powders, collections, granules, capsules, microgranules, microcapsules, dragees, tablets, aqueous solutions for internal and external use, solutions–in viscous and volatile solvents, syrups, aromatic waters, tinctures, extracts, ophthalmic dosage forms, solutions for injections and infusions, suspensions for enteral and parenteral use, emulsions for enteral and parenteral use, ointments, suppositories, plasters, sticks, films, aerosols ; • technology for the manufacture of medicines in a pharmacy: powders, aqueous solutions for internal and external use, solutions	culations taking into account the consumption rates of the entire technological process by stages • draw up a technological section of the industrial regulation for the production of finished dosage forms • carry out step-by-step control at the stages of manufacturing the finished product and during the holiday; • as well as to standardize DF in terms of technological and biopharmaceutical indicators in accordance with the current regulatory documents • make fragments of ND on LF • work independently with educational and reference literature; • ensure compliance with the rules of industrial hygiene, environmental protection, labor, safety	manufacture of medicinal products (filling out a written control passport; • in the case of use in the manufacture of drugs that are subject to quantitative accounting, registration of the reverse side of the prescription) • basic information transformation technologies: text, spreadsheet editors; • technique of working on the Internet for professional activities; • skills in compiling technological sections of industrial regulations for the production of finished dosage forms, including technological and instrumental schemes for the production of finished dosage forms; • develop an accounting policy, keep records of inventory items: cash and settlements, prepare reports for internal and external users

				in viscous and volatile solvents, ophthalmic dosage forms, solutions for injections and infusions, suspensions for enteral and parenteral use, emulsions, aqueous–extracts from medicinal plant materials, complex combined preparations with a liquid dispersion medium, ointments, suppositories; • normative documentation regulating the production and quality of medicines in pharmacies and pharmaceutical enterprises; • nomenclature of modern excipients, their properties, purpose • theoretical foundations of biopharmacy, pharmaceutical factors that have–influence on the therapeutic effect in the extemporaneous and industrial production of dosage forms • device and principles of operation of a modern laboratory and pro-		of accounting information

				duction–equipment; • analysis methods used in drug quality control and described in the State Pharmacopoeia • normative documentation regulating the manufacture, production and quality of medicines at pharmaceutical enterprises; • technology of dosage forms obtained in the conditions of pharmaceutical production		

4. The content of the practice.

4.1.Distribution of labor intensity of practice and types of training sessions.

Type of study work	Labor intensity		Labor intensity by semesters (ACh)
	volume in credit units (CU)	volume in academic hours (AH)	9
Classroom activities (total):	not provided		
Lectures (L)	not provided		
Practical exercises (PZ)	not provided		
Seminars (C)	not provided		
Consultation with practice leader (C)	not provided		
Independent work (SR)	3	108	108
Intermediate certification (PA): credit			
TOTAL LABOR CAPACITY	3	108	108

4.2. Sections of practice and types of classes.

No. p / p	Semester	Name discipline section	Types of educational work (in ACH)					
			L	LP	PZ	WITH	SRO	Total
1	10	Pharmaceutical technology practice	-	-	-	-	108	108
		TOTAL:					108	108

*L - lectures; LP - laboratory workshop; PZ - practical exercises; C - seminars; SRO - independent work of the student.

No. p / p	Semester	Name discipline section	Types of educational work (in ACH)					
			L	LP	PZ	WITH	SRO	Total
1	10	Pharmaceutical technology practice	-	-	-	-	108	108
		TOTAL:					108	108

4.3. Thematic plan of lectures.

Lectures are not provided by the Federal State Educational Standard.

4.4. Thematic plan of practical classes.

Practical classes are not provided by the Federal State Educational Standard.

4.5. Thematic plan of seminars.

Seminars are not provided by GEF.

4.6. Independent work of students by types and topics.

No. p / p	Types of CPC Items	Labor intensity by semesters (ACh)
		9
1	Work with literature sources and other sources of information	10
2	Working with electronic educational resources hosted on the educational portal of the university	10
3	Study of regulatory documents	10
4	Solving situational production (professional) tasks, performing case tasks	66
5	Preparation for the test	12
	TOTAL (total -108AH)	108

5. Forms of reporting on practice.

9.1. Diary (report) on practice.

9.2. Reviews from the practice base.

6. Fund of assessment tools for ongoing monitoring and intermediate certification of students in practice

No. p / p	semester number	Forms of control	Name of discipline/practice section	Evaluation tools		
				kinds	number of questions in the task	number of independent options
1	2	3	4	5	6	7
1.	10	Control of the development of the topic, control of the student's independent work	Practice in Management and Economics of Pharmaceutical Organizations	Tests	20	5
				Control questions	2	20
				Report with presentation	1	thirty
2.	10	offset		Control questions	2	20

7. Educational, methodological and informational support of practice (printed, electronic publications, Internet and other network resources).

7.1. List of basic literature.

7.1. List of basic literature*:

No.	Name according to bibliographic requirements	Number of copies	
		At the department	In library
1.	Pharmaceutical technology. Manufacturing of drugs: textbook / A.S. Gavrilov.-M. : GEOTAR-Media, 2022.	Electronic resource	
2.	Pharmaceutical technology. Manufacturing of medicines: textbook / V. A. Loyd, A. S. Gavrilov.-M. : GEOTAR-Media, 20214	Electronic resource	
3.	Pharmaceutical technology. Industrial production of medicines. Volume 1 / I. I. Krasnyuk, N. B. Demina, E. O. Bakhrushina, M. N. Anurova.-M. : GEOTAR-Media, 2020	Electronic resource	
4.	Pharmaceutical technology. Industrial production of medicines. Volume 2: textbook / I. I. Krasnyuk, N. B. Demina, M. N. Anurova, E. O. Bakhrushina.-M. : GEOTAR-Media, 2022.	Electronic resource	
5	Pharmaceutical technology. Industrial production of medicines. Guide to laboratory studies. at 2 pm Part 1: textbook / T. A. Brezhneva**.** -M. : GEOTAR-Media, 20217	Electronic resource	
6	Pharmaceutical technology. Guide to practical exercises: study guide / I.I. Krasnyuk, N.B. Demina, M.N. Anurova.-M. : GEOTAR-Media, 2018	Electronic resource	
7	Pharmaceutical technology. Technology of dosage forms: textbook / I. I. Krasnyuk, G. V. Mikhailova, T. V. Denisova, V. I. Sklyarenko.-M. : GEOTAR-Media, 2018.	Electronic resource	

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7.2. List of additional literature*:

No.	Name	Quantity copies	
		At the department	In library
1.	Pharmaceutical homeopathy: Proc. allowance for students. higher textbook institutions / I.I. Krasnyuk, G.V. Mikhailov; Ed. ON THE. Zamarenova. - M.: Publishing Center "Academy", 2005. - 272 p.	5	
2.	Tutorial. Medical cosmetics/I.I. Krasnyuk, G.V. Mikhailova, E.T. Chizhova. - M.: Publishing Center "Academy", 2006. - 240p.	5	thirty
3.	State Pharmacopoeia of the USSR X edition, 1968.	2	
4.	State Pharmacopoeia of the USSR XI edition, issue 1, 1987; release 2,1990.	8	
5.	State Pharmacopoeia XIV edition	Electronic resource	
6.	State Pharmacopoeia XIIIth ed. - Volume 1, Volume 2, Volume 3.-M: Scientific Center for Expertise of Medicinal Products, 2015.	2	
7.	Order of the Ministry of Industry and Trade of the Russian Federation No. 916 dated June 14, 2013 "On Approval of the Rules of Good Practice"	20	
8.	Order of the Ministry of Health of the Russian Federation No. 751n dated October 26, 2015 "On approval of the rules for the manufacture and dispensing of drugs for medical use by pharmacy organizations, individual entrepreneurs licensed for pharmaceutical activities"	20	
9.	Order of the Ministry of Health and Social Development of the Russian Federation of August 23, 2010 N 706n "On approval of the Rules for the storage of medicines"	20	
10.	Sinev D.Ya., Marchenko L.G., Sineva T.D. Reference manual for pharmaceutical technology of drugs. - St. Petersburg,1992.	5	
11.	Mashkovsky M.D. medicines. - 15th edition, revised, corrected. and additional - M.: RIA "New Wave", 2007. - 1206 p.	5	

7.3. Electronic educational resources used in the process of teaching the discipline.

7.3.1. Internal Electronic Library System of the University (VEBS)

Name of electronic resource	Brief description (content)	Access conditions	Number of users
Internal electronic library system	Proceedings of the faculty of the university: textbooks,	From any computer and mobile device with an indi-	Not limited

(VEBS)http://nbk.pimunn.net/MegaPro/Web	teaching aids, collections of problems, methodological manuals, laboratory work, monographs, collections of scientific papers, scientific articles, dissertations, abstracts of dissertations, patents	vidual login and password. Access mode:http://nbk.pimunn.net/MegaPro/Web	

7.3.2. Electronic educational resources purchased by the university

No. p/n	Name electronic resource	Brief description (content)	Access conditions	Quantity users
1.	**EBS "Student Advisor"**(Electronic database "Student Advisor". Database “Medicine. Healthcare (VO) and “Medicine. Healthcare (SPO)")http://www.studmedlib.ru	Educational literature, additional materials (audio, video, interactive materials, test tasks) for higher medical and pharmaceutical education	From any computer and mobile device with an individual login and password. Access mode:http://nbk.pimunn.net/MegaPro/Web	Not limited
2.	**Database “Doctor's Consultant. Electronic Medical Library»**https://www.rosmedlib.ru	National guidelines, clinical guidelines, textbooks, monographs, atlases, pharmaceutical guides, audio and video materials, ICD-10 and ATC	From any computer and mobile device with an individual login and password. Access mode:http://nbk.pimunn.net/MegaPro/Web	Not limited
3.	**Electronic library system "Bukap"** https://www.books-up.ru	Educational and scientific medical literature of Russian publishing houses, incl. translations of foreign publications. Within the framework of the Big Medical Library project, publications of universities participating in the project are available	From any computer and mobile device using an individual login and password; access from university computers is automatic. Publications from the "My Books" section are available for reading. Access mode:http://nbk.pimunn.net/MegaPro/Web	Not limited
4.	**Educational platform "URAIT"** https://urait.ru	Collection of publications on psychology, ethics, conflictology	From any computer and mobile device with an individual login and password. Access mode:http://nbk.pimunn.net/MegaPro/Web	Not limited

5.	**Electronic periodicals**as part of the database "Scientific electronic library eLIBRARY https://elibrary.ru	Electronic medical magazines	From university computers. Access mode:https://elibrary.ru	Not limited
6.	**Integrated Information Library System (IBS) of the Scientific and Educational Medical Cluster of the Volga Federal District - Srednevolzhsky**(contract free of charge)	Electronic copies of scientific and educational publications from the funds of the libraries participating in the scientific and educational medical cluster of the Volga Federal District "Srednevolzhsky"	Access by individual login and password from any computer and mobile device. Access mode: sites of libraries participating in the project	Not limited Validity: is not limited
7.	**Electronic reference and legal system "Consultant Plus"**(contract free of charge)http://www.consultant.ru	Regulatory documents regulating the activities of medical and pharmaceutical institutions	From the computers of the scientific library. Access mode:http://www.consultant.ru/	Not limited Validity: is not limited
8.	**National Electronic Library (NEB)**(contract free of charge) http://neb.rf	Electronic copies of publications (including scientific and educational) on a wide range of knowledge	Scientific and educational works that have not been republished for the last 10 years are in the public domain. Works limited by copyright – from the computers of the scientific library. Access mode:http://neb.rf	Not limited Validity: is not limited

7.3.3. Open Access Resources

No. p/n	Name electronic resource	a brief description of (content)	Access conditions	Number of users
domestic resources				
1.	**Federal Electronic Medical Library (FEMB)** http://neb.rf	Full-text electronic copies of printed publications and original electronic publications in medicine and biology	From any computer on the Internet. Access mode:http://neb.rf	Not limited
2.	**Scientific electronic library eLIBRARY.RU**https://elibrary.ru	Abstracts and full texts of scientific publications, electronic versions of Russian scientific journals	From any computer on the Internet. Access mode:https://elibrary.ru	Not limited
3.	**Scientific electronic library of the open**	Full texts of scientific articles with annotations pub-	From any computer on the Internet.	Not limited

	Access CyberLeninkahttp://cyberleninka.ru	lished in scientific journals in Russia and neighboring countries	Access mode:https://cyberleninka.ru	
Foreign resources within the framework of the National subscription				
1.	**Springer Electronic Collection** https://rd.springer.com	Full-text scientific publications (journals, books, articles, scientific protocols, conference proceedings)	From university computers. Access mode:https://rd.springer.com	Not limited
2.	**Wiley Periodicals Database** www.onlinelibrary.wiley.com	Wiley Periodicals	From university computers, from any computer using an individual login and password Access mode:www.onlinelibrary.wiley.com	Not limited
3.	**Electronic collection of periodicals "Freedom" on the ScienceDirect platform** https://www.sciencedirect.com	Elsevier Periodicals	From university computers, from any computer with an individual login and password. Access mode:https://www.sciencedirect.com	Not limited
4.	**Scopus database** www.scopus.com	International Science Citation Abstract Database	From university computers, from any computer with an individual login and password. Access mode:www.scopus.com	Not limited
5.	**Database Web of Science Core Collection** https://www.webofscience.com	International Science Citation Abstract Database	From university computers, from any computer with an individual login and password. Access mode:https://www.webofscience.com	Not limited
6.	**Questel Database Orbit** https://www.orbit.com	Questel Patent Database	From university computers. Access mode:https://www.orbit.com	Not limited
Foreign resources of open access (the main ones are indicated)				
1.	**PubMed** https://www.ncbi.nlm.nihgov/pubmed	Search engine of the US National Library of Medicine on the databases "Medline", "PreMedline"	From any computer and mobile device. Access mode:https://www.ncbi.nlm.nihgov/pubmed	Not limited
2.	**Directory of Open**	Directory of open access to	From any computer	Not limited

	Access Journals http://www.doaj.org	the full-text collection of periodicals	and mobile device. Access mode:http://www.doaj.org	
3.	**Directory of open access books (DOAB)** http://www.doabooks.org	Directory of open access to the full-text collection of scientific books	From any computer and mobile device. Access mode:http://www.doabooks.org	Not limited

8. Logistics support of discipline.

8.1. List of organizationsused in the practice.

Structural divisions of medical and pharmaceutical organizations engaged in medical and pharmaceutical activities.

8.2. List of premises necessary for conducting classroom lessons in the discipline.

1. An audience for lectures and practical classes, equipped with multimedia and other teaching aids that allow the use of simulation technologies, with standard sets of professional models (sets of clinical trial protocols, formulary lists of health care facilities, price lists of distribution companies, sets of quality of life questionnaires), allowing students to master the skills and abilities provided for by professional activity individually.

2. Simulation center "Training Pharmacy", equipped with simulation equipment that simulates the activities of a pharmacy and its structural divisions (acceptance of goods, storage of goods, dispensing, pharmaceutical examination of a prescription) in an amount that allows students to master the skills and abilities provided for by professional activities individually

3. Premises for independent work of students, equipped with computer equipment with the ability to connect to the Internet and provide access to the electronic information and educational environment of the University.

8.3. Equipment list used in the practice.

1. Multimedia complex (laptop, projector, screen, TV)
2. Computer class (15 computers) with installed applications and Internet access.

9. 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 MS Office Pro for 170 PCs for FGBOU VO "PIMU" of the Ministry of Health of Russia	170	Office Application	Microsoft		23618/HN10030 LLC "Softline Trade" from 04.12.2020

10. 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

PRACTICE IN PHARMACEUTICAL TECHNOLOGY

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