MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)
INSTITUTE OF LIFE SCIENCES AND BIOMEDICINE (SCHOOL)

I APPROVED
Director of the Institute of Life
Sciences and Biomedicine (School)

_____ Yu.S. Khotimchenko
Full name

"06" December 2022

COLLECTION OF WORK PROGRAMS PRACTICES
specialty 05/33/01 Pharmacy
Specialization "Clinical and Experimental Pharmacy (in English)"

Graduate qualification - pharmacist
Full-time form of education
The standard period for completing the program is 5 years
Starting year of preparation 2023

Vladivostok
2022

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WORK PROGRAM OF TRAINING PRACTICE
Educational practice. Pharmaceutical propaedeutic practice
Specialty 05/33/01 Pharmacy
Form of preparation (full-time)

Vladivostok
2022

OBJECTIVES OF MASTERING EDUCATIONAL PRACTICE

The purpose of the practice is “Training practice. Pharmaceutical propaedeutic practice" is the formation of 1st year students of the specialty 05.33.01 Pharmacy of general ideas about the basics of pharmacy on a practical example of the work of the main sections of pharmacy institutions, familiarity with the subjects of circulation of medicines, their tasks and functions, familiarity with general issues of organizing drug supply to the population, types and organization of pharmacies, get an idea of the product range of the pharmacy.

OBJECTIVES OF EDUCATIONAL PRACTICE

Introducing 1st year students to:

- pharmaceutical terminology;
- the main tasks and functions of pharmacy organizations;
- occupational health and safety of pharmaceutical workers;
- sanitary regime of pharmacy organizations;
- Acquisition by students of practical skills and competencies in the field of professional activities of pharmaceutical workers in:
- sanitary regime of pharmacy enterprises;
- occupational health and safety of pharmaceutical workers.

PLACE OF TRAINING PRACTICE IN THE STRUCTURE OF EP

“Training practice. Pharmaceutical propaedeutic practice" is an integral part of the main professional educational program, it is a mandatory part of block 2 "Practice" and is mandatory.

The knowledge acquired by students in practice is necessary for successful completion of the following types of practical activities in pharmaceutical technology:

Educational practice. Pharmacognosy practice

Educational practice. Practice in general pharmaceutical technology

Educational practice. First Aid Practice

Internship. Pharmaceutical technology practice

Internship. Medicine quality control practice

Internship. Practice in management and economics of pharmaceutical organizations

Internship. Practice in pharmaceutical consulting and information.

TYPES, METHODS, PLACE AND TIMES OF TRAINING PRACTICE

Type of practice – educational practice.

Type of practice: Pharmaceutical propaedeutic practice

Method of implementation – stationary/on-site, concentrated

In accordance with the schedule of the educational process, the practice is implemented in the second semester.

Training practice is carried out on the basis of pharmacies, including on the basis of prescription and production pharmacies, equipped with modern equipment (weighing instruments, equipment for processing pharmaceutical glassware and closures (washing machines, autoclaves, drying cabinets) and small-scale mechanization means.

For persons with disabilities and people with disabilities, the choice of places of practice is consistent with the requirement of their accessibility for these students and the practice is carried out taking into account the characteristics of their psychophysical development, individual capabilities and health status.

STUDENT COMPETENCIES FORMED AS A RESULT OF TRAINING PRACTICE

The internship process is aimed at developing the following competencies:

General professional competencies of graduates and indicators of their achievement

Name of the category (group) of general professional competencies	Code and name of general professional competence (result of mastery)	Code and name of the competency achievement indicator
Adaptation to production conditions	OPK-3. Able to carry out professional activities taking into account specific economic, environmental, social factors within the framework of the system of legal regulation of the sphere of circulation of medicines	OPK -3.1 Complies with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
		OPK -3.2 Takes into account, when making management decisions, economic and social factors that influence the financial and economic activities of pharmaceutical organizations
		OPK -3.3 Performs labor actions taking into account their impact on the environment, preventing the occurrence of environmental hazards
		OPK -3.4 Determines and interprets the main environmental indicators of the state of the production environment during the production of medicines

Code and name of the competency achievement indicator	Name of the assessment indicator (results of training in the discipline)
GPC-3.1 Complies with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines	Knows the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
	Able to solve problems of professional activity in the field of drug circulation
	Knows methods of compliance with the norms and rules established by authorized government bodies when solving

	problems of professional activity in the field of circulation of medicines
GPC-3.2 Takes into account, when making management decisions, economic and social factors that influence the financial and economic activities of pharmaceutical organizations	Knows the economic and social factors that influence the financial and economic activities of pharmaceutical organizations
	Able to take into account economic and social factors when making management decisions
	Knows methods of taking into account economic and social factors
OPK-3.3 Performs labor actions taking into account their impact on the environment, preventing the occurrence of environmental hazards	Knows the environmental impact of his work activities
	Able to perform work activities taking into account their impact on the environment
	Knows methods of counteracting environmental hazards
OPK – 3.4 Determines and interprets the main environmental indicators of the state of the production environment during the production of medicines	Knows the main environmental indicators of the state of the production environment during the production of medicines
	Able to identify and interpret the main environmental indicators of the state of the production environment during the production of medicines
	Knows methods for determining and interpreting the main environmental indicators of the state of the production environment during the production of medicines

Professional competencies of graduates and indicators of their achievement:

Task type	Code and name of professional competence (result of mastery)	Code and name of the competency achievement indicator
pharmaceutical	PK-5 Capable of producing medicines and taking part in the production technology of finished medicines	PC-5.6 Calculates the quantities of medicines and excipients for the production of all types of modern dosage forms
pharmaceutical	PK-6 Able to solve professional problems when dispensing and selling medicines and other pharmaceutical products through pharmaceutical and medical organizations	PC-6.1. Conducts pharmaceutical examination of recipes and invoice requirements, as well as their registration and taxation in the prescribed manner
		PC-6.2. Sells and dispenses medicinal products for medical use and other pharmaceutical products to individuals, as well as dispenses them to departments of medical organizations, monitoring compliance with the procedure for dispensing medicinal products for medical use and other pharmaceutical products, providing pharmaceutical consultation and providing pharmaceutical information
		PC-6.3. Carries out office work for maintaining cash, organizational, administrative, and reporting documents for retail sales

		PC-6.4. Carries out office work on maintaining organizational, administrative, payment reporting documents for wholesale sales
		PC-6.5. Carries out pre-sale preparation, organizes and displays medicines and pharmaceutical products in the sales area and (or) showcases of departments of the pharmacy organization
	PK-7 Able to provide pharmaceutical information and consultation during the dispensing and sale of drugs for medical use and other pharmaceutical products	PC-7.1. Provides information and consulting assistance to visitors of the pharmacy organization when choosing medications and other pharmaceutical products, as well as on issues of their rational use, taking into account the biopharmaceutical features of dosage forms
		PC-7.2. Informs medical workers about medications, their synonyms and analogues, possible side effects and interactions, taking into account the biopharmaceutical features of dosage forms

Code and name of the competency achievement indicator	Name of the assessment indicator (result of training by practice)
PC-5.6 Conducts calculations of quantities of medicines and excipients for the production of all types of modern dosage forms	Knows the theoretical basis for calculating the quantities of drugs and excipients for the production of all types of modern dosage forms Able to carry out calculations of the quantities of medicines and excipients for the production of all types of modern dosage forms. Knows methods for calculating the quantities of medicines and excipients for the production of all types of modern dosage forms.
PC-6.1. Conducts pharmaceutical examination of recipes and invoice requirements, as well as their registration and taxation in the prescribed manner	Knows theoretical fundamentalspharmaceutical examination of recipes and invoice requirements, as well as their registration and taxation in the prescribed manner
	Can doconduct pharmaceutical examination of recipes and invoice requirements, as well as their registration and taxation in the prescribed manner
	Knows methodspharmaceutical examination of recipes and invoice requirements, as well as their registration and taxation in the prescribed manner
PC-6.2. Sells and dispenses medicinal products for medical	Knows theoretical fundamentalssales and dispensing of medicinal products for medical use and other

use and other pharmaceutical products to individuals, as well as dispenses them to departments of medical organizations, monitoring compliance with the procedure for dispensing medicinal products for medical use and other pharmaceutical products, providing pharmaceutical consultation and providing pharmaceutical information	pharmaceutical products to individuals, as well as their dispensing to divisions of medical organizations, monitoring compliance with the procedure for dispensing medicinal products for medical use and other pharmaceutical products with pharmaceutical consulting and provision of pharmaceutical information
	Cansell and dispense medicinal products for medical use and other pharmaceutical products to individuals, and also release them to departments of medical organizations, monitoring compliance with the procedure for dispensing medicinal products for medical use and other pharmaceutical products, providing pharmaceutical consultation and providing pharmaceutical information
	Knows methodssales and dispensing of medicinal products for medical use and other pharmaceutical products to individuals, as well as their dispensing to divisions of medical organizations, monitoring compliance with the procedure for dispensing medicinal products for medical use and other pharmaceutical products with pharmaceutical consulting and provision of pharmaceutical information
PC-6.3. Carries out office work for maintaining cash, organizational, administrative, and reporting documents for retail sales	Knows theoretical fundamentalsoffice work for maintaining cash, organizational, administrative, reporting documents for retail sales
	Cancarry out office work on maintaining cash, organizational, administrative, reporting documents for retail sales
	Knows methodsoffice work for maintaining cash, organizational, administrative, reporting documents for retail sales
PC-6.4. Carries out office work on maintaining organizational, administrative, payment reporting documents for wholesale sales	Knows theoretical fundamentalsrecords management, organizational, administrative, payment reporting documents for wholesale sales
	Cancarry out office work on maintaining organizational, administrative, payment reporting documents for wholesale sales
	Knows methodsrecords management, organizational, administrative, payment reporting documents for wholesale sales
PC-6.5. Carries out pre-sale preparation, organizes and displays medicines and pharmaceutical products in the sales area and (or) showcases of departments of the pharmacy organization	Knows theoretical fundamentalspre-sale preparation, organizes and displays medicines and pharmaceutical products in the sales area and (or) showcases of departments of the pharmacy organization
	Cancarry out pre-sale preparation, organize and carry out the display of medicines and pharmaceutical products in the sales area and (or) showcases of departments of the pharmacy organization
	Knows methodspre-sale preparation, organizes and displays medicines and pharmaceutical products in the sales area and (or) showcases of departments of the pharmacy organization
PC-7.1. Provides information and consulting assistance to visitors of the pharmacy organization	Knows theoretical fundamentalsinformation and consulting assistance to visitors of a pharmacy organization when choosing medications and other

when choosing medications and other pharmaceutical products, as well as on issues of their rational use, taking into account the biopharmaceutical features of dosage forms	pharmaceutical products, as well as on issues of their rational use, taking into account the biopharmaceutical features of dosage forms
	Canprovide information and consulting assistance to visitors of a pharmacy organization when choosing medications and other pharmaceutical products, as well as on issues of their rational use, taking into account the biopharmaceutical features of dosage forms
	Knows methodsinformation and consulting assistance to visitors of a pharmacy organization when choosing medications and other pharmaceutical products, as well as on issues of their rational use, taking into account the biopharmaceutical features of dosage forms
PC-7.2. Informs medical workers about medications, their synonyms and analogues, possible side effects and interactions, taking into account the biopharmaceutical features of dosage forms	Knows theoretical fundamentalsinforming medical workers about medications, their synonyms and analogues, possible side effects and interactions, taking into account the biopharmaceutical features of dosage forms
	Caninform medical workers about medications, their synonyms and analogues, possible side effects and interactions, taking into account the biopharmaceutical features of dosage forms
	Knows methodsinforming medical workers about medications, their synonyms and analogues, possible side effects and interactions, taking into account the biopharmaceutical features of dosage forms
PC-7.3. Makes a decision on replacing a prescribed medicinal product with synonymous or similar drugs in the prescribed manner based on information about groups of medicinal products and synonyms within one international nonproprietary name and their prices, taking into account the biopharmaceutical features of dosage forms	Knows theoretical fundamentalsmaking a decision to replace a prescribed medicinal product with synonymous or similar drugs in the prescribed manner based on information about groups of medicinal products and synonyms within one international nonproprietary name and their prices, taking into account the biopharmaceutical features of dosage forms
	Canmake a decision on replacing a prescribed drug with synonymous or similar drugs in the prescribed manner based on information about groups of drugs and synonyms within one international nonproprietary name and their prices, taking into account the biopharmaceutical features of dosage forms
	Knows methodsmaking a decision to replace a prescribed medicinal product with synonymous or similar drugs in the prescribed manner based on information about groups of medicinal products and synonyms within one international nonproprietary name and their prices, taking into account the biopharmaceutical features of dosage forms

STRUCTURE AND CONTENT OF TRAINING PRACTICE

The total labor intensity of educational practice is 3 credit units, 2 weeks, 108 hours.

Chapter (stage)practices	View educational work on practice, including independent work students And labor intensity (in hours)				Current control form
	Instruction on technology security	Consultation	Collection, processing material	Independent Job	
1.Preparatory stage	2	1	2	8	Checking attendance. Briefing And test By technology security. Checking the completion of the stage.
2.Basic stage (Acquaintance With main task and functions pharmacies. Regulatory documentation, regulating work pharmacies And sanitary mode pharmacies. Organization work prescription-production department pharmacies. Are common requirements, presented To conditions pharmacy manufacturing dosage forms. Work organization department ready-made medicinal funds And	-	1	7	60	Examination attendance. Performance collected materials to the manager practices. Examination execution stage.

over-the-counter vacation.)					
3.Final stage	-	1	2	20	Examination attendance. Testing. Examination execution stage.
4.Preparation of the report	-	1	1	2	Surrender and defense reports By practice
Total	2	4	12	90	
Total	108				

EDUCATIONAL AND METHODOLOGICALENSURING STUDENTS' INDEPENDENT WORK IN PRACTICE

General recommendations for organizing students' independent work in practice are as follows:

Before completing the internship, the student must study the program of educational practice for obtaining primary professional skills, including primary skills and skills of research activities, refer to the relevant regulatory materials in order to be prepared to carry out the instructions given by the supervisor of the internship, to make decisions specific legal issues.

The beginning of an internship is associated, first of all, with familiarizing the student with the structure and constituent documents of pharmacy institutions, studying the functional responsibilities (job descriptions) of the employees of the pharmacies in which the internship takes place.

If you have any questions or need advice on completing an internship or performing independent types of work, you should contact the practice managers from the pharmacy and FEFU.

During practice, each student must keep a diary, which reflects the work done.

The practice diary includes a title page, a calendar plan for the internship, a list of materials collected during the internship, information about the types of work done. Records of the work done are entered into the practice diary daily.

Based on the results of the practice, a written report is drawn up, which is compiled individually by each student based on the materials received during the practice period.

CERTIFICATION FORMS (BASED ON THE RESULTS OF PRACTICE)

For certification based on the results of the internship, the student must provide a report on the internship (the title page form in Appendix 1) with a note from the internship supervisor from the enterprise, a diary of the internship (Appendix 2), with

a daily note from the internship supervisor from the enterprise about the completion of work on schedule.

The report is drawn up in accordance with the requirements of clause 10.4.

Certification based on the results of practice is carried out in the form of defending a report in the form of a presentation. Reporting form: test with assessment.

Typical tasks for defending an internship report:

When performing certain types of educational practice work listed above, the student must be guided by the following tasks and brief recommendations for their implementation, namely:

Familiarize yourself with safety precautions in a pharmacy.

Familiarize yourself with the premises of the pharmacy and their purpose, paying attention, first of all (in the case of referral to a production pharmacy), to the prescription and production department (assistant, defector, material and other rooms). In the assistant's room, it is necessary to pay attention to the design of the bars with drugs of various groups, their storage, location on turntables, the organization of work on the manufacture of packaging, and quality control of drugs. Make a brief note on this item in your diary;

Familiarize yourself with the staff of the pharmacy, paying attention to the names of positions, the main functions of employees;

Familiarize yourself with the ways of promoting prescriptions in the pharmacy from their receipt to the dispensing of the prepared drug, paying attention to the forms and the correctness of the prescriptions;

If sent to a production pharmacy, learn how to handle, wash, dry, sterilize glassware, closures and auxiliary materials. Before performing these types of work, you must read the instructions, guidelines and orders (No. 214, 309). The diary should describe the method of processing utensils used in this pharmacy, indicate the capacity of the bottles, rods used in the pharmacy, their color, list the closure material, provide a list of devices and devices used for washing, drying, sterilization (indicating the names and types devices);

If sent to an industrial pharmacy, familiarize yourself with the devices for obtaining purified water and water for injection, the conditions for their receipt, collection, storage, and the organization of supply of purified water to workplaces. In your diary, indicate the types of apparatus and draw a diagram of the structure of one of the distillers;

If you are referred to a production pharmacy, familiarize yourself with the organization of aseptic conditions in which ophthalmic, injectable and antibiotic preparations are prepared. It is necessary to pay attention to the premises in which these medicines are manufactured, what the sanitary regime is, methods for disinfecting air, utensils, auxiliary materials, and the personal hygiene of personnel working in these

conditions. The diary should list those devices and instruments that are used in the pharmacy for sterilization, filtration, and quality control of medications manufactured under aseptic conditions;

Methodological materials defining the assessment procedure

To receive a positive assessment based on the results of the internship, the student must fully complete the internship program, timely complete and submit to the internship supervisor all the necessary reporting documents. The results of the work done should be reflected in the practice report. The report is checked and signed by the head of practice from the enterprise, then submitted to the head of practice from the university in the last week of practice on time. If the place of internship is FEFU, the report is prepared by the student and submitted to the head of the internship from the university. The final grade for the practice is given on the basis of all submitted documents, through which the regularity of visiting the place of practice, the thoroughness of the report, the student's initiative shown during the practice and the ability for independent professional activity are revealed. The results of the internship are assessed according to the following criteria: - level of mastery of competencies; - review of the practice manager from the organization; - practical results of the work carried out and their significance; - the quality of the student's answers to questions on the substance of the report. Based on the results of the practice and the defense of students' reports, the teacher - the head of the practice draws up a summary report. A credit for practice is equivalent to grades for theoretical training and is taken into account when summing up the overall performance of students. The grade received by students on the test is taken into account when assigning a scholarship. A student who does not complete the internship program for a valid reason will have the period of completion extended without interruption from his/her studies. In case of failure to complete the internship program, failure to submit a report on the internship, or receiving a negative review from the internship supervisor from the enterprise where the student practiced, and an unsatisfactory grade when defending the report, the student may be expelled from the university.

Preparation of a practice report

The internship report is compiled in accordance with the main stage of the internship program and reflects the implementation of the internship program. The report is drawn up on A4 paper (210x297 mm). The text of the report is presented on one side of the sheet, in Times New Roman font, size 14, with 1.5 intervals. Each page of the work is designed with the following margins: left - 30 mm; right - 10 mm; top - 20 mm; lower - 20 mm. The paragraph indent in the text is 1.5 cm. All pages of the work must have continuous numbering, including appendices. Numbering is done in Arabic numerals, with the page serial number placed in the lower right corner, starting

with the table of contents after the title page. All structural elements of the practice report are stitched together. The report can be illustrated with tables, graphs, diagrams, filled-in forms, and drawings. The pages of the report are numbered in Arabic numerals, with continuous numbering throughout the text. The number is placed in the center of the bottom of the sheet (aligned from the center) without a dot at the end of the number. The title page is included in the general page numbering, but the page number is not indicated on the title page. Digital material should be presented in the form of tables. The table should be placed in the report immediately after the text in which it is mentioned for the first time, or on the next page. All tables provided must have links in the text of the report. Tables should be numbered in Arabic numerals and sequentially numbered throughout the text of the report. The number should be placed above the table on the left without a paragraph indent after the word “Table”.

Contents of the report sections:

Title page (Appendix 1). The report must describe the goals and objectives of the practice and provide a brief description of the place of practice (organization). The main part should contain a description of the history of the creation of the place of practice, the organizational structure of the enterprise, the competitive environment of the enterprise, the scope of activity of the practice object. The following describes the stages of work in accordance with the individual task, and provides proposals for improving and organizing the work of the enterprise. The conclusion reflects the results achieved, an analysis of the problems encountered and options for eliminating them, and one’s own assessment of the level of one’s professional training based on the results of the practice. The report should reflect the student’s opinion on the issues studied during theoretical training, their correspondence to real activities, as well as what special skills and knowledge the student acquired during practice.

Attached to the internship report:

An internship diary, certified by the internship supervisor from the host party, including a list and brief description of the daily types of work performed by the student during the internship in accordance with the internship calendar plan (Appendix 2).

Characteristics (review) of the practice manager from the receiving party.

EDUCATIONAL, METHODOLOGICAL AND INFORMATION SUPPORT OF PRACTICE

MAIN LITERATURE

Pharmaceutical technology. Technology of dosage forms [Electronic resource]: textbook / I. I. Krasnyuk, G. V. Mikhailova, T. V. Denisova, V. I. Sklyarenko; Ed. I. I.

Krasnyuk, G. V. Mikhailova. - M.: GEOTAR-Media, 2013. - Access mode:http://www.studmedlib.ru/book/ISBN9785970426944.html

Pharmaceutical technology. Manufacturing of medicines [Electronic resource]: textbook. manual / Loyd V. Allen, A. S. Gavrilov - M.: GEOTAR-Media, 2014. - Access mode:http://www.studmedlib.ru/book/ISBN9785970427811.html

Electronic publication based on: Quality control of medicines: textbook / T. V. Pleteneva, E. V. Uspenskaya, L. I. Muradova / ed. T. V. Pleteneva. - M.: GEOTAR-Media, 2014. - 560 p. - ISBN 978-5-9704-2634-0. - Access mode:http://www.studmedlib.ru/book/ISBN9785970426340.html

ADDITIONAL LITERATURE

Gavrilov A.S., Pharmaceutical technology. Manufacturing of medicinal products [Electronic resource] / A.S. Gavrilov - M.: GEOTAR-Media, 2016. - 760 p. - Access mode:http://www.studentlibrary.ru/book/ISBN9785970436905.html

Tatarnikov M.A., Collection of job descriptions for employees of healthcare institutions [Electronic resource] / M.A. Tatarnikov - M.: GEOTAR-Media, 2016. - 688 p. - Access mode:http://www.studentlibrary.ru/book/ISBN9785970437544.html

Regulations

SP 3.3.2.1248-03 “Conditions for transportation and storage of medical immunobiological preparations.”

SP 3.3.2.1120-02 “Sanitary and epidemiological requirements for the conditions of transportation, storage and dispensing to citizens of medical immunobiological preparations used for immunoprophylaxis by pharmacies and healthcare institutions.

Order of the Ministry of Health and Social Development of the Russian Federation dated August 23, 2010. No. 706n “On approval of rules for storing drugs.”

Order of the Ministry of Health of the Russian Federation dated October 21, 1997 No. 309 “On approval of the Instructions on the sanitary regime of pharmacy organizations (pharmacies) (as amended on April 24, 2003).” - Access mode:http://www.roszdravnadzor.ru/documents/35825

SOFTWARE AND ELECTRONIC INFORMATION RESOURCES

Federal electronic medical libraryhttp://feml.scsml.rssi.ru/feml/

Legal information systemhttp://www.consultant.ru/

Scientific electronic library eLIBRARY project RFBRwww.elibrary.ru

FEFU Scientific Libraryhttp://www.dvfu.ru/web/library/nb1

Microsoft Office Professional Plus 2010; an office suite that includes software for working with various types of documents (texts, spreadsheets, databases, etc.);

7Zip 9.20 - a free file archiver with a high degree of data compression;

ABBYY FineReader eleven - program For optical character recognition;

Adobe Acrobat XI Pro – a software package for creating and viewing electronic publications in PDF format;

ESET Endpoint Security - comprehensive protection for Windows-based workstations. Virtualization support + new technologies;

Google Chrome.

LOGISTICS

Name of equipped premises/premises for independent work/practice bases	List of main equipment
Limited Liability Company "Azalis" Vladivostok, st. Vyazovaya, 1B Treaty 1238/15	Standard infrastructure of a pharmacy organization
Limited Liability Company "Vernalis", Vladivostok, st. Shilkinskaya, 10A (shopping center "Slavic") Treaty 1210/17	Standard infrastructure of a pharmacy organization
Limited Liability Company "Iris" Vladivostok, Ostryakov Ave., 13 Treaty 1210/17	Standard infrastructure of a pharmacy organization
Limited Liability Company "Solid" Vladivostok, Ave. 100 years of Vladivostok, 20 Treaty 1329/15	Standard infrastructure of a pharmacy organization
Limited Liability Company "Efta" Vladivostok, st. Ladygina, 9 Treaty 1324/15	Standard infrastructure of a pharmacy organization
Limited Liability Company "Alfar" Vladivostok, st. Russkaya, 94a Treaty 2457/13	Standard infrastructure of a pharmacy organization

Audiences for independent work of students Reading rooms of the Scientific FEFU libraries with open access to the collection (building A - level 10)	Educational furniture sets (tables and chairs) Monoblock HP ProOpe 400 All-in-One 19.5 (1600x900), Core i3-4150T, 4GB DDR3-1600 (1x4GB), 1TB HDD 7200 SATA, DVD+/-RW, GigEth, Wi -Fi, BT, usb kbd/mse,Win7Pro (64-bit)+Win8.1Pro(64-bit),1-1-1 Wty Internet access speed 500 Mbit/sec. Workplaces for people with disabilities are equipped with displays and Braille printers; equipped with: portable devices for reading flat-printed texts, scanning and reading machines, video enlargers with the ability to regulate color spectrums; magnifying electronic magnifiers and ultrasonic markers
Audience for independent work of students 690922, Primorsky Territory, Vladivostok, Russky Island, Saperny Peninsula, Ajax village, 10, Building 25.1, room. M621	Sets of educational furniture (tables and chairs), student board. All-in-one Lenovo C360G-i34164G500UDK 19.5" Intel Core i3-4160T 4GB DDR3-1600 SODIMM (1x4GB)500GB Windows Seven Enterprise - 17 pieces; Wired LAN network – Cisco 800 series; wireless LANs for students are provided with a system based on 802.11a/b/g/n 2x2 MIMO(2SS) access points.

Appraisal Fund

A list of competencies that students must master as a result of mastering the educational program, a description of indicators and criteria for their evaluation at various stages of formation, school of assessment.

When conducting certification, the level of development of the following competencies is taken into account:

Code and formulation of competencies	Stages of developing competencies		Criteria	Indicators
OPK-3. Able to carry out professional activities taking into account specific economic, environmental, social factors within the framework of the system of legal regulation of the sphere of circulation of medicines	Knows (threshold level)	norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines	Great	Knows perfectly the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
			Fine	Knows sufficiently the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
			will satisfyreally	Partially knows the norms and rules established by authorized government bodies when solving problems of professional activity in the field of

				circulation of medicines
			unsatisfactoryspecifically	Does not know the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
	Can (advanced level)	solve problems of professional activity in the field of drug circulation	Great	Perfectly knows how to solve problems of professional activity in the field of drug circulation
			Fine	Sufficiently able to solve problems of professional activity in the field of drug circulation
			will satisfyreally	Partially able to solve problems of professional activity in the field of drug circulation
			unsatisfactoryspecifically	Does not know how to solve professional problems in the field of drug circulation
	Proficient (high level)	methods of compliance with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines	Great	He is fluent in methods of compliance with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
			Fine	Has sufficient knowledge of methods of compliance with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
			will satisfyreally	Partially knows how to comply with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
			unsatisfactoryspecifically	Does not know how to comply with the norms and rules established by authorized government

				bodies when solving problems of professional activity in the field of circulation of medicines
PK-5 Able to manufacture medicines and take part in the technology of production of finished medicines K-6 Able to solve professional problems when dispensing and selling medicines and other pharmaceutical products through pharmaceutical and medical organizations PK-7 Able to provide pharmaceutical information and consultation during the dispensing and sale of drugs for medical use and other pharmaceutical products	Knows (threshold level)	procedure for dispensing medicinesV pharmacies and ways to provide pharmaceutical information and consultation when dispensing and selling drugs for medical use and other pharmaceutical products	Great	Student V knows perfectly basic provisions for the dispensing of medicines
			Fine	Student V to a sufficient extent knows basic provisions of the procedure for dispensing drugs funds
			will satisfyreally	Student partiallykno ws basicprovisi ons for the dispensing of medicinal products funds
			unsatisfactoryspeci fically	The student does not know the basic provisions of the procedure for dispensing medications funds
		carry out pharmaceutical examination prescription (choice forms prescription form, filling it out correctly, checking normal one-time dispensing, single and daily doses) with using ND	Great	It has deepknowl edge of the rules for preparing recipes, canaccurate ly carry out the examination recipes
			Fine	Has sufficient knowledge of the rules for preparing recipes, cancon duct examination of recipes, admits minor inaccuracies

			will satisfyreally	Possesses partial, Notsystematic ability to work with recipes, It hasgeneral performance O prescription rules
			unsatisfactoryspecifically	It has fragmentary representation O prescription rules
	Proficient (high level)	professional communication skills	Great	Possesses professional skills communication on high level
			Fine	Possesses professional skills communication on sufficient level
			will satisfyreally	Owns partiallyprofessional skills about communication
			unsatisfactoryspecifically	Not ownsprofessional skills about communication

Assessment criteria for practical certification for 1st year students

In total, you can get a maximum of 100 points in the practice test.

Points for work during practice are distributed as follows:

36 points - attending an internship. If there are no gaps, 36 points are given, for each gap 6 points are deducted. If the practice is missed for a good reason (due to illness, documented, official release of the dean's office to participate in various events), then the point is not deducted.

36 points – filling out a diary and reporting documentation.

0-28 points – defense of a practice report in the form of a presentation.

Scale of correspondence of rating points to the five-point scale:

An "excellent" grade (91–100 points) is given to a student who, when defending a report, demonstrates deep knowledge of scientific and technical documentation. The

practice diary and reporting documents are prepared by the student in accordance with the requirements of this work program.

A “good” grade (77–90 points) is given to a student who, when defending a report, demonstrates deep knowledge of scientific and technical documentation. However, there were some mistakes in the answer, which were corrected by the student with the help of the teacher. The practice diary and reporting documents are prepared by the student in accordance with the requirements of this work program.

A “satisfactory” grade (61–76 points) is given to a student who, when defending a report, demonstrates insufficient knowledge of scientific and technical documentation and makes mistakes.

The practice diary and reporting documents are prepared by the student in accordance with the requirements of this work program.

A grade of “unsatisfactory” (less than 61 points) is given to a student who, when defending a report on practice, gives an incomplete answer, which represents scattered knowledge on the topic of the question with significant errors. The diary and reporting documents are partially completed.

Compiled by:
Department Assistant
pharmacy and pharmacology  Pak P.A.

Agreed:

Head of OP  Shokur O.A.

Annex 1

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)
Institute of Life Sciences and Biomedicine (School)
Department of Pharmacy and Pharmacology

Full Name

REPORT

Educational practice
Educational practice. Pharmaceutical propaedeutic practice
specialty 05/33/01 Pharmacy

The author of the work is student gr. WITH____
signature
"_____»_____202. Head of practice from the Institute of Housing and Mechanical Engineering of the Far Eastern Federal University.

_____

_____
(position, academic title)

_____

(signature) (I.O.F)
"_____»_____202

The report is protected with a rating____

_____ _____
(signature) (I.O.F)
"_____»_____202

Vladivostok 202

Appendix 2

MINISTRY OF EDUCATION AND SCIENCE OF THE RUSSIAN FEDERATION

Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"

INSTITUTE OF LIFE SCIENCES AND BIOMEDICINE (SCHOOL)

Department of Pharmacy and Pharmacology

Full Name

DIARY

Completing educational practice
“Training practice. Pharmaceutical propaedeutic practice"
student course

_____

(Full name.)

specialty 05/33/01 Pharmacy

Place of practice_____

_____

_____

Practice time:

Start_____

ending_____

Head of practice:

from the university_____

from the enterprise_____

M.p.

Vladivostok

20_g.

THE FIRST DAY	
date	
day of the week	
place of work (department)	
content of the work (description of the process)	
compliance with schedule	
grade	
signature of the practice manager from the company	

SECOND DAY	
date	
day of the week	
place of work	
content of the work (description of the process)	
compliance with schedule	
grade	
signature of the practice manager from the company	

DAY …….	
date	
day of the week	
place of work	
content of the work (description of the process)	
compliance with schedule	
grade	
signature of the practice manager from the company	

Appendix 3

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)
Institute of Life Sciences and Biomedicine (School)

Department of Pharmacy and Pharmacology

I CONFIRM:
Head of OP
_____
_____FULL NAME.
"____" _____20__

INDIVIDUAL TASK

By _____
(type of practice)

student of _____ group _____
(FULL NAMEstudent)

Educational program _____

Base (place, organization) of practice_____
_____

Duration of practice from _____20___ to _____ 20___

Generalized formulation of the task	

Task schedule

Name of tasks (activities) that make up the task	Date of completion of the task (activity)
1.	
2.	
3.	

Head of practice _____ _____
signature full name, position

Appendix 4

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)
Institute of Life Sciences and Biomedicine (School)

Department of Pharmacy and Pharmacology

DIRECTION
for _____ practice

student of a specialty course
Last Name First Name Group _____
(Full Name)
sent to _____
name of the base organization
address _____

Order on referral to educational practice from No. 1
for _____ internship
in the field of study _____
for a period of
since _____ 20___ to _____ 20___ (continuous/discrete)

Head of Practice

M.P. _____ _____ _____
(position, academic title) (signature) (I.O.F)

Notes on completion and dates of practice

Business name	Arrival and departure notes	Signature, decryption of signature, seal
Name of the enterprise, organization in accordance with the agreement	Arrived __.__.20__	
	Dropped out on __.__.20__	

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)

INSTITUTE OF LIFE SCIENCES AND BIOMEDICINE (SCHOOL)

I APPROVED
Director of the Institute of Life Sciences and Biomedicine (School)

Yu.S. Khotimchenko
Full name

"06" December 2022

WORK PROGRAM OF TRAINING PRACTICE
Educational practice. Pharmacognosy practice
05/33/01 Pharmacy
Specialty program “Clinical and Experimental Pharmacy (in English)”

Vladivostok
2022

1. OBJECTIVES OF MASTERING EDUCATIONAL PRACTICE

The main goal of the practice is to consolidate and improve the theoretical knowledge and standards of professional ethics acquired by students in the lecture-practical course, to acquire skills and practical skills in the procurement of medicinal plant raw materials, taking into account the rational use and reproduction of natural resources, and to master the basic techniques of cultivating medicinal plants.

Such a significant number of hours in the curriculum are devoted to the practice of pharmacognosy due to the increasing share of medicinal plant raw materials (MPS), herbal remedies and parapharmaceuticals in the medicinal assortment. The medical industry and pharmacy chain use about 230 species of wild and cultivated plants. Of these, about 130 species are used for the needs of the pharmaceutical industry and over 100 species, after primary processing, enter the pharmacy chain as raw materials for the pharmacy range, from which infusions, decoctions, and collections are prepared.

2. OBJECTIVES OF EDUCATIONAL PRACTICE

- study of morphological characteristics of wild and cultivated medicinal plants;
- acquisition of practical skills and direct participation in the collection, primary processing, drying of medicinal plant materials, taking into account the rational use and reproduction of natural resources;
- familiarity with the rules for packaging raw materials and the conditions for their storage, with regulatory and technical documentation and reference literature on medicinal raw materials;
- mastering the basic techniques of cultivating medicinal plants, the basic techniques of collecting medicinal plant materials of various morphological groups (leaves, herbs, bark, fruits, seeds, underground organs);
- acquisition of practical skills in identifying medicinal plants in various plant communities, habitats of wild medicinal plants and their association with certain plant communities, basic techniques for determining reserves of wild medicinal plant raw materials using the example of herbaceous, woody and shrub plants using various methods for determining yields (registration sites , model specimens, projective coverage);
- acquisition of practical skills in primary processing, bringing to a standard state and drying of medicinal plant materials in natural and artificial conditions.

3. PLACE OF TRAINING PRACTICE IN THE STRUCTURE OF EP

“Training practice. Practice in pharmacognosy" is the main part of the professional educational program and is included in the mandatory part of block 2 "Practice".

To undergo practical training, students must have knowledge of Latin, botany, pharmacognosy, organic chemistry, general and inorganic, physical and colloidal chemistry, pharmaceutical chemistry, toxicological chemistry, pharmaceutical technology and pharmacology.

4. TYPES, METHODS, PLACE AND TIMES OF TRAINING PRACTICE

“Training practice. Practice in pharmacognosy" is conducted for 3rd year students studying in the field of preparation 05/33/01 Pharmacy.

B2.O.02(U) Educational practice. Practice in pharmacognosy. The total labor intensity of the practice is 6 credit units (216 hours), implemented in the 6th semester.

Type of practice – educational practice.

Type of practice: Practice in pharmacognosy.

Method of conducting practice: stationary, field.

Forms of educational practice – discrete

Practice in pharmacognosy includes two forms of implementation: field and office (laboratory).

The field form of practice includes familiarization with medicinal plants of the Primorsky Territory, collection of plants for herbarization, collection of medicinal plant raw materials.

The desk form of practice includes a morphological description of plants and determining whether the collected plant sample belongs to a specific taxon, mounting a herbarium, drying raw materials, filing for storage, filling out diaries, and drawing up a report. The discipline “Practice in Pharmacognosy” was developed for 3rd year students studying in the field of preparation 05/33/01 “Pharmacy”. The discipline belongs to the compulsory disciplines of the basic part

This number of hours in the curriculum is devoted to educational practice in pharmacognosy in connection with the increasing share of medicinal plant raw materials (MPS), herbal remedies and parapharmaceuticals in the medicinal assortment.

Practical classes are devoted to solving situational problems related to the practical development of basic techniques for procurement and primary processing of medicinal plant raw materials; identification of medicinal plants in various plant communities and habitats, basic techniques for cultivating medicinal plants; mastering the determination of resources using various methods for determining yields (registration sites, model specimens, projective coverage).

In connection with the increasing share of medicinal plant raw materials (MPS), herbal remedies and parapharmaceuticals in the medicinal assortment, it is necessary to study the morphological characteristics of medicinal plant raw materials and producing plants, and acquire skills in the rational procurement of plant raw materials and its primary processing. Knowledge and practical skills on procurement issues are provided for by the State educational standard for pharmacists.

During practice, students become familiar with medicinal plants in natural habitats and during cultivation in a nursery or specialized farm.

They consolidate and improve the theoretical knowledge acquired in the lecture-practical course, acquire skills and practical skills in the procurement of medicinal plant raw materials, taking into account the rational use and reproduction of natural resources.

During the practice, students master the basic techniques of cultivating medicinal

plants, the basic techniques of collecting medicinal plant materials of various morphological groups (leaves, herbs, bark, fruits, seeds, underground organs), identify medicinal plants in various plant communities, the habitats of wild medicinal plants and their location to certain plant communities, and also master the basic techniques for determining the resources of wild medicinal plants using the example of herbaceous, woody and shrub plants using various methods for determining yield (registration plots, model specimens, projective cover).

They acquire skills and practical experience in primary processing, bringing to a standard state and drying medicinal plant materials in natural and artificial conditions.

Practice in pharmacognosy is carried out on the basis of the Department of Pharmacy in the classroom of the department and the Far East Zoo PYaOS, excursions are conducted to various plant communities on the island. Russian.

5. STUDENT COMPETENCIES FORMED AS A RESULT OF TRAINING PRACTICE

General professional competencies of graduates and indicators of their achievement

Name of the category (group) of general professional competencies	Code and name of general professional competence (result of mastery)	Code and name of the competency achievement indicator
Professional methodology	OPK-1 Able to use basic biological, physicochemical, chemical, mathematical methods for design, research andexamination of medicines, manufacturing of medicines	OPK-1.1 Applies basic biological analytical methods for the development, research and examination of medicines and medicinal plant materials OPK-1.2 Applies basic physicochemical and chemical methods of analysis for the development, research and examination of medicines,medicinal plant raw materials and biological objects OPK-1.3 Applies basic methods of physical and chemical analysis in the manufacture of medicines OPK-1.4 Applies mathematical methods and carries out mathematical processing of data obtained during the development of medicines, as well as research and examination of medicines, medicinal plant materials and biological objects

Code and name of the competency achievement indicator	Name of the assessment indicator (results of training in the discipline)
OPK-1.1 Applies basic biological analytical methods for the development, research and examination of medicines and medicinal plant materials	Knows basic biological methods of analysis Able to apply basic biological methods of analysis for the development, research and examination of medicines and medicinal plant materials Proficient in analytical methods for the development, research and examination of medicines and medicinal plant materials
OPK-1.2 Applies basic physicochemical and chemical methods of analysis for the development, research and examination of medicines, medicinal plant materials and biological objects	Knows basic physicochemical and chemical methods of analysis Able to conduct development, research and examination of medicines, medicinal plant materials and biological objects Proficient in analytical methods for the development, research and examination of medicines, medicinal plant materials and biological objects

OPK-1.3 Applies basic methods of physical and chemical analysis in the manufacture of medicines	Knows the basic methods of physical and chemical analysis Able to analyze manufactured drugs Proficient in methods of physical and chemical analysis in the manufacture of medicines
OPK-1.4 Applies mathematical methods and carries out mathematical processing of data obtained during the development of medicines, as well as research and examination of medicines, medicinal plant materials and biological objects	Knows mathematical methods Able to carry out mathematical processing of data obtained during the development of medicines, as well as research and examination of medicines, medicinal plant materials and biological objects Knows methods of mathematical data processing

Professional competencies of graduates and indicators of their achievement:

Task type	Code and name of professional competence (result of mastery)	Code and name of the competency achievement indicator
expert-analytical	PC-8 Able to participate in monitoring the quality, effectiveness and safety of medicines and medicinal plant materials	PC-8.4 Conducts pharmacognostic analysis of medicinal plant raw materials and medicinal herbal preparations

Code and name of the competency achievement indicator	Name of the assessment indicator (result of training by practice)
PC-8.4 Conducts pharmacognostic analysis of medicinal plant raw materials and medicinal herbal preparations	Knows: - features of qualitative and quantitative control; - work on drug control in pharmaceutical conditions organizations; - methods of macroscopic and microscopic analyzes of whole and crushed medicinal raw materials and pharmaceutical products; - morphological and anatomical diagnostic signs of medicinal plant raw materials, approved for use in medical practice, possible impurities; - main groups of biologically active compounds of natural origin and their the most important physicochemical properties, biosynthesis pathways of the main groups of biologically active substances; - methods of isolation and purification, basic biologically active substances from medicinal plant raw materials; - basic methods of qualitative and quantitative determination of biologically active substances in medicinal plants raw materials and medical products, biological standardization of medicinal plant raw materials; - main ways and forms of use medicinal plant raw materials in pharmaceutical practice and industrial production; - basic information about the use of herbal and herbal medicines in medical practice animal origin. Can: - carry out quality and microchemical reactions to basic biologically active substances, contained in medicinal plants and raw materials (polysaccharides, fatty and essential oils, vitamins, cardiac glycosides, saponins, anthracene derivatives, phenylpropano-ides, coumarins, flavonoids, tannins

	substances, alkaloids, etc.); - analyze using quantitative determination methods, Provided by the relevant ND, for medicinal plant raw materials for the content of fatty and essential oils, cardiac glycosides, saponins, alkaloids, anthracene derivatives, tannins, phenylpropanoids, flavonoids, coumarins, vitamins, etc.; - determine the main numerical indicators (humidity, ash, extractives) by methods provided for in the ND; - take medication plant materials, select samples required for its analysis, according to the RD; - carry out statistical processing and registration of the results of pharmacognostic analysis; - make a conclusion about good quality of medicinal products in compliance with the requirements of ND; - able to participate in monitoring quality, effectiveness and safety of medicines and medicinal plant raw materials. Owns: - pharmacognostic methods analysis of medicinal plant raw materials and medicinal herbal preparations; - skills and techniques for conducting qualitative and microchemical tests reactions to the main biologically active substances contained in medicinal plants and raw materials (polysaccharides, essential oils, vitamins, cardiac glycosides, saponins, anthracene derivatives, coumarins, flavonoids, tannins, alkaloids, etc.)

6. STRUCTURE AND CONTENT OF PRACTICE, INCLUDING PRACTICAL TRAINING

The total labor intensity of the internship is 6 credits, 4 weeks, 216 hours.

Section (stage) of practice	Type of educational work in practice, including independent work of students and labor intensity (in hours)				Current control form
	Instructions on safety precautions, compliance with sanitary and hygienic rules and pharmaceutical procedures in the workplace.	Consultation	Collection, processing of material	Independent work	
1.Preparatory stage	2	6	10	10	Checking attendance. Instruction and test on safety precautions. Checking the completion of the stage.

2.Main stage	-	6	94	48	Checking attendance. Presentation of collected materials to the practice manager. Checking the completion of the stage.
3.Final stage	-	6	12	2	Checking attendance. Testing. Checking the completion of the stage.
4.Preparation of the report	-	6	12	2	Submitting and defending practice reports
Total	2	24	128	62	
Total	216 hours				

7. EDUCATIONAL AND METHODOLOGICAL SUPPORT OF INDEPENDENT WORK OF STUDENTS IN THE TRAINING PRACTICE

“Training practice. Practice in pharmacognosy" is carried out taking into account the student’s knowledge acquired as a result of studying the pharmacognosy course.

Educational practice is a vital part of the training of specialists in the pharmaceutical care system. Educational practice allows you to consolidate and improve the knowledge, skills and practical skills acquired in the study of pharmacognosy. Educational practice in pharmacognosy is a complex of classroom lessons, as well as independent extracurricular work of students, including individual assignments, testing, solving situational problems, and preparation for practical classes. Each student receives an individual task, including the procurement of raw materials, herbarization of plants producing these types of raw materials and related plant species that are unacceptable for procurement (impurities). During educational practice in pharmacognosy, safety instructions for the preparation of medicinal products, introductory lectures, activities for collecting, processing and systematizing material and performing other independent work are provided.

Students acquire practical skills in the techniques of collecting, drying and mounting herbarium and raw materials.

In addition to its great educational value, practice makes it possible to consolidate the acquired theoretical knowledge and connect it with the observed life of plants and plant communities in nature.

Educational practice should contribute not only to the assimilation of educational material, but also to develop observation, teach scientific thinking, expand horizons in the field of pharmacognosy, and help acquire skills in applying professional knowledge in practice. The practice can be carried out either at a specially equipped country base, or by traveling outside the city with subsequent processing of the material in the laboratories of the Department of Pharmacy and Pharmacology.

The diary is monitored weekly. Control over the development of practical skills is carried out based on the quality of individual assignments.

Each student must complete individual assignments in the following volume:

- prepare and document 10 herbariums of medicinal plants and their impurities;
- collect and dry 1.5 kg of medicinal plant materials;
- prepare a merchandising task;
- identify 10 “unknown” plants using the identification guide and hand them in after drying them in newspapers.

A grade is given on the “record sheet” for each of the practical skills.

Independent work of students to complete an individual task involves both theoretical and practical research, which can be carried out using Internet technologies. During educational practice in pharmacognosy, the student is required to keep a special diary in which he records the daily work done during an excursion or in the laboratory.

Rules for keeping a diary:

- the diary is a mandatory working reporting document on the internship;
- the student is obliged to keep a record of all types of practice in a diary every day;
- the diary must contain all tables for each task completed by the student;
- entries in the diary are certified by the teacher who conducted the lesson;
- when passing certification for field practice, the student submits his diary to the Department of Pharmacy and Pharmacology.

The diary describes all types of work performed during the day:

all studied phytocenoses, species diversity of the study area, research methods and their results, lists of species are compiled.

Processing of the results obtained is carried out in the classroom either immediately after the excursion or the next day (if the excursion was long).

8. CERTIFICATION FORMS (BASED ON PRACTICE)

Criteria for grading a student during a test

Exam/test assessment	**Requirements for developed competencies**
"Great"	An “excellent” grade is given to a student if he has deeply and firmly mastered the program material, presents it exhaustively, consistently, clearly and logically, is able to closely link theory with practice, can freely cope with tasks, questions and other types of application of knowledge, and does not have difficulty with answer when modifying tasks, uses material from monographic literature in the answer, correctly substantiates the decision made, has versatile skills and techniques for performing practical tasks;
"Fine"	A “good” grade is given to a student if he firmly knows the material, presents it competently and essentially, without allowing significant inaccuracies in answering the question, correctly applies theoretical principles when solving practical issues and problems, and has the necessary skills and techniques for their implementation;
"satisfactorily"	A “satisfactory” grade is given to a student if he has knowledge only of the basic material, but has not mastered its details, allows inaccuracies, insufficiently correct formulations, violations of the logical sequence in the presentation of program material, and experiences difficulties in performing practical work;
"unsatisfactory"	An “unsatisfactory” grade is given to a student who does not know a significant part of the program material, makes significant mistakes,

	and performs practical work with great difficulty and uncertainty.

9. EDUCATIONAL-METHODOLOGICAL AND INFORMATION SUPPORT OF EDUCATIONAL PRACTICE

Main literature

1. Pharmacognosy: medicinal plants and similar species: textbook / T. G. Dergousova, O. D. Mogilnaya.- Rostov-on-Don: Phoenix, 2017.- 142 p. https://lib.dvfu.ru/lib/item?id=chamo:846550&theme=FEFU
2. Pharmacognosy. Workbook: textbook / A. A. Konovalov. - St. Petersburg: Lan, 2019. - 205 p. https://lib.dvfu.ru/lib/item?id=chamo:881782&theme=FEFU

additional literature

1. Pronchenko, G. E. Plants - sources of medicines and dietary supplements / G. E. Pronchenko, V. V. Vandyshev - Moscow: GEOTAR-Media, 2016. - 224 p. https://lib.dvfu.ru/lib/item?id=RosMedLib:RosMedLib-ISBN9785970439388&theme=FEFU
2. Samylina, I. A. Pharmacognosy. Atlas. Volume 1 / Samylina I. A., Anosova O. G. - Moscow: GEOTAR-Media, 2010. - 192 p. - ISBN 978-5-9704-1576-4. - Text: electronic // URL:https://lib.dvfu.ru/lib/item?id=RosMedLib:RosMedLib-ISBN9785970415764&theme=FEFU
3. Samylina, I. A. Pharmacognosy. Atlas. Volume 2 / Samylina I. A., Anosova O. G. - Moscow: GEOTAR-Media, 2010. - 384 p. - ISBN 978-5-9704-1578-8. - Text: electronic // URL: https://lib.dvfu.ru/lib/item?id=RosMedLib:RosMedLib-ISBN9785970415788&theme=FEFU
4. Samylina, I. A. Pharmacognosy. Atlas. Volume 3 / Samylina I. A., Ermakova V. A., Bobkova I. V., Anosova O. G. - Moscow: GEOTAR-Media, 2010. - 488 p. - ISBN 978-5-9704-1580-1. - Text: electronic // URL: https://lib.dvfu.ru/lib/item?id=RosMedLib:RosMedLib-ISBN9785970415801&theme=FEFU
5. Samylina, I. A. Pharmacognosy. Test tasks and situational tasks: textbook / Bobkova N.V. et al.; Ed. I. A. Samylina. - Moscow: GEOTAR-Media, 2015. - 288 p. https://lib.dvfu.ru/lib/item?id=RosMedLib:RosMedLib-ISBN9785970433577&theme=FEFU
6. Pharmacognosy: textbook for universities / I. A. Samylina, G. P. Yakovlev.- Moscow: GEOTAR-Media, 2014.-969 pp. https://lib.dvfu.ru/lib/item?id=chamo:816759&theme=FEFU
7. Pharmacognosy: textbook for universities / I. A. Samylina, G. P. Yakovlev.- Moscow: GEOTAR-Media, 2016.-969 pp. https://lib.dvfu.ru/lib/item?id=chamo:880722&theme=FEFU
8. Pharmacognosy. Test tasks and situational tasks: a textbook for universities / [N. V. Bobkova, I. A. Samylina, E. V. Sergunova, etc.] ; edited by I. A. Samylina.- Moscow: GEOTAR-Media, 2013.- 280 pp. https://lib.dvfu.ru/lib/item?id=chamo:816850&theme=FEFU
9. Pharmacognosy. Educational practice: textbook for universities / [V. A. Ermakova, E. B. Zorin, N. N. Sapronova and others] ; edited by I. A. Samylina, A. A. Sorokina.- Moscow: Medical Information Agency, 2011.- 429 pp. https://lib.dvfu.ru/lib/item?id=chamo:796967&theme=FEFU

List of resources of the information and telecommunications network “Internet”.

1. Methodological materials (working program of the course, lecture materials, methodological support, materials for preparing for testing).
2. Scientific electronic library http://elibrary.ru
3. Electronic library of the university “Student Consultant” www.studmedlib.ru
4. Pharmacology Biochemistry and Behavior http://www.sciencedirect.
5. Directory of herbal remedies and herbal homeopathic remedies http://www.fitopreparat.ru
6. Pharmacological reference book http://pharmabook.net
7. Library of medical literature http://www.it-med.ru/library/a.htm
8. Medical information portal “GREEN-MED RUSSIA” http://green-med.ru/
2. Medical literature http://www.medbook.net.ru/
3. Botanical server of Moscow State University http://herba.msu.ru/russian/index.html 11. Single window of access to educational resources: http://window.edu.ru/
12. International Plant Names Index (IPNI) www.ipni.org
13. Reference and search systems “Garant” and “Consultant-plus”

Periodicals (magazines):

- "Plant resources";
- "Pharmacy";
- "Chemical-Pharmaceutical Journal";

"Pharmaceutical Bulletin"

10. MATERIAL AND TECHNICAL SUPPORT OF TRAINING PRACTICE

Equipment and supplies needed by students for internship

1. Herbarium press and herbarium folder.
2. “Shirts” and pads made of newspaper material (filter paper or newspapers).
3. Botanical diggers or shovels for digging up plants.
4. Excursion magnifying glasses 10x.
5. Notebooks for field diaries.
6. Field label paper.
7. Simple pencils and pens.
8. Packages for collecting medicinal plant materials.
9. Garden folding knives for cutting branches from trees and bushes.
10. Tweezers.
11. Dissecting needles.
12. Paper for mounting the herbarium, cut to a standard format, and for attaching plants, cut into thin strips.
13. Threads (preferably white or dark, rather thick).
14. Sewing needles (thick).
15. PVA glue.
16. Diggers, scissors.
17. Paper for labels (labels can be printed).

18. Rulers

11. VALUATION FUNDS

Types of control and certification, forms of assessment tools

In accordance with the current curriculum, upon completion of the internship, students are certified and given a grade.

1. Monitoring of the diary is carried out weekly.

2. Control over the development of practical skills is carried out based on the quality of individual assignments.

Each student must complete individual assignments in the following volume:

- prepare and register 10 herbaria of the Republic of Latvia and their admixtures;
- collect and dry samples of medicinal products;
- prepare a commodity research problem and an analytical passport for it;
- identify 10 “unknown” plants using the identification guide and hand them in after drying them in newspapers.

A grade is given on the “record sheet” for each of the practical skills.

Final control

Based on the results of practice, a final grade is entered into the grade book, which consists of the following grades:

- assessment of testing and solving situational problems;
- assessment for keeping a diary;
-assessment for the quality of individual assignments;
- protection of the completed report.

Contents and structure of the test

1. Testing
2. Interview
3. Definition of "living" plants
4. Situational task

Preparation of a practice report and diary entries (for each lesson)

The internship report is compiled in accordance with the main stage of the internship program and reflects the implementation of the internship program. The report is drawn up on A4 paper (210x297 mm). The text of the report is presented on one side of the sheet, in Times New Roman font, size 14, with 1.15 spacing. Each page of the work is designed with the following margins: left - 30 mm; right - 10 mm; top - 20 mm; lower - 20 mm. The paragraph indent in the text is 1.5 cm. All pages of the work must have continuous numbering, including appendices. Numbering is done in Arabic numerals, with the page serial number placed in the lower right corner, starting with the table of contents after the title page. All structural elements of the practice report are stitched together.

The title page is included in the general page numbering, but the page number is not indicated on the title page." At the end of the report there should be a photo of the student. Attached to the internship report: diary

The Diary states:

Specific Goals

Upon completion of the internship, the student must

Know

- nomenclature of medicinal plants; practice base;
- basics of the procurement process (rules of collection, drying, primary processing);
- basics of identifying wild plant resources;
- rules for storage, packaging, labeling of medicinal products;
- basic techniques for cultivating medicinal plants;
- safety rules when working with medicines;
-

Be able to

- identify medicinal plants in various communities and habitats by external characteristics, using a determinant;
- distinguish medicinal plants from possible impurities;
- carry out the procurement of pharmaceutical products;
- carry out primary processing and drying of medicinal products;
- care for cultivated plants in the collection area;

Have skills

- identification of medicinal plants using a determinant;
- herbarization of plants.

During the internship, the student must:

- conduct a morphological description of at least 30 medicinal

plants growing or cultivated in the Primorsky Territory and admixtures thereto;

- identify at least 10 “unknown” plants using a determinant;
- carry out preparation, primary processing, drying of at least 3 types

LRS;

- prepare a commodity research task and an analysis protocol for the first

analytical sample;

- mount and arrange at least 10 herbariums, place them in a folder.

Based on the results of practice, a final grade is entered into the grade book, which consists of the following grades:

- grades received in the test;
- assessments for reporting;
- assessments for the quality of individual assignments (assessment for practical skills).

Contents and structure of the test

1. Testing.

2. Interview.

3. Situational task.

4. Definition of “living” medicinal plants.

Interview Questions

1. Give a brief description of the families: Rosaceae, Asteraceae, Polygonaceae, Lamiaceae, Araliaceae, Fabaceae, Brassicaceae, Ranunculaceae.

2. Give the concept of phytocenosis and plant association.

3. Give the concept of biological and operational reserves.

4. Name the methods for determining reserves and yields. Give a brief description of the method for determining yield that you used during practice.

5. Describe the nomenclature of pharmaceutical products in the southern regions of Primorsky Krai. Give examples of wild and cultivated plants.

6. Describe the wild medicinal plants of the practice area.

7. Describe the medicinal plants grown in the collection area.

8. Describe the basic techniques for cultivating plants in the collection area.

9. Name the poisonous plants of the geographical area of practice.

10. Describe the general rules for collecting all morphological groups of wild plants.

11. Give the structure of instructions for the preparation of pharmaceutical products.

13. How is raw material dried? Give examples.

14. Justify the rules for collecting, drying, and primary processing of the MPs collected by you.

15. How is the LRS brought to a standard state?

16. How is packaging and labeling of pharmaceutical products carried out?

17. How is drug storage carried out? Give examples.

18. What measures do I ensure the rational use and reproduction of medicinal plants?

19. Which plants of the Far East are subject to protection? Name the types of medicinal plants included in the Red Book.

20. Give the basic techniques for cultivating LR.

21. Give examples of the main pests of medicinal plants during their cultivation and measures to combat them.

Situational tasks:

1. List of objects for situational tasks for the procurement of medicines

Provide instructions on the preparation of raw materials of medicinal plants:

- wild rosemary
- marsh calamus
- green chamomile
- shepherd's purse
- stinging nettle

- great celandine
- Daurian rosehip
- large plantain
- Eleutherococcus senticosus
- tripartite sequence
- three-leaf watch
- burnet (officinalis)
- dandelion officinalis
- Daurian hawthorn
- marsh dried grass
- common lingonberry
- heart-shaped linden
- gray alder

1. Theoretical questions for the test in educational practice:

1. Systematic characters of the main botanical families:Rosaceae
2. "Introduction and cultivation of medicinal plants" - calendula officinalis (techniques of cultivation).
3. Provide instructions on the preparation of raw materials of medicinal plants:

- wild rosemary. Give an assessment of the raw material base, plant morphology, habitat, whether there are similar plants - unacceptable impurities, their names and differences. Note the features of the workpiece, OM

Justify the mode of drying and storage of raw materials by its chemical composition.

What external signs can be used to reject an external inspection?

Name the pharmacological action, medications and features of the use of this raw material in medicine

2. Theoretical questions for the test on educational practice:

1. Systematic characters of the main botanical families:Asteraceae
2. "Introduction and cultivation of medicinal plants" - chamomile (cultivation techniques).
3. Provide instructions on the preparation of raw materials of medicinal plants:

- marsh calamus. Give an assessment of the raw material base, plant morphology, habitat, whether there are similar plants - unacceptable impurities, their names and differences. Note the features of the workpiece, OM

Justify the mode of drying and storage of raw materials by its chemical composition.

What external signs can be used to reject an external inspection?

Name the pharmacological action, medications and features of the use of this raw material in medicine

3. Theoretical questions for the test on educational practice:

1. Systematic characters of the main botanical families:Polygonaceae

2. "Introduction and cultivation of medicinal plants" - coltsfoot (techniques of cultivation).

3. Provide instructions on the preparation of raw materials of medicinal plants:

- green chamomile. Give an assessment of the raw material base, plant morphology, habitat, whether there are similar plants - unacceptable impurities, their names and differences. Note the features of the workpiece, OM

Justify the mode of drying and storage of raw materials by its chemical composition.

What external signs can be used to reject an external inspection?

Name the pharmacological action, medications and features of the use of this raw material in medicine

4. Theoretical questions for the test on educational practice:

1. Systematic characters of the main botanical families:Lamiaceae

2. "Introduction and cultivation of medicinal plants" - peppermint (techniques of cultivation).

3. Provide instructions on the preparation of raw materials of medicinal plants:

- shepherd's purse. Give an assessment of the raw material base, plant morphology, habitat, whether there are similar plants - unacceptable impurities, their names and differences. Note the features of the workpiece, OM

Justify the mode of drying and storage of raw materials by its chemical composition.

What external signs can be used to reject an external inspection?

Name the pharmacological action, medications and features of the use of this raw material in medicine

5. Theoretical questions for the test on educational practice:

1. Systematic characters of the main botanical families:Araliaceae

2. Acceptance and selection about LRS/LRP.

Receive raw materials in accordance with requirementsGPM.1.1.0005.15 GF XIV “Sampling of medicinal plant materials and medicinal herbal preparations”

The pharmacy warehouse in Ryazan received it from OJSC Krasnogorskleksredstva. according to the railway bill of lading N2 25/45 medicinal plant raw materials

- "Peppermint leaves"
- Batch No. 011217,
- in quantities of 700 kg,
- packed in flax-jute-kenaf bags of 20 kg.

The raw materials have an accompanying document “Analytical passport” containing the following data:

“Analytical passport” N2 345 dated December 9, 2017

medicinal raw materials

- “Peppermint leaves” name of the manufacturer

- OJSC "Krasnogorskleksredstva", 143414, Moscow region, Krasnogorsky district, village. Opalikha, st. Lenina, 25;

supplier - JSC Enex;

- Batch No. 011217,

- in quantities of 700 kg

- analysis of raw materials was carried out according to FS.2.5.0029.15 State Fund XIV

Conclusion: the raw materials “Peppermint leaves” meet the requirements of the ND.

Head of Quality Control Department (laboratory signature and seal)

3. Provide instructions on the preparation of raw materials of medicinal plants:

- pepper mountaineer. Give an assessment of the raw material base, plant morphology, habitat, whether there are similar plants - unacceptable impurities, their names and differences. Note the features of the workpiece, OM

Justify the mode of drying and storage of raw materials by its chemical composition.

What external signs can be used to reject an external inspection?

Name the pharmacological action, medications and features of the use of this raw material in medicine

6. Theoretical questions for the test on educational practice:

1. Systematic characters of the main botanical families:Fabaceae
2. Acceptance and selection about LRS/LRP.

Receive raw materials in accordance with requirementsGPM.1.1.0005.15 GF XIV “Sampling of medicinal plant materials and medicinal herbal preparations”

The pharmaceutical warehouse in Moscow received it from OJSC Krasnogorskleksredstva under railway consignment note No. 345

-crushed medicinal plant material “Oregano herb”,

- batch No. 011217,

- in the amount of 500 kg,

- packed in flax-jute-kenaf bags of 25 kg.

The batch has an accompanying document

- “Analytical passport”, which contains the following data:

“Analytical passport No. 125” dated December 5, 2018 medicinal raw materials

- “Oregano herb”;

- name of the manufacturer - OJSC Krasnogorskleksred-stva", 143414, Moscow region, Krasnogorsky district, pos. Opalikha, st. Lenina, 25;

- supplier - Snaga Pharm CJSC; - batch 011217;

- analysis of raw materials was carried out according to FS.2.5.0012.15 State Fund XIV

Conclusion: Oregano grass raw material meets the requirements of the ND.

Head pharmacist _____ (signature)

Pharmacist-analyst _____ (signature) (laboratory seal)

3. Provide instructions on the preparation of raw materials of medicinal plants:

- knotweed. Give an assessment of the raw material base, plant morphology, habitat, whether there are similar plants - unacceptable impurities, their names and differences. Note the features of the workpiece, OM

Justify the mode of drying and storage of raw materials by its chemical composition.

What external signs can be used to reject an external inspection?

Name the pharmacological action, medications and features of the use of this raw material in medicine

7.Theoretical questions for the test on educational practice:

1. Systematic characters of the main botanical families:Brassicaceae
2. "Introduction and cultivation of medicinal plants" - coriander (cultivation techniques).
3. Provide instructions on the preparation of raw materials of medicinal plants:

- Daurian rosehip. Give an assessment of the raw material base, plant morphology, habitat, whether there are similar plants - unacceptable impurities, their names and differences. Note the features of the workpiece, OM

Justify the mode of drying and storage of raw materials by its chemical composition.

What external signs can be used to reject it? upon external examination.

Name the pharmacological action, medications and features of the use of this raw material in medicine

8. Theoretical questions for the test on educational practice:

1. Acceptance and selection about LRS/LRP.

Receive raw materials in accordance with requirementsGPM.1.1.0005.15 GF XIV “Sampling of medicinal plant materials and medicinal herbal preparations”

A batch of Hawthorn fruit products in the amount of 750 kg, packaged in 30 kg fabric bags, arrived at the pharmacy warehouse in Pyatigorsk from the State Enterprise "Pyatigorsk Pharmaceutical Factory".

Raw materials have an invoice and a quality certificate as accompanying documents;

The certificate contains the following information:

Quality Certificate No. 67 dated 12/02/17

- name of the raw material - “Hawthorn fruit”;
- name of the sender's enterprise - State Enterprise "Pyatigorsk Pharmaceutical Factory", 357528, Pyatigorsk, st. Ermolova, 35 - supplier - Evil Lerex;
- Batch No. 011217;
- quantity 750 kg
- analysis of raw materials according to FS.2.5.0061.18 State Fund XIV

Conclusion: the raw materials of “Hawthorn fruit” meet the requirements of the

pharmacopoeial monograph.

Head of Quality Control Department _____ (laboratory signature and seal)

2. "Introduction and cultivation of medicinal plants" - caraway seeds (techniques of cultivation).

3. Provide instructions on the preparation of raw materials of medicinal plants:

- big plantain. Give an assessment of the raw material base, plant morphology, habitat, whether there are similar plants - unacceptable impurities, their names and differences. Note the features of the workpiece, OM

Justify the mode of drying and storage of raw materials by its chemical composition.

What external signs can be used to reject it? upon external examination.

Name the pharmacological action, medications and features of the use of this raw material in medicine

9. Theoretical questions for the test on educational practice:

1. Acceptance and selection about LRS/LRP.

Receive raw materials in accordance with requirementsGPM.1.1.0005.15 GF XIV "Sampling of medicinal plant materials and medicinal herbal preparations"

State Unitary Enterprise "Tulskaya FF" received plant raw materials "Podorozhnik" from JSC "Lekrasprom"bigleaves"

- Vquantity 1000 kg,

- packed in flax-jute-kenaf bags of 20 kg.

The accompanying document is represented by the "Analytical passport" containing the following data:

- "Analytical passport No. 543 dated 8.l2.2017
- medicinal raw materials "Plantain leaves"

- Vquantity 1000 kg,

- name of the manufacturer - ZAO Lekrasprom, 123181, G.Moscow, Nemansky pr., 1, bldg. 1;

name of the supplier company - Velikolukskoye Regional Industrial Association; - batch No. 011217;

- analysis of raw materials was carried out according toFS.2.5.0032.15GF XIV

Conclusion: the raw materials of "Plantain leaves" meet the requirements of regulatory documentation.

Performers: analytical chemist _____ (signature)

Chemist-technologist _____ (signature)

Head of Quality Control Department (seal and signature of the head of the quality control department)

2. "Introduction and cultivation of medicinal plants" - coriander (cultivation techniques).

3. Provide instructions on the preparation of raw materials of medicinal plants:

- Eleutherococcus senticosus. Give an assessment of the raw material base, plant morphology, habitat, whether there are similar plants - unacceptable impurities, their names and differences. Note the features of the workpiece, OM

Justify the mode of drying and storage of raw materials by its chemical composition.

What external signs can be used to reject it? upon external examination.

Name the pharmacological action, medications and features of the use of this raw material in medicine

10. Theoretical questions for the test on educational practice:

1. Acceptance and selection about LRS/LRP.

Receive raw materials in accordance with requirementsGPM.1.1.0005.15 GF XIV "Sampling of medicinal plant materials and medicinal herbal preparations"

A batch of Rosehip Fruit products in the amount of 300 kg, packaged in flax-jute-kenaf bags of 25 kg each, arrived at the pharmacy warehouse in Pyatigorsk from the Pyatigorsk Pharmaceutical Academy with pilot production.

Raw materials as accompanying documents have

invoice and quality certificate;

- the certificate contains the following data:

Quality Certificate No. 60 dated 12/12/18

- name of the sender's enterprise - "Pyatigorsk Pharmaceutical Academy with Pilot Production", 357532,

Pyatigorsk, Kalinina Avenue, 11;

- supplier - JSC "Lerex";

- batch No. 111218;

- analysis of raw materials was carried out in accordance with FS.2.5.0106.18 State Fund XIV, Conclusion: raw materials "Rose hips fruits" meet the requirements of ND.

Head of Quality Control Department (laboratory signature and seal)

2. "Introduction and cultivation of medicinal plants" - St. John's wort (techniques of cultivation).

3. Provide instructions on the preparation of raw materials of medicinal plants:

- a three-part series. Give an assessment of the raw material base, plant morphology, habitat, whether there are similar plants - unacceptable impurities, their names and differences. Note the features of the workpiece, OM

Justify the mode of drying and storage of raw materials by its chemical composition.

What external signs can be used to reject it? upon external examination.

Name the pharmacological action, medications and features of the use of this raw material in medicine

11. Theoretical questions for the test on educational practice:

1. Acceptance and selection about LRS/LRP.

Receive raw materials in accordance with requirementsGPM.1.1.0005.15 GF XIV “Sampling of medicinal plant materials and medicinal herbal preparations”

Pharmacy warehouse No. 2 in Novosibirsk received plant raw materials “Linden Flowers”,

- batch No. 141217,
- in the amount of 750 kg,

packed in 50 kg fabric bales

From the accompanying documents there are

- invoice,
- invoice and quality certificate with the following data:

Quality Certificate No. 145 dated 12/21/17

- name of the raw material - “Linden flowers”,
- name of the manufacturer - JSC Novosibirsk
- pharmaceutical factory", Novosibirsk, st.d. Kovalchuka, 77
- supplier - Nizhneustinskoe district administration;
- batch 141217;
- quantity 750 kg,
- analysis was carried out according to FS.2.5.0024.15GF XIV

Conclusion: the raw material “Linden flowers” meets the requirements of the pharmacopoeial monograph.

Head of Quality Control Department _____ (laboratory signature and seal)

2. "Introduction and cultivation of medicinal plants" - calendula officinalis (techniques of cultivation).

3. Provide instructions on the preparation of raw materials of medicinal plants:

- three-leaf watch. Give an assessment of the raw material base, plant morphology, habitat, whether there are similar plants - unacceptable impurities, their names and differences. Note the features of the workpiece, OM

Justify the mode of drying and storage of raw materials by its chemical composition.

What external signs can be used to reject it? upon external examination.

Name the pharmacological action, medications and features of the use of this raw material in medicine

12. Theoretical questions for the test on educational practice:

1. Systematic characters of the main botanical families:Lamiaceae
2. "Introduction and cultivation of medicinal plants" - chamomile (cultivation techniques).

3. Provide instructions on the preparation of raw materials of medicinal plants:

- medicinal burnet. Give an assessment of the raw material base, plant morphology, habitat, whether there are similar plants - unacceptable impurities, their names and differences. Note the features of the workpiece, OM

Justify the mode of drying and storage of raw materials by its chemical composition.

What external signs can be used to reject it? upon external examination.

Name the pharmacological action, medications and features of the use of this raw material in medicine

13. Theoretical questions for the test on educational practice:

1. Acceptance and selection about LRS/LRP.

Receive raw materials in accordance with requirementsGPM.1.1.0005.15 GF XIV "Sampling of medicinal plant materials and medicinal herbal preparations"

State Unitary Enterprise "Tulskaya FF" received plant raw materials "Senna leaves" from JSC "Lekrasprom"

- Vquantity 1000 kg,
- packed in flax-jute-kenaf bags of 15 kg.

The accompanying document is represented by the "Analytical passport" containing the following data:

- "Analytical passport No. 543 dated 8.l2.2018
- medicinal raw materials "Senna leaves"
- Vquantity 1000 kg,
- name of the manufacturer - ZAO Lekrasprom, 123181, G.Moscow, Nemansky pr., 1, bldg. 1;

name of the supplier company - Velikolukskoye Regional Industrial Association; batch No. 011217;

analysis of raw materials was carried out according to FS.2.5.0038.15 State Fund XIV

Conclusion: the raw materials "Senna leaves" meet the requirements of regulatory documentation.

Performers: analytical chemist _____ (signature)

Chemist-technologist _____ (signature)

Head of Quality Control Department (seal and signature of the head of the quality control department)

2. "Introduction and cultivation of medicinal plants" - coltsfoot (techniques of cultivation).

3. Provide instructions on the preparation of raw materials of medicinal plants:

- dandelion officinalis. Give an assessment of the raw material base, plant morphology, habitat, whether there are similar plants - unacceptable impurities, their names and differences. Note the features of the workpiece, OM

Justify the mode of drying and storage of raw materials by its chemical composition.

What external signs can be used to reject it? upon external examination.

Name the pharmacological action, medications and features of the use of this raw material in medicine

14. Theoretical questions for the test on educational practice:

1. Systematic characters of the main botanical families:Fabaceae
2. "Introduction and cultivation of medicinal plants" - lemon balm (techniques of cultivation).

3. Provide instructions on the preparation of raw materials of medicinal plants:

- Daurian hawthorn. Give an assessment of the raw material base, plant morphology, habitat, whether there are similar plants - unacceptable impurities, their names and differences. Note the features of the workpiece, OM

Justify the mode of drying and storage of raw materials by its chemical composition.

What external signs can be used to reject it? upon external examination.

Name the pharmacological action, medications and features of the use of this raw material in medicine

15. Theoretical questions for the test on educational practice:

1. Systematic characters of the main botanical families:Brassicaceae
2. "Introduction and cultivation of medicinal plants" - peppermint (techniques of cultivation).

3. Provide instructions on the preparation of raw materials of medicinal plants:

- swampy dryweed. Give an assessment of the raw material base, plant morphology, habitat, whether there are similar plants - unacceptable impurities, their names and differences. Note the features of the workpiece, OM

Justify the mode of drying and storage of raw materials by its chemical composition.

What external signs can be used to reject it? upon external examination.

Name the pharmacological action, medications and features of the use of this raw material in medicine

16. Theoretical questions for the test on educational practice:

1. Acceptance and selection about LRS/LRP.

Receive raw materials in accordance with requirementsGPM.1.1.0005.15 GF XIV “Sampling of medicinal plant materials and medicinal herbal preparations”

JSC “Biotechnological Innovations”, Tver, received raw materials from the “State Enterprise Pharmaceutical Factory in Kopeisk”

- “Bearberry leaves”, 500 kg,

packed in fabric bags of 20 kg in each bag.

The raw materials have an accompanying document:

- quality certificate containing the following data:

Quality Certificate No. 33 dated December 15, 2018

- name of the sending company –

"State enterprise pharmaceutical factory Kopeysk", 456600, Chelyabinsk region, Kopeysk, st. Lenina, 41;

- name of the supplier - Zarechenskoe district administration;

- batch 031218;

- quantity 500 kg;

- analysis of raw materials was carried out according to the State Fund XIV, FS.2.5.0099.18

Conclusion: raw materials “Bearberry leaves” meet the requirements of ND.

Head of Quality Control Department (laboratory signature and seal)

2. "Introduction and cultivation of medicinal plants" - anise (techniques of cultivation).

3. Provide instructions on the preparation of raw materials of medicinal plants:

- common lingonberry. Give an assessment of the raw material base, plant morphology, habitat, whether there are similar plants - unacceptable impurities, their names and differences. Note the features of the workpiece, OM

Justify the mode of drying and storage of raw materials by its chemical composition.

What external signs can be used to reject it? upon external examination.

Name the pharmacological action, medications and features of the use of this raw material in medicine

17. Theoretical questions for the test on educational practice:

1. Acceptance and selection about LRS/LRP.

Receive raw materials in accordance with requirementsGPM.1.1.0005.15 GF XIV “Sampling of medicinal plant materials and medicinal herbal preparations”

A batch of Rosehip Fruit products in the amount of 300 kg, packaged in flax-jute-kenaf bags of 25 kg each, arrived at the pharmacy warehouse in Pyatigorsk from the Pyatigorsk Pharmaceutical Academy with pilot production.

Raw materials as accompanying documents have

invoice and quality certificate;

- the certificate contains the following data:

Quality Certificate No. 60 dated 12/12/18

- name of the sender’s enterprise - “Pyatigorsk Pharmaceutical Academy with Pilot Production”, 357532,

Pyatigorsk, Kalinina Avenue, 11;

- supplier - JSC "Lerex";

- batch No. 111218;

- analysis of raw materials was carried out in accordance with FS.2.5.0106.18 State Fund XIV, Conclusion: raw materials “Rose hips fruits” meet the requirements of ND.

Head of Quality Control Department (laboratory signature and seal)

2. "Introduction and cultivation of medicinal plants" - coriander (cultivation techniques).

3. Provide instructions on the preparation of raw materials of medicinal plants:

- heart-shaped linden. Give an assessment of the raw material base, plant morphology, habitat, whether there are similar plants - unacceptable impurities, their names and differences. Note the features of the workpiece, OM

Justify the mode of drying and storage of raw materials by its chemical composition.

What external signs can be used to reject it? upon external examination.

Name the pharmacological action, medications and features of the use of this raw material in medicine

18. Theoretical questions for the test on educational practice:

1. Systematic characters of the main botanical families:Asteraceae
2. "Introduction and cultivation of medicinal plants" - caraway seeds (techniques of cultivation).
3. Provide instructions on the preparation of raw materials of medicinal plants:

- gray alder. Give an assessment of the raw material base, plant morphology, habitat, whether there are similar plants - unacceptable impurities, their names and differences. Note the features of the workpiece, OM

Justify the mode of drying and storage of raw materials by its chemical composition.

What external signs can be used to reject it? upon external examination.

Name the pharmacological action, medications and features of the use of this raw material in medicine

2. Mastering the basic techniques of agricultural technology for cultivating medicinal plants (sowing, fertilizing, hilling, weeding, harvesting).

Study the general techniques of agricultural technology for cultivating LR according to the methodological recommendations "Introduction and cultivation of medicinal plants"

according to the given list:

- calendula officinalis
- pharmaceutical camomile
- coltsfoot
- lemon balm
- peppermint
- common anise
- coriander sativum
- caraway seeds
- common hop
- St. John's wort

Example of Test tasks for self-preparation for practice

Choose one most correct answer

1.Medicinal plant belongs to the class of monocotyledons

1 large plantain
2 chamomile green
3 stinging nettle
4 Keisuke's lily of the valley
5 Eleutherococcus senticosus.
2. A relict plant grows in the Far East
1 green chamomile
2 Daurian rosehip
3 tempting high
4 Eleutherococcus senticosus
5 Daurian hawthorn.
3. Plants of the monocot class are characterized by the shape of their leaves
1 trifoliate
2 fingered
3 heart-shaped
4 elliptical
5 round.
4. The “Umbrella” inflorescence is characteristic of a plant of the family
1 Araceae
2 Valerianaceae
3 Araliaceae
4 Fabaceae
5 Polygonaceae.
5. A regular flower with a 5-membered perianth is characteristic of a plant of the family
1 Araliaceae
2 Apiaceae
3 Valerianaceae
4 Rosaceae
5 Fabaceae.
6. Plants of the Fabaceae family are characterized by fruit
1 leaflet
2 bellweed
3 pod
4 bob
5 berry.
7. Official plants include a species of nettle
1 deaf
2 dioecious
3 angustifolia
4 blue-green
5 burning.

8. Medicinal plant raw materials "Grass", as a rule, are harvested during a certain growing season

1st beginning of growing season

2 budding

3 bloom

4 fruiting

5 end of growing season.

Match

9. Medicinal plant Family

Calendula officinalis

A Elaeagnaceae

B Lamiaceae

In Ericaceae

G Apiaceae

D Asteraceae

10.Medicinal plant Family Ledum palustre

A Elaeagnaceae

B Lamiaceae

In Ericaceae

G Apiaceae

D Asteraceae

11. A medicinal plant is cultivated and grows wild in the Far East

1 calendula officinalis

2 knotweed

3 kidney tea

4 Viburnum Sargent

5 stinging nettle.

Option 2

Choose one most correct answer

1. In the Far East, only a medicinal plant grows in cultivated form.

1 Viburnum Sargent

2 Amur rowan

3 sea buckthorn

4 northern tansy

5 Amur linden.

Match

2. Medicinal plant Medicinal plant

raw materials

Herba

A Urtica dioica

B Inula helenium

In Tanacetum vulgare

G Polygonum aviculare

D Chamomilla recutita

Match

3. Medicinal plant Medicinal plant raw materials

Folia

A Urtica dioica

B Inula helenium

In Tanacetum vulgare

G Polygonum aviculare

D Chamomilla recutita

Match

3. Morphological character Family Flower two-lipped

Apiaceae

B Rosaceae

In Liliaceae

G Asteraceae

D Lamiaceae

5. Morphological character Family

Flowers are complex in social this basket

AApiaceae

B Rosaceae

In Liliaceae

G Asteraceae

D Lamiaceae

6. Medicinal plant raw materials "Leaves", as a rule, are harvested during a certain growing season

1st beginning of growing season

2 budding

3 bloom

4 fruiting

5 end of growing season.

7. Official plants include the horsetail species

1 meadow

2 field

3 forest

4 swampy

5 swamp.

8. Knobby stems with bells are a characteristic feature of plants of the family

1 Ranunculaceae

2 Papaveraceae

3 Polygonaceae

4 Urticaceae

5 Apiaceae.

9. A medicinal plant is endemic to the Far East

1 Victor's Ungernia

2 St. John's wort

3 Schisandra chinensis

4 poppy yellow

5 officinalis burnet.

10. The leaves of the Convallariaceae family are characterized by venation

1 parallel

2 arcuate

3 feathery

4 mesh

5 dichotomous.

11. The name of the family, the characteristic of which is the combination of a tetrahedral stem, opposite leaf arrangement and irregularly shaped flowers with "sponges" - _____.

Option 3

Match

1. Medicinal plant Family

Capsella bursa-pastoris

A Rosaceae

B Asteraceae

In Polygonaceae

G Brassicaceae

D Lamiaceae

2. Medicinal plant Family

A Rosaceae

Tanacetum boreale

B Asteraceae

In Polygonaceae

G Brassicaceae

D Lamiaceae

3. Medicinal plant Medicinal plant raw materials

Flores

A Bidens tripartita

B Crataegus dahurica

In Taraxacum officinalis

G Hypericum perforatum

D Acorus calamus

4. Medicinal plant Medicinal plant raw materials

A Bidens tripartita Radices

B Crataegus dahurica
In Taraxacum officinalis
G Hypericum perforatum
D Acorus calamus
Choose one most correct answer
5. A medicinal plant grows wild in the Far East
1 angustifolia nettle
2 coltsfoot
3 immortelle sandy
4 catharanthus pink
5 wild rosemary.
Match
6. Medicinal plant Family
Gnaphalium uliginosurn
A Rosaceae
B Rhamnaceae
In Asteraceae
G Crassulaceae
D Saxifragaceae
7. Medicinal plant Family
A Rosaceae Crataegus dahurica
B Rhamnaceae
In Asteraceae
G Crassulaceae
D Saxifragaceae
Choose one most correct answer
8. Medicinal plant raw materials "Roots", as a rule, are harvested during a certain growing season
1 budding
2 beginning of flowering
3 bloom
4 beginning of fruiting
5 end of growing season.
9. Plants in the Rosaceae family have a variety of fruits.
1 apple, false dry berry, box
2 lichen, nut, drupe
3 collection leaflet, nut, drupe
4 achene, leaflet, pod
5 drupe, achene, capsule.
10. A medicinal plant belongs to the class of dicotyledons
1 common corn
2 marsh calamus
3 lily of the valley Keisuke

4 Dioscorea nipponensis
5 common blueberry.
11. A medicinal plant is cultivated for harvesting in the Primorsky Territory
1 Eleutherococcus senticosus
2 lily of the valley Keisuke
3 Aralia Manchurian
4 Dioscorea nipponensis
5 ginseng.
Option 4
Match
1. Medicinal plant Medicinal plant raw materials
Aralia mandshurica
A rhizomata et radices
B rhizomata cum radicibus
In radices
G rhizomata
D herba
2. Medicinal plant Medicinal plant raw materials
A rhizomata et radices Valeriana officinalis
B rhizomata cum radicibus
In radices
G rhizomata
D herba
Choose one most correct answer
3. Official plants include the type of succession
1 drooping
2 radial
3 Maksimovich
4 three-part
5 small-flowered.
4. A medicinal plant is endemic to the Far East
1 angustifolia nettle
2 Aralia Manchurian
3 Viburnum Sargent
4 burnet
5 watch three-leaf.
5. Plants of the Apiaceae family are characterized by an inflorescence
1 shield
2 head
3 umbrella
4 panicles
5 brush.
6. Plants of the monocot class are characterized by the characteristic

1 embryo dicotyledonous 4 flowers 5 - segmented
2 tap root system 5 flowers 4 - membered.
3 venation arcuate parallel to nerve
7. In the Far East, wild plant raw materials are being harvested
1 black henbane
2 chamomile
3 marsh calamus
4 alder buckthorn
5 common corn.
Match
8. Family Morphological character Poaceae
And the stem is a “straw”
B presence of milky juice
In inflorescence - basket
G fruit - berry
D venation - arcunervous
9. Family Morphological character Papaveraceae
And the stem is a “straw”
B presence of milky juice
In inflorescence - basket
G fruit - berry
D venation - arcunervous
10. Family Morphological character Polygonaceae
A tetrahedral stem
B inflorescence - umbrella
Bells available
G fruit - capsule
D leaves with stipules
11. Family Morphological character
A tetrahedral stem
Brassicaceae
B inflorescence - umbrella
Bells available
G fruit - capsule
D leaves with stipules
Choose one most correct answer
12. A medicinal plant was introduced into cultivation in the Far East
1 enticement high
2 catharanthus pink
3 chamomile green
4 peppermint
5 Foxglove purpurea.

CREDIT TEST OF EDUCATIONAL PRACTICE IN PHARMACOGNOSY

Choose one correct answer

1. Time for procurement of medicinal plant materials of knotweed

a) the beginning of the growing season

b) budding

c) flowering

d) fruiting

2. Time for procurement of medicinal plant raw materials of wild rosemary

a) the beginning of the growing season

b) budding

c) flowering

d) fruiting

3.Time for procurement of medicinal plant raw materials Viburnum viburnum

a) the beginning of the growing season

b) budding

c) flowering

d) fruiting

4.Time for procurement of medicinal plant raw materials Manchurian aralia

a) the beginning of the growing season

b) end of the growing season

c) flowering

d) fruiting

5. Time for procurement of medicinal plant raw materials of dandelion officinalis

a) the beginning of the growing season

b) end of the growing season

c) flowering

d) fruiting

6. Time for procurement of medicinal plant raw materials of stinging nettle

a) the beginning of the growing season

b) end of the growing season

c) flowering

d) fruiting

7. Time for procurement of medicinal plant raw materials Bidens tripartita

a) the beginning of the growing season

b) budding

c) beginning of flowering

d) end of the growing season

8. Time for procurement of medicinal plant raw materials Taraxacum officinale

a) the beginning of the growing season

b) budding

c) beginning of flowering

d) end of the growing season

9. Time for procurement of medicinal plant raw materials Viburnum sargentii

a) fruiting

b) budding

c) beginning of flowering

d) end of the growing season

10. Time for procurement of medicinal plant raw materials Aralia mandshurica

a) the beginning of the growing season

b) budding

c) beginning of flowering

d) end of the growing season

11. Time for procurement of medicinal plant materials Tilia cordata

a) the beginning of the growing season

b) end of the growing season

c) flowering

d) fruiting

12.Time for procurement of medicinal plant raw materials Sorbus aucuparia

a) the beginning of the growing season

b) end of the growing season

c) the beginning of fruiting

d) fruiting

13. Time for procurement of medicinal plant materials Menyanthes trifoliata

a) flowering

b) beginning of flowering

c) flowering - until the fruits crack

d) fruiting

14. Time for procurement of medicinal plant raw materials Hypericum perforatum

a) flowering - until the fruits crack

b) beginning of flowering

c) flowering - before the appearance of unripe fruits

d) fruiting

15. Time for procurement of medicinal plant raw materials Capsella bursa-pastoris

a) flowering - until the fruits crack

b) beginning of flowering

c) the beginning of fruiting

d) fruiting

16. Time for procurement of medicinal plant raw materials Plantago major

a) flowering - until the fruits crack

b) flowering

c) the beginning of fruiting

d) fruiting

17. Time for procurement of medicinal plant materials Padus asiatica

a) flowering - until the fruits crack

b) flowering

c) the beginning of fruiting

d) fruiting

18. Time for procurement of medicinal plant raw materials Tanacetum boreale

a) flowering - until the fruits crack

b) beginning of flowering

c) the beginning of fruiting

d) flowering

19. Morphological description - leaves are opposite, deeply tripartite, flowers are tubular, yellow, collected in large flat baskets, the fruit is an achene with two serrated awns, consistent with a medicinal plant

a) common yarrow

b) marsh cudweed

c) three-part series

d) green chamomile

20. Morphological description - shrub, stems with numerous thorns, leaves five-fingered, long-petiolate, oval leaves with a pointed apex, sharply bi-toothed, flowers collected in spherical multi-flowered umbels, fruits varied, black, shiny - corresponds to a medicinal plant

a) Aralia Manchurian

b) Eleutherococcus senticosus

c) Dioscorea nipponensis

d) common raspberry

21. Morphological description - broadly elliptical leaves in a basal rosette, narrowed into a petiole, with one bare arrow ending in a cylindrical spike - corresponds to a medicinal plant

a) coltsfoot

b) dandelion officinalis

c) Keiske lily of the valley

d) big plantain

22. Eleutherococcus senticosus from Acanthopanax sessileflower allows one to distinguish the morphological character

a) life form

b) leaf blade shape

c) the nature of leaf arrangement

d) the nature of the inflorescence

23. Common yarrow from ptarmika allows you to distinguish a morphological feature

a) the nature of the stem

b) type of inflorescence

c) the nature of leaf arrangement

d) dissection of the leaf blade

24. Raw materials of medicinal plants are stored separately from other types of raw materials.

a) shepherd's purse

b) big plantain

c) greater celandine

d) common calendula

25. Raw materials of medicinal plants are stored separately from other types of raw materials.

a) Daurian rosehip

b) big plantain

c) coltsfoot

d) bergenia thick-leaved

26. Raw materials of medicinal plants are stored separately from other types of raw materials.

a) knotweed

b) three-leaf watch

c) bird cherry

d) common lingonberry

27. Raw materials of medicinal plants are stored separately from other types of raw materials.

a) bearberry

b) coltsfoot

c) snake mountaineer

d) wild rosemary

28. During the initial processing of plantain raw materials, an operation is carried out

a) determination of polysaccharide content

b) determination of humidity

c) removing flower arrows

d) drying

29. During the initial processing of burnet raw materials, an operation is performed

a) determination of mineral impurity

b) determination of humidity

c) drying

d) clearing the land

30. During the initial processing of dried cucumber raw materials, an operation is carried out

a) removal of roots

b) drying

c) determination of the amount of mineral impurity

d) removing parts of other plants

31. The name of a plant that is a vicarious species of stinging nettle, growing in the Far East

a) Urtica dioica

b) Urtica urens

c) Lamium album

d) Urtica angustifolia

32. The name of the plant, which is a vicarious species of rowan common, growing in the Far East

A)Sorbus aucuparia

b) Sorbus amurensis

c) Sorbus asiatica

d) Sorbus sargentii

33. The name of the plant, which is a vicarious species of plantain, growing in the Far East

a) Plantago major

b) Plantago asiatica

c) Plantago media

d) Plantago stepposa

34. The raw phytomass formed by marketable specimens in areas suitable for commercial harvesting is called

A)productivity

b) biological reserve

c) operational reserve

d) annual volume of procurement

35. The amount of raw phytomass of a medicinal plant collected from a unit area of a thicket is called

A)productivity

b) biological reserve

c) operational reserve

d) annual volume of procurement

36. Method of propagation of calendula officinalis

a) vegetatively by rhizomes

b) seeds

c) vegetatively by roots

d) cuttings

37. Method of propagation of chamomile

a) vegetatively by rhizomes

b) seeds

c) vegetatively by roots

d) cuttings

38. Coltsfoot breeding method

a) vegetatively by rhizomes

b) baskets

c) vegetatively by roots

d) cuttings

39. An admixture to calamus is the plant

a) smilacin

b) felt burdock

c) cattail

d) wintergreen

40. The raw material of lily of the valley from impurities makes it possible to distinguish the macro-sign

a) number of veins

b) the nature of venation

c) the edge of the leaf blade

d) base of leaf blade

41. An admixture to coltsfoot is a plant

a) bought

b) stuck

c) iris

d) yasnotka

42. An admixture to Eleutherococcus is the plant

a) Calopanax seven-lobed

b) Aralia Manchurian

c) acanthopanax sessile flower

d) real ginseng

43. A medicinal plant growing in the Far East is included in the Red Book of the Russian Federation

a) wild rosemary

b) Eleutherococcus senticosus

c) the temptation is high

d) lily of the valley.

44. A medicinal plant growing in the Far East is included in the Red Book of the Russian Federation

a) marsh cudweed

b) Pacific bergenia

c) securinega subshrub

d) Amur barberry.

45. A medicinal plant growing in the Far East is included in the Red Book of the Russian Federation

a) Amur linden

b) Daurian hawthorn

c) Dioscorea nipponensis

d) three-leaf watch

46. The preparation of medicinal plant raw materials of Dioscorea nipponensis for thickets is carried out after a certain time

a) year
b) three years
c) twenty years
d) ten years
47. The preparation of medicinal plant raw materials of Asian bird cherry is carried out periodically
a) annually
b) in two years
c) in five years
d) in six years.
48. A cultivated medicinal plant is classified as an annual
a) coltsfoot
b) coriander sativum
c) St. John's wort.
d) caraway seeds
49. A cultivated medicinal plant is classified as biennial
a) calendula officinalis
b) St. John's wort
c) caraway seeds
d) coriander
50. A cultivated medicinal plant is a perennial
a) common anise
b) peppermint
c) calendula officinalis
d) coriander
51. Before planting, thermal stratification of plant seeds is carried out
a) coriander sativum
b) calendula officinalis
c) anise
d) chamomile
52.In the Far East, wild plant raw materials are being harvested
a) black henbane
b) chamomile
c) marsh calamus
d) alder buckthorn
53. A medicinal plant was introduced into cultivation in the Far East
a) the temptation is high
b) catharanthus rosea
c) green chamomile
d) peppermint
54. In the Far East, only a medicinal plant grows in cultivated form.
a) Viburnum Sargent
b) sea buckthorn

c) northern tansy
d) Amur linden
55. A medicinal plant grows wild in the Far East
a) angustifolia nettle
b) coltsfoot
c) sandy immortelle
d) wild rosemary.
56. A medicinal plant is cultivated for harvesting in the Primorsky Territory
a) Eleutherococcus senticosus
b) Keiske lily of the valley
c) Aralia Manchurian
d) ginseng
57. A medicinal plant is cultivated and grows wild in the Far East
a) calendula officinalis
b) knotweed
c) Viburnum Sargent
d) stinging nettle
58. Medicinal plant raw materials Aralia mandshurica
a) rhizomata et radices
b)rhizomata cum radicibus
V)rhizomata
G)radices
59.Medicinal plant raw materials Valeriana officinalis
a) rhizomata et radices
b)rhizomata cum radicibus
V)rhizomata
G)radices
60. Medicinal plant raw materials Inula helenium
a) rhizomata et radices
b)rhizomata cum radicibus
c) herba
G)radices
61.Medicinal plant raw materials Urtica dioica
a) rhizomata et radices
b) folia
c) herba
G)radices
62. Medicinal plant raw materials Polygonum aviculare
a) rhizomata et radices
b) folia
c) herba
G)radices
63. Medicinal plant raw materials Bidens tripartita

a) rhizomata et radices

b) folia

c) herba

G)radices

64. Medicinal plant raw materials Taraxacum officinale

a) rhizomata et radices

b) folia

c) herba

G)radices

65. Morphological character: tetrahedral stem, opposite leaves belongs to plants of the family

A)Polygonaceae

b) Lamiaceae

c) Rosaceae

G)Asteraceae

66. Morphological character: inflorescence - umbrella belongs to plants of the family

a) Apiaceae

b) Brassicaceae

c) Rosaceae

d) Polygonaceae

67. Morphological feature: the presence of bells refers to plants of the family

a) Brassicaceae

b) Apiaceae

c) Rosaceae

d) Polygonaceae

68. Morphological character: the two-lipped flower belongs to plants of the family

a) Apiaceae

b) Rosaceae

c) Asteraceae

d) Lamiaceae

69. Morphological character: Complex flowers in inflorescence, basket belongs to plants of the family

a) Apiaceae

b) Rosaceae

c) Asteraceae

d) Lamiaceae

70. A medicinal plant belongs to the class of dicotyledons

a) common corn

b) marsh calamus

c) Keiske lily of the valley

d) blueberry

71. Medicinal plant raw materials "Leaves", as a rule, are harvested during a certain growing season

a) the beginning of the growing season

b) budding

c) flowering

d) fruiting

72. Medicinal plant raw materials "Grass", as a rule, are harvested during a certain growing season

a) the beginning of the growing season

b) budding

c) flowering

d) fruiting

73.Medicinal plant raw materials "Roots", as a rule, are harvested during a certain growing season

a) the beginning of the growing season

b) budding

c) flowering

d) end of the growing season

74. Official plants include a species of horsetail

a) meadow

b) field

c) forest

d) swampy

75. Official plants include the type of succession

a) drooping

b) radial

c) tripartite

d) small-flowered

76. Official plants include a species of nettle

a) deaf

b) dioecious

c) narrow-leaved

d) burning

77. Plants of the Apiaceae family are characterized by an inflorescence

a) shield

b) head

c) umbrella

d) brush

78. Plants of the Fabaceae family are characterized by fruit

a) leaflet

b) quillberry

c) pod

d) bob

79. Plants of the family Rosaceae have a variety of fruits
a) apple, false dry berry, box
b) apple, nut, drupe
c) achene, nut, drupe
d) achene, leaflet, pod
80. Knobby stems with bells are a characteristic feature of plants of the family
a) Ranunculaceae
b) Polygonaceae
c) Urticaceae
d) Apiaceae
81. The inflorescence "Umbrella" is characteristic of a plant of the family
a) Valerianaceae
b) Araliaceae
c) Fabaceae
d) Polygonaceae
82. Plants of the monocot class are characterized by the trait
a) flowers 5-membered
b) tap root system
c) venation arcuate parallel to the nerve
d) flowers 4-membered
83. Plants of the monocot class are characterized by the shape of their leaves
a) trifoliate
b) palmate
c) heart-shaped
d) elliptical
84. The leaves of the Convallariaceae family are characterized by venation
a) parallel
b) arcuate
c) feathery
d) mesh
85. A medicinal plant is endemic to the Far East
a) angustifolia nettle
b) Aralia Manchurian
c) burnet
d) three-leaf watch
86. A relict plant grows in the Far East
a) green chamomile
b) Daurian rosehip
c) the temptation is high
d) Daurian hawthorn
87. A medicinal plant is endemic to the Far East
a) Ungernia Victor
b) St. John's wort

c) Schisandra chinensis

d) yellow poppy

88. A medicinal plant belongs to the class of monocots

a) large plantain

b) green chamomile

c) stinging nettle

d) Keiske lily of the valley

89. A medicinal plant belongs to the class of dicotyledons

a) common corn

b) marsh calamus

c) Keiske lily of the valley

d) green chamomile

90. After flowering, the raw materials of the medicinal plant are prepared

a) common tansy

b) knotweed

c) coltsfoot

d) big plantain

91. During flowering, raw materials of a medicinal plant are prepared

a) common viburnum

b) chokeberry

c) cordifolia linden

d) three-leaf watch

92. Macro-signs are characteristic of coltsfoot leaves

a) bare, filamentous veins where the petiole breaks

b) oblong-ovate with a dense network of veins, strongly protruding from below, the edge is unevenly crenate

c) round-heart-shaped, notched, white-tomentose underneath

d) broadly elliptical, entire, with longitudinal arcuate veins

93. By good quality of pharmaceutical products we mean the conformity of raw materials

a) expiration dates

b) content of active substances

c) its name

d) all requirements of ND

94. Organic impurities of pharmaceutical substances are parts

a) plants that have lost their natural color

b) other non-poisonous plants

c) other poisonous plants

d) the same plant, not subject to collection

95. Mineral impurity in medicinal products is

a) earth, glass, small pebbles, sand, dust

b) an admixture of any substances of mineral origin

c) lumps of earth, small pebbles, sand

d) sediment obtained after stirring a sample of raw materials with 10 ml of water

6. Indicate the name of the LRS given below:

leaves broadly ovate, entire, glabrous, with 3-9 longitudinal arcuate veins, where the petiole breaks, the veins are threadlike

a) stinging nettle

b) big plantain

c) coltsfoot

d) gray eucalyptus

97. A vicarious species of plantain grows in the Far East

a) Manchurian

b) Daurian

c) average

d) Asian

98. In medicine, it is allowed to use raw materials obtained from the Plantago plant:

a) lanceolata

b) maritima

c) media

d) major

99. Actium lapa is the Latin name of the plant:

a) coltsfoot.

b) big plantain.

c) kelp sugar.

d) big burdock

100. Shepherd’s purse raw materials are harvested at a certain phase of the growing season

a) the beginning of the growing season

b) before flowering - flowering

c) flowering - full ripening of fruits

d) flowering - before the fruits crack

Head of OP Shokur O.A.

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)
Institute of Life Sciences and Biomedicine (School)

Department of Pharmacy and Pharmacology

Full Name

REPORT

Educational practice. Pharmacognosy practice

specialty 05/33/01 Pharmacy

The author of the work is student gr.
signature
"_" _____ 202_
Head of practice from FEFU Institute of Housing and Mechanical Engineering

(position, academic title)

(signature) (I.O.F)
"_" 202_

The report is protected with a rating

_____

(signature) (I.O.F)
"_" 202_

Vladivostok
202_

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
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Institute of Life Sciences and Biomedicine (School)

Department of Pharmacy and Pharmacology

Full Name

DIARY

undergoing practical training
Educational practice. Pharmacognosy practice
student_____course
_____
(Full name.)

specialty 05/33/01 Pharmacy

Place of practice_____
_____
_____

Practice time:
Start
_____
ending
_____
Head of practice:
from the university
_____
from the enterprise
_____

M.p.

Vladivostok
202_g.

THE FIRST DAY	
date	
day of the week	
place of work (department)	
content of the work (description of the process)	
compliance with schedule	
grade	
signature of the practice manager from enterprises	
SECOND DAY	
date	

day of the week	
place of work	
content of the work (description of the process)	
compliance with schedule	
grade	
signature of the practice manager from the company	

DAY THREE	
date	
day of the week	
place of work	
content of the work (description of the process)	

compliance with schedule	
grade	
signature of the practice manager from the company	

DAY FOUR	
date	
day of the week	
place of work	
content of the work (description of the process)	

compliance with schedule	
grade	
signature of the practice manager from the company	

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)

INSTITUTE OF LIFE SCIENCES AND BIOMEDICINE (SCHOOL)

I APPROVED
Director of the Institute of Life Sciences and Biomedicine (School)

_____ Yu.S. Khotimchenko
Full name

"06" December 2022

WORK PROGRAM OF TRAINING PRACTICE
Educational practice. Practice in general pharmaceutical technology
Specialty: 05/33/01 Pharmacy
Form of preparation (full-time)
Graduate qualification: pharmacist

Vladivostok
2022

1. OBJECTIVES OF MASTERING EDUCATIONAL PRACTICE

The purpose of the practice is “Educational practice. Practice in general pharmaceutical technology” – consolidation of theoretical knowledge acquired while studying pharmaceutical technology at the university, as well as the formation of general professional and professional competencies.

2. OBJECTIVES OF EDUCATIONAL PRACTICE

The objectives of the practice “Educational practice. Practice in General Pharmaceutical Technology" are:

- acquaintance of students with pharmaceutical enterprises for the production of finished medicines.
- familiarization with the main tasks and functions of an industrial enterprise.
- study of safety precautions and principles of labor protection, ecology and production safety.
- studying the principles of GMP in organizing the production of pharmaceutical products.

3. THE PLACE OF EDUCATIONAL PRACTICE IN THE STRUCTURE OF OBOP

“Training practice. Practice in general pharmaceutical technology" is an integral part of the main professional educational program, is included in block 2 "Practice" and is mandatory.

The knowledge acquired by students in practice in general pharmaceutical technology is necessary for successfully completing the following types of practical activities in pharmaceutical technology:

– Internship. Pharmaceutical technology practice
– Internship. Medicine quality control practice
– Internship. Practice in management and economics of pharmaceutical organizations
– Internship. Practice in pharmaceutical consulting and information

4. TYPES, METHODS, PLACE AND TIMES OF TRAINING PRACTICE

Type of practice – educational practice.

Type of practice - Educational practice. Practice in general pharmaceutical technology

Method of implementation: inpatient/outsite

The form of practice is concentrated.

In accordance with the schedule of the educational process, practice is implemented in the 8th semester.

The place of practice is the educational laboratories of the Department of Pharmacy and Pharmacology of the Institute of Housing and Biomedicine of the Far Eastern Federal University.

For persons with disabilities and people with disabilities, the choice of places of practice is consistent with the requirement of their accessibility for these students and the practice is carried out taking into account the characteristics of their psychophysical development, individual capabilities and health status.

5. STUDENT COMPETENCIES FORMED AS A RESULT OF TRAINING PRACTICE

As a result of the practice “Training practice. Practice in general pharmaceutical technology" the student must demonstrate the following results:

General professional competencies of graduates and indicators of their achievement

Name of the category (group) of general professional competencies	Code and name of general professional competence (result of mastery)	Code and name of the competency achievement indicator
Adaptation to production conditions	OPK-3. Able to carry out professional activities taking into account specific economic, environmental, social factors within the framework of the system of legal regulation of the sphere of circulation of medicines	GPC-3.1 Complies with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
		GPC-3.2 Takes into account, when making management decisions, economic and social factors that influence the financial and economic activities of pharmaceutical organizations
		OPK-3.3 Performs labor actions taking into account their impact on the environment, preventing the occurrence of environmental hazards
		OPK – 3.4 Determines and interprets the main environmental indicators of the state of the production environment during the production of medicines

Code and name of the competency achievement indicator	Name of the assessment indicator (results of training in the discipline)
GPC-3.1 Complies with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines	Knows the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
	Able to solve problems of professional activity in the field of drug circulation
	Knows methods of compliance with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
GPC-3.2 Takes into account, when	Knows the economic and social factors that influence the

making management decisions, economic and social factors that influence the financial and economic activities of pharmaceutical organizations	financial and economic activities of pharmaceutical organizations
	Able to take into account economic and social factors when making management decisions
	Knows methods of taking into account economic and social factors
OPK-3.3 Performs labor actions taking into account their impact on the environment, preventing the occurrence of environmental hazards	Knows the environmental impact of his work activities
	Able to perform work activities taking into account their impact on the environment
	Knows methods of counteracting environmental hazards
OPK – 3.4 Determines and interprets the main environmental indicators of the state of the production environment during the production of medicines	Knows the main environmental indicators of the state of the production environment during the production of medicines
	Able to identify and interpret the main environmental indicators of the state of the production environment during the production of medicines
	Knows methods for determining and interpreting the main environmental indicators of the state of the production environment during the production of medicines

Professional competencies of graduates and indicators of their achievement:

Task type	Code and name of professional competence (result of mastery)	Code and name of the competency achievement indicator
pharmaceutical	PK-5 Capable of producing medicines and taking part in the production technology of finished medicines	PC-5.1 Carry out measures to prepare the workplace, technological equipment, medicinal and auxiliary substances for the manufacture of medicinal products in accordance with recipes and (or) requirements
		PC-5.2. Manufactures medicinal products, including in-pharmacy procurement and serial production, 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-5.3. Packages, labels and (or) prepares manufactured medicinal products for release
		PC-5.4. Registers data on the manufacture of medicinal products in the prescribed manner, including keeping subject-to-quantitative records of groups of medicinal products and other substances subject to such registration
		PC-5.5. Selection of excipients and dosage forms taking into account the influence of biopharmaceutical factors

		PC-5.6. Conducts calculations of the quantities of medicines and excipients for the production of all types of modern dosage forms

Code and name of the competency achievement indicator	Name of the assessment indicator (result of training by practice)
PC-5.1 Carry out measures to prepare the workplace, technological equipment, medicinal and auxiliary substances for the manufacture of medicinal products in accordance with recipes and (or) requirements	Knows theoretical fundamentalspreparing the workplace, technological equipment, medicinal and auxiliary substances for the manufacture of medicinal products in accordance with recipes and (or) requirements
	Cancarry out measures to prepare the workplace, technological equipment, medicinal and auxiliary substances for the manufacture of medicinal products in accordance with recipes and (or) requirements
	Knows methodspreparing the workplace, technological equipment, medicinal and auxiliary substances for the manufacture of medicinal products in accordance with recipes and (or) requirements
PC-5.2. Manufactures medicinal products, including in-pharmacy procurement and serial production, in accordance with established rules and taking into account the compatibility of medicinal and excipients, controlling quality at all stages of the technological process	Knows the theoretical foundations of the manufacture of medicinal products, including carrying out in-pharmacy procurement and serial production, in accordance with established rules and taking into account the compatibility of medicinal and excipients, controlling quality at all stages of the technological process
	Able to manufacture medicinal products, including in-pharmacy procurement and serial production, in accordance with established rules and taking into account the compatibility of medicinal and excipients, controlling quality at all stages of the technological process
	Knows the methods of manufacturing medicinal products, including carrying out in-pharmacy procurement and serial production, 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-5.3. Packages, labels and (or) prepares manufactured medicinal products for release	Knows theoretical fundamentalspackaging, labeling and (or) registration of manufactured medicinal products for release
	Can dopack, label and (or) register manufactured medicinal products for release
	Knows methodspackaging, labeling and (or) registration of manufactured medicinal products for release
PC-5.4. Registers data on the manufacture of medicinal products in the prescribed manner, including keeping subject-to-quantitative records of groups of medicinal products and other substances subject to such registration	Knows the theoretical foundations of pregistration of data on the manufacture of medicinal products in the prescribed manner, including maintaining subject-quantitative records of groups of medicinal products and other substances subject to such registration
	Canregister data on the manufacture of medicinal products in the prescribed manner, including keeping subject-to-quantitative records of groups of medicinal products and other substances subject to such registration
	Proficient in methodsregistration of data on the manufacture of medicinal products in the prescribed manner, including maintaining subject-quantitative records of groups of medicinal products and other substances subject to such registration
PC-5.5. Manufactures medicinal products, including mass production,	Knows the theoretical foundations andproduction of medicinal products, including mass production, in the field when

in the field when providing assistance to the population in emergency situations	providing assistance to the population in emergency situations
	Able to produce medicinal products, including mass production, in the field when providing assistance to the population in emergency situations
	Knows methods andproduction of medicinal products, including mass production, in the field when providing assistance to the population in emergency situations
PC-5.6. Carries out the selection of excipients of dosage forms taking into account the influence of biopharmaceutical factors	Knows theoretical fundamentalsselection of excipients of dosage forms taking into account the influence of biopharmaceutical factors
	Can carry outselection of excipients of dosage forms taking into account the influence of biopharmaceutical factors
	Knows methodsselection of excipients of dosage forms taking into account the influence of biopharmaceutical factors
PC-5.7. Conducts calculations of the quantities of medicines and excipients for the production of all types of modern dosage forms.	Knows theoretical fundamentalscalculations of the quantity of medicines and excipients for the production of all types of modern dosage forms
	Cancarry out calculations of the quantities of medicines and excipients for the production of all types of modern dosage forms.
	Knows methodscalculations of the quantity of medicines and excipients for the production of all types of modern dosage forms.

6. STRUCTURE AND CONTENT OF PRACTICE

The total labor intensity of educational practice is 3 credit units, 108 hours.
Contents of practice.

No.	Sections (stages) of practice	Types of educational work in practice, including independent work of students	Trudeau capacity (in hours)	Forms current control
1	Organizational stage	Safety briefing, receiving directions, individual assignments, programs and guidelines. Introductory lectures. Acquaintance with the place of practice.	6	Interview
2	Main stage	Studying the content of the work, types and specifics of the professional activity of the enterprise; Description of the assigned production tasks in the organization; Determining the specifics of the work of a pharmacist-technologist; Description of the principles of organizing the work of the main areas of activity, the sequence of solutions delivered production tasks; Content characteristics carried out events.	thirty	Individual task
3	Experimental stage	Production of extemporaneous medicines according to prescribed prescriptions.	60	Practice diary

4	The final stage	Completion of tasks; Description of completed production tasks; Compilation and defense of the practice report.	12	Practice report
TOTAL:			**108**	

7. EDUCATIONAL AND METHODOLOGICAL SUPPORT FOR STUDENTS' INDEPENDENT WORK IN PRACTICE

Student independent work (SWS) is one of the forms of practical training and is organized for the purpose of:

- systematization and consolidation of the acquired theoretical knowledge and practical skills of students;
- deepening and expanding theoretical knowledge;
- developing the ability to work with various types of information, the ability to use regulatory, legal, reference documentation and special literature;
- development of cognitive abilities of students;
- formation of such personality qualities as responsibility and organization, independence of thinking, ability for self-development, self-improvement and self-realization.

Educational and methodological support for students' independent work in educational practice are:

- educational literature on previously mastered specialized disciplines;
- regulatory documents regulating the activities of the enterprise (organization) where the student is undergoing practical training;
- methodological developments for students that determine the order and content of educational practice;

SRS can be defined as purposeful, internally motivated, structured by the subject himself and adjusted by him in terms of process and result, independent activity.

There are five levels of independent work:

1. The first level is the literal and transformative reproduction of information.
2. The second level is independent work based on the model.
3. Third – reconstructive-independent work
4. The fourth is heuristic independent work.
5. Fifth – creative (research) independent work.

To effectively carry out independent work, it is necessary to master educational strategies - a stable set of actions, purposefully organized by the subject to solve various educational tasks.

8. CERTIFICATION FORMS (BASED ON PRACTICE)

The form of control based on the results of practice in general pharmaceutical technology is a test with an assessment.

Grading scale and criteria for assessing the results of defending a report onpractice

When grading when defending a report on practice, the student must demonstrate a high level, advanced level, or threshold level. The main objects for assessing the results of internship:

- student’s business activity during practice;
- student's industrial discipline;
- quality of individual task execution;
- registration of a practice diary;
- quality of execution and execution of the practice report;
- response rate when protecting a report;
- characteristics and assessment of the student’s work by the internship supervisor from the place of internship.

When issuing a score, the following indicators are taken into account:

- depth of disclosure of the chosen research topic;
- scientific novelty and independence of the research conducted;
- compliance of the level of educational and methodological materials prepared by the student on the topic of the training session with the requirements;
- assessment of the methodological level of preparation, organization and conduct of training sessions;
- compliance of practice reporting documents with basic requirements;
- characteristics from the place of internship.

A student who fails to complete the internship program for a valid reason is sent to practice again during his free time from class.

A student who fails to complete the internship program without a valid reason or receives an unsatisfactory grade is considered to have academic debt.

The liquidation of this debt is carried out in accordance with the regulatory documents of the Far Eastern Federal University.

Typical tasks for assessing knowledge, skills, abilities and experience

During the internship, the student must complete an individual task to study individual areas of work or activities of the organization, solve specific problems in the interests of the practice base and FEFU.

It is necessary to produce a medicine, observing the requirements of the sanitary regime, and read out the data on the label and the front side of the PPK for recording.

For situation 1

Recipe: Dimedroli 0.015

Coffeini 0.02

Sacchari albi 0.2 Misce fiat pulvis Da tales doses N.30

Signa. 1 time each. 3 times a day

Reverse side of the PPK

Calculation of the mass of ingredients for all doses:

Diphenhydramine 0.015×30 = 0.45

Caffeine 0.02 × 30 = 0.6

Sugar 0.2 ×30 = 6.0

Calculation of the mass of one dose of powder (weighed):

Weight1: 0.015 + 0.02 + 0.2 = 0.235

Self-monitoring of calculations: o

total mass of powders 6.0 + 0.6 + 0.45 = 7.05

Weight2: 7.05:30 = 0.235 Therefore: Weight1 = Weight2

Calculation of permissible deviations according to project No. 751n: 0.235 ± 10% [0.211; 0.258]

Front side of PPK Date__PPK to recipe No. 1

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Signatures:

Made_

For situation 2

Rp.: Infusi radicidus Althaeae ex 5.0 - 100 ml Natrii hydrocarbonatis 2.0

Misce. Yes. Signa: 1 tablespoon 3 times a day.

Reverse side of the PPK

Determination of total volume: Vtotal = 100 ml

Calculations of the amount of ingredients: M dry marshmallow root extract (1:1) = 5.0 V solution NaHCO3 5% (1:20) = 2.0 × 20 = 40 ml

EC of dry marshmallow root extract = 0.61 ml/g Gain = M × EC = 5 × 0.61 = 3.05 ml

Permissible deviations according to project No. 751n: ± 3% 3 – 100 X – 100 X = 3 ml 3 ml < 3.05 ml therefore, we take into account the increase in volume

VH2O = 100 ml - 40 ml – 3.05 = 56.95 ml ≈ 57 ml

Vtotal = 100 ml ± 3% [97; 103]

Front side of PPK Date__

PPK to recipe No. 2

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Signatures:
Made

For situation 3
Rp.: Acidi salicylici 0.1 Vaselini 10.0
MDS Apply to skin
Reverse side of the PPK
The recipe is not standardized. Total weight of the ointment: M total. = 10.1 M (salicylic acid) = 0.1 M (vaseline) = 10.0% solids = 0.1 × 100 / 10.1 = 0.99% 0.99% < 5%, therefore, we use auxiliary liquid, grinding is carried out with vaseline oil (½ by weight of the drug)
M vaseline oil = 0.1: 2 = 0.05 (gtt. III) 0.1 - 2 drops; 0.05 - X X = 1 drop
Calculation of permissible deviations according to project No. 751n: 10.1 ± 8% [9.29 ; 10.90]
Front side of PPK Date__PPK for recipe No. 3

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Signatures:
Made_

For situation 4
Rp: Acidi ascorbinici 0.02 Kalii iodidi 0.1
Aquae purificatae 10 ml
MDS 2 drops 3 times a day in both eyes
Reverse side of the PPK
The copybook is not standardized
Determination of osmotic concentration of drugs by sodium chloride:
M sodium chloride = 0.009 x 10 – (0.02 × 0.18 + 0.1 × 0.35) = 0.09 – 0.0386 = 0.0514

Conclusion: the solution is hypoosmotic M sodium chloride = 0.0514 ≈ 0.05 Vtot. = 10 ml

Calculation of concentrated solutions and purified water: Ascorbic acid solution (1: 50) --- 1 ml (0.02 × 50)

Potassium iodide solution (1:5) --- 0.5 ml (0.1×5)

Sodium chloride solution (1:10) --- 0.5 ml (0.05×10)

Purified water (VH2O): 10 ml - (1 ml + 0.5 ml + 0.5 ml) = 8 ml Calculation of permissible deviations according to project No. 751n: 10 ml ± 10% [9; eleven]

Front side of PPK Date__PPK for recipe No. 4

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Signatures:

Made_____

For situation 5

Rp.: Coffeini-natrii benzoatis 0.1 Natrii tetraboratis 0.22

Calcii gluconatis 0.15

MfpDtd N

S.: 1 powder 3 times a day

Reverse side of the PPK

Calculation of the mass of ingredients for all doses of Caffeine sodium benzoate 0.1 × 6 = 0.6

Sodium tetraborate 0.22 × 6 = 1.32

Calcium gluconate 0.15 × 6 = 0.9 Ethyl alcohol 95% - 6 drops.

Calculation of the mass of one dose of powder (weighing) Weighing1: 0.1 + 0.22 + 0.15 = 0.47

Self-control of calculations: total mass of powders 0.6 + 1.32 + 0.9 = 2.82

Weight2: 2.82:6 = 0.47 Therefore: Weight1 = Weight2

Calculation of permissible deviations according to project No. 751n: 0.47 ± 5% [0.446 ; 0.493]

Front side of PPK Date__PPK for recipe No. 5

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Signatures:

Made_____

For situation 6

Rp.: Infusi herbae Leonuri 200 ml Magnesii sulfatis 5.0

MDS 1 tablespoon 3 times a day

Reverse side of the PPK

Determination of total volume: Vtotal = 200 ml

Calculations of the amount of ingredients: the concentration of motherwort infusion is not indicated in the recipe, we prepare it in the ratio (1:10), in accordance with the State Fund, the mass of motherwort herb M is empty. = 200 : 10 = 20.0

V ex. empty Jew. (1:2) = 20.0 × 2 = 40 ml

V conc. p-ra magnesium sulfate 20% (1:5) = 5.0 × 5 = 25 ml VH2O = 200 ml - (40 ml + 25 ml) = 135 ml

Calculation of permissible deviations according to project No. 751n: 200 ml ± 2% [196; 204]

Front side of PPK Date__PPK for recipe No. 6

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Signatures:

Made_____

For situation 7

Rp.: Resorcini 0.2

Sulfuris praecipitati 1.5

Vaselini 20.0

Misce fiat unguentum. Signa. Lubricate the ear

Reverse side of the PPK The copybook is not standardized

Total mass of ointment: 21.7 M (resorcinol) = 0.2 M (precipitated sulfur) = 1.5 M (vaseline) = 20.0% solid phase: (0.2+1.5) – 21.7 X – 100 X =7.8% 7.8% > 5% therefore, we use part of the base for grinding.

Grinding bases: 1.7:2 = 0.85

Weight of ointment: 0.2+1.5+20.0 = 21.7

Calculation of permissible deviations according to project No. 751n: 21.7 ± 7% [20.18; 23.21]

Front side of PPK Date__PPK for recipe No. 7

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Signatures:

Made_____

For situation 8

Rp.: Infusi herbae Leonuri 180 ml Metamizoli natrii (Analgini) 1.0

MDS 1 tablespoon 3 times a day

Reverse side of the PPK

Determination of total volume Vtotal = 180 ml

Calculations of the amount of ingredients: the concentration of motherwort infusion is not indicated in the recipe, we prepare it in the ratio (1:10), in accordance with the State Fund, the mass of motherwort herb M is empty. = 180 : 10 =18.0

V ex. empty Jew. (1:2) = 18.0 × 2 = 36 ml M analgin = 1.0

Gain = M × KUO = 1 × 0.68 = 0.68 ml

Permissible deviations according to project No. 751n: ± 2% 2 – 100 X – 180 X = 3.6 ml 3.6 ml > 0.68 ml therefore, we do not take into account the increase in volume

VH2O = 180 ml – 36 ml = 144 ml Vtotal = 180 ml ± 2% [176.4; 183.6]

Front side of PPK Date__PPK for recipe No. 8

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Signatures:

Made_____

For situation 9

Rp.: Riboflavini 0.002

Acidi ascorbinici 0.03
Solutionis Acidi borici 2% 10 ml
MDS 2 drops 3 times a day in both eyes

Reverse side of the PPK The copybook is not standardized

Determination of the osmotic concentration of a drug by sodium chloride: M sodium chloride = 0.009 x 10 – (0.03 × 0.18 + 0.2 × 0.35) = 0.09 – 0.0754

The osmotic concentration range is 0.09 ± 0.02 (from 0.07 to 0.11). Conclusion: the solution is isosmotic Vtotal. = 10 ml

Calculation of concentrated solutions and purified water:

A solution of ascorbic acid (1: 10) in a solution of riboflavin (1:5000) --- 0.3 ml (0.03 x 10)

A solution of boric acid (1: 25) in a solution of riboflavin (1:5000) 5 ml (0.2 x 25)

Riboflavin solution (1:5000) 4.7 ml (10 ml – 0.3 ml - 5 ml)

Calculation of permissible deviations according to project No. 751n: 10 ml ± 10% [9; eleven]

Front side of PPK Date__

PPK for recipe No. 9

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Signatures:

Made_____

For situation 10

Rp.: Infusi rhizomatae cum radicibus Valerianae ex 3.0 - 100 ml
Kalii bromidi 3.0
Coffeini-natrii benzoatis 0.4
MDS 1 tablespoon 3 times a day
Reverse side of the PPK
Vtotal = 100 ml Calculation of the amount of ingredients:
V liquid extract - valerian concentrate (1:2) = 3.0 × 2 = 6 ml V conc. potassium

bromide solution 20% (1:5) 3.0 × 5 = 15 ml

V conc. caffeine sodium benzoate solution 20% (1:5) = 0.4 × 5 = 2 ml

VH2O = 100 ml - (6 ml + 15 ml + 2 ml) = 77 ml

Calculation of permissible deviations according to project No. 751n: 100 ml ± 3% [97; 103]

Front side of PPK Date__PPK for recipe No. 10

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Signatures:

Made_____

Methodological materials defining the assessment procedure

To receive a positive assessment based on the results of the internship, the student must fully complete the internship program, timely complete and submit all necessary reporting documents to the Department.

The results of the work done should be reflected in the practice report. The report is checked and signed by the head of practice from the enterprise, then submitted to the head of practice from the university in the last week of practice on time. If the place of internship is the FEFU Department, the report is prepared by the student and submitted to the head of the internship from the university.

The final grade (credit) for the internship is given on the basis of all submitted documents, which reveal the regularity of visiting the place of practice, the thoroughness of the report, the student's initiative shown during the internship and the ability for independent professional activity.

The results of the internship are assessed according to the following criteria:

- level of mastery of competencies;
- recall of the practice manager from the organization;
- practical results of the work carried out and their significance;
- the quality of the student's answers to questions on the substance of the report.

Based on the results of the practice and the defense of students' reports, the

teacher - the head of the practice draws up a summary report.

A credit for practice is equivalent to grades for theoretical training and is taken into account when summing up the overall performance of students. The grade received by students on the test is taken into account when assigning a scholarship.

Students who fail to complete the program without a good reason or receive a negative grade may be expelled from a higher education institution as having academic debt in the manner prescribed by the university charter.

Recommendations for report content

In the introduction, it is necessary to describe the goals and objectives of the practice, give a brief description of the place of practice (organization), and formulate the mission of the enterprise.

The main part should contain a description of the history of the creation of the place of practice, the organizational structure of the enterprise, the competitive environment of the enterprise, the scope of activity of the practice object.

The following describes the stages of work in accordance with the individual task, and provides proposals for improving and organizing the work of the enterprise.

The conclusion reflects the results achieved, an analysis of the problems encountered and options for eliminating them, and one's own assessment of the level of one's professional training based on the results of the practice. The report should reflect the student's opinion on the issues studied during theoretical training, their correspondence to real activities, as well as what special skills and knowledge the student acquired during practice.

Attached to the internship report:

- feedback from the internship supervisor from the host: characteristics of the trainee's attitude to work, discipline, availability of the necessary work skills, demonstrated business and moral qualities, overall assessment of the trainee's entire work during the internship period, in free form (if the place of internship is FEFU, feedback from the supervisor practice is not formalized);

an internship diary certified by the internship supervisor from the host party, including a list and brief description of the daily types of work performed by the student during the internship in accordance with the internship calendar plan (Appendix 3).

9. EDUCATIONAL, METHODOLOGICAL AND INFORMATION SUPPORT FOR RESEARCH WORK

Main literature

1. Pharmaceutical technology. Technology of dosage forms [Electronic resource]: textbook / I. I. Krasnyuk, G. V. Mikhailova, T. V. Denisova, V. I.

Sklyarenko; Ed. I. I. Krasnyuk, G. V. Mikhailova. - M.: GEOTAR-Media, 2013. - http://www.studentlibrary.ru/book/ISBN9785970426944.html

2. Pharmaceutical technology. Technology of dosage forms. Guide to practical classes [Electronic resource]: textbook / Krasnyuk I.I., Mikhailova G.V. - M.: GEOTAR-Media, 2013. - http://www.studentlibrary.ru/book/ISBN9785970425299.html

3. Pharmaceutical technology. Manufacturing of medicinal products [Electronic resource] / A.S. Gavrilov - M.: GEOTAR-Media, 2016. - http://www.studentlibrary.ru/book/ISBN9785970436905.html

additional literature

1. Pharmaceutical technology. Manufacturing of medicines [Electronic resource]: textbook. manual / Loyd W. Allen, A. S. Gavrilov - M.: GEOTAR-Media, 2014. -http://www.studentlibrary.ru/book/ISBN9785970427811.html

2. Pharmaceutical biotechnology [Electronic resource] / Orekhov S.N. - M.: GEOTAR-Media, 2013. - http://www.studentlibrary.ru/book/ISBN9785970424995.html

3. Pharmaceutical technology. Technology of dosage forms [Electronic resource] / Krasnyuk I.I., Mikhailova G.V., Muradova L.I. - M.: GEOTAR-Media, 2011. - 656 p.

4. http://www.studentlibrary.ru/book/ISBN9785970418055.html

5. Pharmaceutical technology. Manufacturing of medicines [Electronic resource] / Gavrilov A.S. - M.: GEOTAR-Media, 2010. - 624 p. - http://www.studentlibrary.ru/book/ISBN9785970414255.html

Electronic resources and software

1. State Pharmacopoeia XIV edition in three volumes, 2018 http://femb.ru/feml
2. Federal Electronic Medical Library http://feml.scsml.rssi.ru/feml/
3. Legal information systemhttp://www.consultant.ru/
4. Scientific electronic library eLIBRARY project RFBRwww.elibrary.ru
5. FEFU Scientific Library http://www.dvfu.ru/web/library/nb1
6. Electronic library system Znanium.com
7. List of information technologies and software
8. Microsoft Office Professional Plus 2010; an office suite that includes software for working with various types of documents (texts, spreadsheets, databases, etc.);
9. 7Zip 9.20 - a free file archiver with a high degree of data compression;
10. ABBYY FineReader 11 - a program for optical character recognition;
11. Adobe Acrobat XI Pro – a software package for creating and viewing

electronic publications in PDF format;

12. Adobe Photoshop CS6;

13. ESET Endpoint Security - comprehensive protection for Windows-based workstations. Virtualization support + new technologies;

14. Google Chrome;

15. LabSolutions LC/GC Workstation software, software for controlling the Shimadzu chromatographic system and processing the results obtained, including a software module for calculating the molecular weight characteristics of polymers;

16. Multifunctional UV Control Software, software for controlling the Shimadzu spectrophotometer and processing the results obtained;

17. LabSolutions IR software for controlling the Fourier transform infrared spectrometer and processing the results obtained, in addition to standard functions, allows for measurements in photometric and kinetic modes. Includes a unique algorithm for searching spectra, as well as a library containing about 12,000 spectra, which greatly facilitates the task of identifying substances.

10. MATERIAL AND TECHNICAL SUPPORT OF TRAINING PRACTICE

To conduct research related to the implementation of practical assignments, as well as to organize independent work, students have access to the following laboratory equipment and specialized rooms that comply with current sanitary and fire safety standards, as well as safety requirements for educational, scientific and production work:

Name of equipped premises and premises for independent work	List of main equipment

Auditorium for conducting lectures and seminars type and laboratory work 690922, Primorsky Territory, Vladivostok, Russky Island, Saperny Peninsula, Ajax village, 10, Korpus 25.1, room. **M403**	Sets of laboratory furniture (tables and chairs), student board. Multimedia complex: Monoblock Lenovo C360G-i34164G500UDK; Projection screen Projecta Elpro Electrol, 300x173 cm; Multimedia projector, Mitsubishi FD630U, 4000 ANSI Lumen, 1920x1080; Built-in interface with automatic cable retraction system TLS TAM 201 Stan; Document camera Avervision CP355AF; Microphone lavalier UHF radio system Sennheiser EW 122 G3 consisting of a wireless microphone and receiver; Video conferencing codec LifeSizeExpress 220-Codeconly-Non-AES; Network video camera Multipix MP-HD718; Two 47" LCD panels, Full HD, LG M4716CCBA; Audio switching and sound amplification subsystem; centralized uninterrupted power supply. The auditorium is also equipped for an open-type pharmacy: counters, display cases (cabinets, racks with samples of pharmaceutical products), cash register apparatus.
Auditorium for conducting lectures and seminars type and laboratory work 690922, Primorsky Territory, Vladivostok, Russky Island, Saperny Peninsula, Ajax village, 10, Korpus 25.1, room. M420	Sets of educational furniture (tables and chairs), student board. Multimedia complex: Lenovo Monoblock C360G-i34164G500UDK; Projection screen Projecta Elpro Electrol, 300x173 cm; Multimedia projector, Mitsubishi FD630U, 4000 ANSI Lumen, 1920x1080; Built-in interface with automatic cable retraction system TLS TAM 201 Stan; Document camera Avervision CP355AF; Microphone lavalier UHF radio system Sennheiser EW 122 G3 included wireless microphone and receiver; Video conferencing codec LifeSizeExpress 220-Codeconly-Non-AES; Network video camera Multipix MP-HD718; Two 47" LCD panels, Full HD, LG M4716CCBA; Audio switching and sound amplification subsystem; centralized uninterruptible power supply. Laboratory equipment: Aquadistiller PE-2205 (5l/h); analytical balances; laboratory scales Vibra SJ-6200CE (NPV=6200 g/0.1 g); moisture meter AGS100; two-beam spectrophotometer UV-1800manufactured by Shimadzu; magnetic stirrer PE-6100 (10 pcs); magnetic stirrer PE-6110 M with heating (5 pcs); electric heating plate; infrared spectrophotometer IRAffinity-1S with Fourier transform; liquid chromatograph LC-20 Prominence with spectrophotometric and refractometric detector; laboratory centrifuge PE-6926 with a 10×5 ml rotor; a set of automatic Ecochem dispensers, a water bath, a drying cabinet, a fume hood, a water purification system. Sets of chemical reagents and laboratory glassware.

Audiences for independent work of students Reading rooms of the FEFU Scientific Library with open access to the collection (building A - level 10)	Educational furniture sets (tables and chairs) Monoblock HP ProOpe 400 All-in-One 19.5 (1600x900), Core i3-4150T, 4GB DDR3-1600 (1x4GB), 1TB HDD 7200 SATA, DVD+/-RW,GigEth,Wi-Fi,VT,usb kbd/mse,Win7Pro (64-bit)+Win8.1Pro(64-bit),1-1-1 Wty Internet access speed 500 Mbit/sec. Workplaces for people with disabilities are equipped with displays and Braille printers; equipped with: portable devices for reading flat-printed texts, scanning and reading machines, video enlargers with the ability to regulate color spectrums; magnifying electronic magnifiers and ultrasonic markers
Audience for independent work of students 690922, Primorsky Territory, Vladivostok, Russky Island, Saperny Peninsula, Ajax village, 10, Building 25.1, room. M621	Kits educational furniture (tables Andchairs), student board. All-in-one Lenovo C360G-i34164G500UDK 19.5" Intel Core i3-4160T 4GB DDR3-1600 SODIMM (1x4GB)500GB Windows Seven Enterprise - 17 pieces; Wired LAN network – Cisco 800 series; wireless LANs are provided for students system based on access points 802.11a/b/g/n 2x2 MIMO(2SS).
Auditorium for conducting seminar-type classes and laboratory work 690922, Primorsky Territory, Vladivostok, Russky Island, Saperny Peninsula, Ajax village, 10, Korpus 25.1, room. M409	Sets of laboratory furniture (tables, chairs, cabinets for storing equipment, reagents, pharmaceutical and laboratory glassware), student board. Laboratory equipment: water distiller, water bath, laboratory scales, pharmaceutical turntables, dispenser sets, laboratory stirrers, pH meter, suppository form, filtration unit. Sets of pharmaceutical substances, pharmaceutical and chemical glassware
Auditorium for conducting seminar-type classes and laboratory work 690922, Primorsky Territory, Vladivostok, Russky Island, Saperny Peninsula, Ajax village, 10, Building L, room L406	Sets of laboratory furniture (tables, chairs, cabinets for storing equipment, reagents, pharmaceutical and laboratory glassware), student board. Laboratory equipment: water distiller, water bath, laboratory scales, pharmaceutical turntables, dispenser sets, laboratory stirrers, apparatus for producing pharmaceuticals UNIQ -2 with replaceable attachments: granulator, coating kettle, mixer; Laboratory scales AGN100; Magnetic stirrer PE-6100 (5 pcs); Magnetic stirrer PE-6110 M with heating (2 pcs); Electric heating plate; UNIQ-7 rotary tableting press for 7 punches; mold for forming suppositories with 100 cells; device for determining the disintegration of tablets. Sets of pharmaceutical substances, pharmaceutical and chemical glassware

Appraisal Fund

During certification, the level of development of the following competencies is assessed:

Code and	Stages of developing	Criteria	Indicators

formulation of competencies	competencies			
OPK-3. Able to carry out professional activities taking into account specific economic, environmental, social factors within the framework of the system of legal regulation of the sphere of circulation of medicines	Knows (threshold level)	norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines	Great	Knows perfectly the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
			Fine	Knows sufficiently the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
			will satisfyreally	Partially knows the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
			unsatisfactoryspecifically	Does not know the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
	Can (advanced level)	solve problems of professional activity in the field of drug circulation	Great	Perfectly knows how to solve problems of professional activity in the field of drug

				circulation
			Fine	Sufficiently able to solve problems of professional activity in the field of drug circulation
			will satisfyreally	Partially able to solve problems of professional activity in the field of drug circulation
			unsatisfactoryspecifically	Does not know how to solve professional problems in the field of drug circulation
	Proficient (high level)	methods of compliance with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines	Great	He is fluent in methods of compliance with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
			Fine	Has sufficient knowledge of methods of compliance with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
			will satisfyreally	Partially knows how to comply with the norms and rules established by authorized government bodies when solving problems of professional activity

				in the field of circulation of medicines
			unsatisfactoryspecifically	Does not know how to comply with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
PK-5 Capable of producing medicines and taking part in the production technology of finished medicines	Knows (threshold level)	theoretical basispreparing the workplace, technological equipment, medicinal and auxiliary substances for the manufacture of medicinal products in accordance with recipes and (or) requirements, manufacturing of medicines,calculations of the quantity of medicines and excipients for the production of all types of modern dosage forms	Great	Knows the theoretical fundamentals perfectlypreparing the workplace, technological equipment, medicinal and auxiliary substances for the manufacture of medicinal products in accordance with recipes and (or) requirements, manufacturing of medicines,calculations of the quantity of medicines and excipients for the production of all types of modern dosage forms
			Fine	Knows the theoretical fundamentals sufficientlypreparing the workplace, technological equipment, medicinal and auxiliary substances for the manufacture of medicinal products in accordance with recipes and (or) requirements,

				manufacturing of medicines,calculations of the quantity of medicines and excipients for the production of all types of modern dosage forms
			will satisfyreally	Partially knows the theoretical foundationspreparing the workplace, technological equipment, medicinal and auxiliary substances for the manufacture of medicinal products in accordance with recipes and (or) requirements, manufacturing of medicines,calculations of the quantity of medicines and excipients for the production of all types of modern dosage forms
			unsatisfactoryspecifically	Doesn't know the theoretical foundationspreparing the workplace, technological equipment, medicinal and auxiliary substances for the manufacture of medicinal products in accordance with recipes and (or) requirements, manufacturing of medicines,calculations of the quantity of medicines and excipients for the production of all types of modern dosage forms
	Can	manufacture	Great	Perfectly knows

	(advanced level)	medicinal products, including through in-pharmacy procurement and serial production, in accordance with established rules and taking into account the compatibility of medicinal and excipients, controlling quality at all stages of the technological process;carry out calculations of the quantities of medicines and excipients for the production of all types of modern dosage forms.		how to manufacture medicinal products, including carrying out in-pharmacy procurement and serial production, in accordance with established rules and taking into account the compatibility of medicinal and excipients, controlling quality at all stages of the technological process;carry out calculations of the quantities of medicines and excipients for the production of all types of modern dosage forms.
			Fine	Sufficiently able to manufacture medicinal products, including carrying out in-pharmacy procurement and serial production, in accordance with established rules and taking into account the compatibility of medicinal and excipients, controlling quality at all stages of the technological process;carry out calculations of the quantities of medicines and excipients for the production of all types of modern dosage forms.
			will satisfyreally	Partially knows how to manufacture medicinal products, including carrying

				out in-pharmacy procurement and serial production, in accordance with established rules and taking into account the compatibility of medicinal and excipients, controlling quality at all stages of the technological process;carry out calculations of the quantities of medicines and excipients for the production of all types of modern dosage forms.
			unsatisfactoryspecifically	Does not know how to manufacture medicinal products, including carrying out in-pharmacy procurement and serial production, in accordance with established rules and taking into account the compatibility of medicinal and excipients, controlling quality at all stages of the technological process;carry out calculations of the quantities of medicines and excipients for the production of all types of modern dosage forms.
	Proficient (high level)	methods of manufacturing medicinal products, including in-pharmacy procurement and serial production, in	Great	Has a perfect command of the methods of manufacturing medicinal products, including carrying out in-pharmacy

		accordance with established rules and taking into account the compatibility of medicinal and excipients, quality control at all stages of the technological process; methodscalculations of the quantity of medicines and excipients for the production of all types of modern dosage forms.		procurement and serial production, in accordance with established rules and taking into account the compatibility of medicinal and excipients, controlling quality at all stages of the technological process; methodscalculations of the quantity of medicines and excipients for the production of all types of modern dosage forms.
			Fine	Has sufficient knowledge of the methods of manufacturing medicinal products, including carrying out in-pharmacy procurement and serial production, in accordance with established rules and taking into account the compatibility of medicinal and excipients, controlling quality at all stages of the technological process; methodscalculations of the quantity of medicines and excipients for the production of all types of modern dosage forms.
			will satisfyreally	Partially knows the methods of manufacturing medicinal products, including carrying out in-pharmacy

				procurement and serial production, in accordance with established rules and taking into account the compatibility of medicinal and excipients, controlling quality at all stages of the technological process; methodscalculations of the quantity of medicines and excipients for the production of all types of modern dosage forms.
			unsatisfactoryspecifically	Does not know the methods of manufacturing medicinal products, including carrying out in-pharmacy procurement and serial production, in accordance with established rules and taking into account the compatibility of medicinal and excipients, controlling quality at all stages of the technological process; methodscalculations of the quantity of medicines and excipients for the production of all types of modern dosage forms.

Typical test questions for preparing to defend your practice report:

1. State and prospects for the development of production of finished medicines.
2. Organization of production of finished medicines. GMP rules. Conditions

necessary for the release of finished medicinal products. Types and range of finished medicines.

3. Characteristics of machines and devices, processes and mechanisms. Their distinctive features.

4. Equipment for grinding and sifting crystalline substances and medicinal plant materials. Scheme, principle of operation. Advantages, disadvantages.

5. Methods for extracting medicinal plant materials. Equipment. Extractants. Liquefied gases.

6. Equipment for the production of liquid dosage forms. Types of mixers and filters. 7. Septic tanks. Conditions necessary for settling liquid dosage forms.

7. Equipment for thickening and drying extraction preparations. Schemes, principle of operation.

8. Quality control of extraction preparations.

9. Recovery and rectification. Equipment. Principle of operation.

10. Features of the technology of novogalenic preparations.

11. Ointment and suppository bases. Sources of obtaining them.

12. Technological scheme for obtaining ointments and suppositories. Hardware. Modern types of suppositories.

13. Classification and characteristics of plasters. Transdermal therapeutic systems (TTS).

14. Equipment for producing plasters and mustard plasters.

15. Aerodispersed systems. Classification, characteristic.Peculiaritiestechnologies. Propellants.

16. Gelatin capsule technology. Equipment for obtaining them. Quality control.

17. Equipment for grinding and sifting. Classification. Characteristic.

18. Mixers for bulk and wet materials.

19. Technological schemes for the production of powders and preparations.

20. Production of tablets. Types of tablet presses. Pressing methods.

21. Types of granulation. Equipment. Schemes, principle of operation.

22. Methods for coating tablets. Excipients.

23. Long-acting tablets. Classification Characteristics. Methods of obtaining.

24. Automatic machines for packaging tablets and powders.

25. Features of the production of granules, dragees.

26. Quality control of tablets, granules, dragees.

27. Principles for creating conditions for the production of sterile And aseptically prepared dosage forms. Clean room classes.

28. Water treatment. Obtaining demineralized water, purified water, water for injection.

29. Solvents and excipients for injection solutions and eye drops.

30. Methods for purifying sterile solutions. Types of filters. Principle of operation.

31. Pharmacopoeial methods of sterilization.

32. Production of ampoules and bottles for injection solutions and eye drops.

33. Technological scheme for producing injection solutions.

34. Quality control of sterile solutions.

Grading Criteria to a student taking an internship test	**Requirements for formed competencies**
"Great"	awarded if the student answers the questions posed exhaustively, consistently, competently, is able to generalize the material and theoretically substantiate technological features medications.
"Fine"	is given if the student answers the questions posed sufficiently fully, without significant inaccuracies, but there are minor comments on the theoretical justification technological process.
"satisfactorily"	It is given if the student does not know certain details, makes inaccuracies, or does not formulate correctly enough. Violates the technological sequence, which does not affect quality of medicines.
"not satisfactory"	is given if the student makes significant errors in the presentation of the technological process or does not answer the questions asked.

For persons with disabilities and people with disabilities, the choice of places of practice is consistent with the requirement of their accessibility for these students and the practice is carried out taking into account the characteristics of their psychophysical development, individual capabilities and health status.

Compiled by: Department Assistant pharmacy and pharmacology Pak P.A.

Agreed:

Head of OP Shokur O.A.

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)
Institute of Life Sciences and Biomedicine (School)

Department of Pharmacy and Pharmacology

Full Name

REPORT

Educational practice. Practice in general pharmaceutical technology

specialty 05/33/01 Pharmacy

The author of the work is student gr. WITH
signature
" » 202_ Head of practice from
INZHBM FEFU.

_____

(position, academic title)

_____

(signature) (I.O.F)_____
" » 202_

The report is protected with a rating

_____ _____
(signature) (I.O.F)
"_ » 202_

Vladivostok
202_

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)
Institute of Life Sciences and Biomedicine (School)

Department of Pharmacy and Pharmacology

Full Name

DIARY

undergoing practical training
Educational practice. Practice in general pharmaceutical technology
student_____course
_____
(Full name.)

specialty 05/33/01 Pharmacy

Place of practice_____
_____
_____

Practice time:
Start
_____
ending
_____

Head of practice:
from the university
_____
from the enterprise
_____

M.p.

Vladivostok

202_g.

THE FIRST DAY	
date	
day of the week	
place of work (department)	
content of the work (description of the process)	
compliance with schedule	
grade	
signature of the practice manager from enterprises	

SECOND DAY	
date	
day of the week	
place of work	
content of the work (description of the process)	
compliance with schedule	
grade	
signature of the practice manager from the company	

DAY THREE	
date	
day of the week	
place of work	
content of the work (description of the process)	
compliance with schedule	
grade	
signature of the practice manager from the company	

DAY FOUR	
date	
day of the week	
place of work	
content of the work (description of the process)	
compliance with schedule	
grade	
signature of the practice manager from the company	

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)

INSTITUTE OF LIFE SCIENCES AND BIOMEDICINE (SCHOOL)

I APPROVED
Director of the Institute of Life Sciences and Biomedicine (School)

_____ Yu.S. Khotimchenko
Full name

"06" December 2022

WORKING PROGRAM FOR EDUCATIONAL PRACTICE Educational practice. First Aid Practice
Specialty: 05/33/01 Pharmacy
Specialization "Clinical and Experimental Pharmacy (in English)"

Vladivostok
2022

NORMATIVE DOCUMENTATION REGULATING THE PROCESS OF ORGANIZATION AND CARRYING OUT PRACTICE

The work program is compiled in accordance with the requirements of the federal state educational standard of higher education, approved by order of the Ministry of Education and Science of the Russian Federation dated March 27, 2018 No. 219.

OBJECTIVES OF MASTERING EDUCATIONAL PRACTICE

The purpose of the educational practice is to consolidate skills in providing first aid

OBJECTIVES OF EDUCATIONAL PRACTICE

Acquiring skills in providing pre-hospital emergency care for specialized diseases in accordance with the standards of medical care.

PLACE OF TRAINING PRACTICE IN THE STRUCTURE OF OOP HPE

First aid practice is an integral part of the main professional educational program, is included in block B2 “Practices” and is mandatory.

FORMS, PLACE AND TIMES OF TRAINING PRACTICE

Type of practice – Educational practice.

Type of practice – First aid practice

Method of implementation: inpatient/outsite

Forms of educational practice – concentrated.

In accordance with the schedule of the educational process, practice is implemented in semester 9.

First aid practice is carried out at the Medical Center of the Federal State Autonomous Educational Institution of Higher Professional Education "Far Eastern Federal University".

For persons with disabilities and people with disabilities, the choice of places of practice is consistent with the requirement of their accessibility for these students and the practice is carried out taking into account the characteristics of their psychophysical development, individual capabilities and health status.

STUDENT COMPETENCIES FORMED AS A RESULT OF TRAINING PRACTICE

Task type	Code and name of professional competence (result of mastery)	Code and name of the competency achievement indicator

First aid	OPK-5. Able to provide first aid on the territory of a pharmaceutical organization in case of emergency conditions for visitors before the arrival of the ambulance team	GPC-5.1 Establishes the fact of an emergency condition occurring in a visitor to a pharmacy organization, in which first aid is required, including when exposed to agents of chemical terrorism and hazardous chemicals
		OPK-5.2 Conducts measures to provide first aid to visitors in emergency conditions before the arrival of the ambulance team
		OPK-5.3 Uses medical means of protection, prevention, provision of medical care and treatment of injuries caused by toxic substances of various natures, radioactive substances and biological agents

Process passing practices directed on formation of the following competencies:

Code and wording of competence	**Stages of developing competencies**
OPK-5.1 Establishes the fact of occurrence emergency condition for a pharmacy visitor organization in which it is necessary to provide first aid, including when exposed to agents chemical terrorism and hazardous chemical substances	Knows the emergency conditions of a pharmacy visitor that require first aid
	Able to establish the facts of an emergency condition in a visitor to a pharmacy organization, in which first aid is necessary, including when exposed to agents of chemical terrorism and hazardous chemical substances
	Knows how to provide first aid, including when exposed to agents of chemical terrorism and hazardous chemicals
OPK-5.2 Conducts activities to provide first aid for visitors in case of emergency conditions before the arrival of the ambulance	Knows emergency conditions that require assistance before the ambulance arrives
	Able to carry out first aid measures for visitors in case of emergency conditions before the arrival of the ambulance team
	Knows how to provide first aid to visitors
OPK-5.3 Uses medical supplies protection, prevention, medical care and treatment of injuries caused by toxic substances of various natures, radioactive substances and biological means	Knows medical means of protection, prevention, provision of medical care and treatment of injuries caused by toxic substances of various natures, radioactive substances and biological agents
	Able to use medical means of protection, prevention, provision of medical care and treatment of injuries caused by toxic substances of various natures, radioactive substances and biological agents
	Knows methods of protection, prevention, provision of medical care and treatment of injuries caused by toxic substances of various natures, radioactive substances and biological agents

STRUCTURE AND CONTENT OF TRAINING PRACTICE

The total labor intensity of educational practice is 3 credit units, 2 weeks, 108 hours.

Chapter (stage) practices	View educational work on practice, including independent work students And labor intensity (in hours)				Current control form
	Instruction on technology security	Consultation	Collection, processing material	Independent Job	
1.Preparatory stage	2	2	12	2	Checking attendance. Briefing Andtest By safety precautions. Checking the completion of the stage.
2.Basic stage (Acquaintance Withthe main task and functions of the ward nurse.)	-	4	62	4	Checking attendance. Presentation of collected materials to the practice manager. Checking the completion of the stage.
3.Finalstage	-	2	8	2	Checking attendance. Testing. Checking progress stage.
4.Preparation of the report	-	2	4	4	Submission and protection of reports By practice
Total	2	8	86	12	
Total	108				

EDUCATIONAL AND METHODOLOGICALSECURITY INDEPENDENT WORK OF STUDENTS IN PRACTICE

General recommendations for organizing students' independent work in practice are as follows:

Before completing the internship, the student must study the Medical Introductory Program and refer to the relevant regulatory materials in order to be prepared to carry out the instructions given by the practice manager and to resolve specific legal issues.

The beginning of an internship is associated, first of all, with familiarizing the student with the structure of the medical center and the job responsibilities of a ward nurse.

If you have any questions or need advice on completing an internship or performing independent types of work, you should contact the practice managers from the pharmacy and FEFU.

During practice, each student must keep a diary, which reflects the work done.

The practice diary includes a title page, a calendar plan for the internship, a list of materials collected during the internship, information about the types of work done. Records of the work done are entered into the practice diary daily.

Based on the results of the practice, a written report is drawn up, which is compiled individually by each student based on the materials received during the practice period.

CERTIFICATION FORMS (BASED ON THE RESULTS OF PRACTICE)

For certification based on the results of the internship, the student must provide a report on the internship (the title page form in Appendix 1) with a note from the internship supervisor from the enterprise, a diary of the internship (Appendix 2), with a daily note from the internship supervisor from the enterprise about the completion of work on schedule.

The report is drawn up in accordance with the requirements of clause 10.4.

Certification based on the results of practice is carried out in the form of defending a report in the form of a presentation. Reporting form: test with assessment.

A list of competencies that students must master as a result of mastering the educational program, a description of indicators and criteria for their evaluation at various stages of formation, school of assessment.

When conducting certification, the level of development of the following competencies is taken into account:

Code and wording of competence	Stages of developing competencies	Criteria	Indicators
OPK-5.1 Establishes the fact of occurrence emergency condition for a pharmacy visitor organization in which it is necessary to provide first aid, including when exposed to agents	Knows the emergency conditions of a pharmacy visitor that require first aid	Great	Student V knows perfect first aid techniques
		Fine	Student in sufficient first aid techniques
		will satisfyreally	Student partiallyknows first aid techniques
		unsatisfactoryspecifically	The student doesn't know techniques providingfirst aid
	Able to establish the facts of an emergency condition in a visitor to a pharmacy	Great	Student V perfectly able to establish the facts of an emergency

chemical terrorism and hazardous chemical substances	organization, in which first aid is necessary, including when exposed to agents of chemical terrorism and hazardous chemical substances		condition in a visitor to a pharmacy organization
		Fine	Student V is sufficiently able to establish the facts of an emergency condition in a visitor to a pharmacy organization
		will satisfyreally	Student partially fromis able to establish the facts of an emergency condition in a visitor to a pharmacy organization
		unsatisfactoryspecifically	The student doesn't know atis able to establish the facts of an emergency condition in a visitor to a pharmacy organization
	Knows how to provide first aid, including when exposed to agents of chemical terrorism and hazardous chemicals	Great	Student V fluent in first aid techniques
		Fine	The student is sufficiently proficient in first aid techniques
		will satisfyreally	The student has partial knowledge of first aid methods
		unsatisfactoryspecifically	The student does not know first aid methods
OPK-5.2 Conducts activities to provide first aid for visitors in case of emergency conditions before the arrival of the ambulance	Knows emergency conditions that require assistance before the ambulance arrives	Great	The student knows perfectlyemergency conditions that require assistance before the ambulance arrives
		Fine	Student in to a sufficient degreeemergency conditions that require assistance before the ambulance arrives
		will satisfyreally	The student partially knowsemergency conditions that require assistance before the ambulance arrives
		unsatisfactoryspecifically	The student doesn't knowemergency conditions that require assistance before the ambulance arrives
	Able to carry out first aid measures for visitors in case of emergency conditions before the arrival of the ambulance team	Great	The student is perfectly able to carry out first aid measures for visitors
		Fine	The student is sufficiently able to carry out first aid measures for visitors
		will satisfyreally	The student is partially able to carry out first aid measures for visitors
		unsatisfactoryspecifically	The student does not know how to provide first aid to

			visitors
OPK-5.3 Uses medical supplies protection, prevention, medical care and treatment of injuries caused by toxic substances of various natures, radioactive substances and biological means	Knows medical means of protection, prevention, provision of medical care and treatment of injuries caused by toxic substances of various natures, radioactive substances and biological agents	Great	The student knows perfectlymedical means of protection, prevention, medical care
		Fine	The student is sufficientlymedical means of protection, prevention, medical care
		will satisfyreally	The student partially knowsmedical means of protection, prevention, medical care
		unsatisfactoryspecifically	The student doesn't know medical means of protection, prevention, medical care
	Able to use medical means of protection, prevention, provision of medical care and treatment of injuries caused by toxic substances of various natures, radioactive substances and biological agents	Great	Student to perfectionAble to use medical means of protection, prevention, and medical care
		Fine	The student is sufficientlyknows how to use medical means of protection, prevention, medical care
		will satisfyreally	Partial studentknows how to use medical means of protection, prevention, medical care
		unsatisfactoryspecifically	The student is notknows how to use medical means of protection, prevention, medical care
	Knows methods of protection, prevention, provision of medical care and treatment of injuries caused by toxic substances of various natures, radioactive substances and biological agents	Great	Student to perfectionKnows methods of protection, prevention, medical care
		Fine	The student is sufficientlyKnows methods of protection, prevention, medical care
		will satisfyreally	Partial studentKnows methods of protection, prevention, medical care
		unsatisfactoryspecifically	The student is not inmasters methods of protection, prevention, medical care

Assessment criteria for practice certification

In total, you can get a maximum of 100 points in the practice test.

Points for work during practice are distributed as follows:

36 points - attending an internship. If there are no gaps, 36 points are given, for each gap 6 points are deducted. If the practice is missed for a good reason (due to

illness, documented, official release of the dean's office to participate in various events), then the point is not deducted.

36 points – filling out a diary and reporting documentation.

0-28 points – defense of a practice report in the form of a presentation.

Scale of correspondence of rating points to the five-point scale:

An "excellent" grade (91–100 points) is given to a student who demonstrates deep knowledge when defending a report. The practice diary and reporting documents are prepared by the student in accordance with the requirements of this work program.

A "good" grade (77–90 points) is given to a student who demonstrates deep knowledge when defending a report. However, there were some mistakes in the answer, which were corrected by the student with the help of the teacher. The practice diary and reporting documents are prepared by the student in accordance with the requirements of this work program.

A "satisfactory" grade (61–76 points) is given to a student who, when defending a report, demonstrates insufficient knowledge and makes mistakes. The practice diary and reporting documents are prepared by the student in accordance with the requirements of this work program.

A grade of "unsatisfactory" (less than 61 points) is given to a student who, when defending a report on practice, gives an incomplete answer, which represents scattered knowledge on the topic of the question with significant errors. The diary and reporting documents are partially completed.

Assessment tools for monitoring the level of development of competencies (current monitoring of academic performance, intermediate certification based on the results of mastering the discipline and educational and methodological support for students' independent work)

Typical tasks for defending an internship report:

When performing certain types of propaedeutic practice work listed above, the student must be guided by the following tasks and brief recommendations for their implementation, namely:

Familiarize yourself with safety precautions.

Get acquainted with the premises of the medical center;

Familiarize yourself with the staff of the medical center, paying attention to the names of positions and the main functions of employees.

Methodological materials defining the assessment procedure.

To receive a positive assessment based on the results of the internship, the student must fully complete the internship program, timely complete and submit to the internship supervisor all the necessary reporting documents. The results of the work

done should be reflected in the practice report. The report is checked and signed by the head of practice from the enterprise, then submitted to the head of practice from the university in the last week of practice on time. If the place of internship is FEFU, the report is prepared by the student and submitted to the head of the internship from the university. The final grade for the practice is given on the basis of all submitted documents, through which the regularity of visiting the place of practice, the thoroughness of the report, the student's initiative shown during the practice and the ability for independent professional activity are revealed. The results of the internship are assessed according to the following criteria: - level of mastery of competencies; - review of the practice manager from the organization; - practical results of the work carried out and their significance; - the quality of the student's answers to questions on the substance of the report. Based on the results of the practice and the defense of students' reports, the teacher - the head of the practice draws up a summary report. A credit for practice is equivalent to grades for theoretical training and is taken into account when summing up the overall performance of students. The grade received by students on the test is taken into account when assigning a scholarship. For a student who has not completed the internship program for a valid reason, the period for completing it without interruption from studies is extended. In case of failure to complete the internship program, failure to submit a report on the internship, or receiving a negative review from the internship supervisor from the enterprise where the student practiced, and an unsatisfactory grade when defending the report, the student may be expelled from the university.

Preparation of a practice report

The internship report is compiled in accordance with the main stage of the internship program and reflects the implementation of the internship program. The report is drawn up on A4 paper (210x297 mm). The text of the report is presented on one side of the sheet, in Times New Roman font, size 14, with 1.5 intervals. Each page of the work is designed with the following margins: left - 30 mm; right - 10 mm; top - 20 mm; lower - 20 mm. The paragraph indent in the text is 1.5 cm. All pages of the work must have continuous numbering, including appendices. Numbering is done in Arabic numerals, with the page serial number placed in the lower right corner, starting with the table of contents after the title page. All structural elements of the practice report are stitched together. The report can be illustrated with tables, graphs, diagrams, filled-in forms, and drawings. The pages of the report are numbered in Arabic numerals, with continuous numbering throughout the text. The number is placed in the center of the bottom of the sheet (aligned from the center) without a dot at the end of the number. The title page is included in the general page numbering, but the page number is not indicated on the title page. Digital material should be presented in the

form of tables. The table should be placed in the report immediately after the text in which it is mentioned for the first time, or on the next page. All tables provided must have links in the text of the report. Tables should be numbered in Arabic numerals and sequentially numbered throughout the text of the report. The number should be placed above the table on the left without a paragraph indent after the word “Table”.

Contents of report sections:

Title page (Appendix 1). The report must describe the goals and objectives of the practice and provide a brief description of the place of practice (organization). The main part should contain a description of the history of the creation of the place of practice, the organizational structure of the enterprise, the competitive environment of the enterprise, the scope of activity of the practice object. The following describes the stages of work in accordance with the individual task, and provides proposals for improving and organizing the work of the enterprise. The conclusion reflects the results achieved, an analysis of the problems encountered and options for eliminating them, and one’s own assessment of the level of one’s professional training based on the results of the practice. The report should reflect the student’s opinion on the issues studied during theoretical training, their correspondence to real activities, as well as what special skills and knowledge the student acquired during practice.

Attached to the internship report:

An internship diary, certified by the internship supervisor from the host party, including a list and brief description of the daily types of work performed by the student during the internship in accordance with the internship calendar plan (Appendix 2).

Characteristics (review) of the practice manager from the receiving party.

EDUCATIONAL, METHODOLOGICAL AND INFORMATION SUPPORT OF PRACTICE

Main literature

1. Disaster Medicine [Electronic resource] / I.V. Rogozin - M.: GEOTAR-Media, 2014. – 152 p.http://www.studmedlib.ru/book/ISBN9785970429365.html

2. Emergency Medicine. Course of lectures [Electronic resource]: textbook / Levchuk I.P., Tretyakov N.V. - M.: GEOTAR-Media, 2013. – 240 p.http://www.studmedlib.ru/book/ISBN9785970424889.html

3. Life safety: Textbook / V.M. Maslova, I.V. Kokhova, V.G. Lyashko; Ed. V.M. Maslova - 3rd ed., revised. and additional - M.: University textbook: SIC INFRA-M, 2015. - 240 p.http://znanium.com/catalog/product/508589

4. Life safety [Electronic resource] / I.P. Levchuk, A.A. Burlakov - M. : GEOTAR-Media, 2014. – 114 With.http://www.studmedlib.ru/book/ISBN9785970429693.html

5. Nikonova V.S. First aid [Electronic resource]: textbook / Nikonova V.S.— Electron. text data.— Samara: REAVIZ, 2009.— 42 pp.— Access mode:http://www.iprbookshop.ru/10167.html.— EBS “IPRbooks”

additional literature

1. Palchikov A.N. Civil Defense and Emergencies [Electronic resource]: textbook, intended for bachelors and masters in the direction 151000 - Technological machines and equipment / Palchikov A.N. - Electron. text data.— Saratov: University Education, 2014.— 176 pp.— Access mode:http://www.iprbookshop.ru/19281. /

2. Sergeev V.S. Emergency situations and protection of the population [Electronic resource]: terminological dictionary/ Sergeev V.S.—Electron. text data.— Saratov: University education, 2014.—348 p.—Access mode:http://www.iprbookshop.ru/26241.

3. Yaromich I.V. Nursing and manipulation techniques [Electronic resource]: textbook / Yaromich I.V. - Electronic. text data.— Minsk: Higher School, 2014.— 528 p.— Access mode:http://www.iprbookshop.ru/35544.

4. Life safety [Electronic resource]: textbook / G.V. Tyagunov [and others].— Electron. text data.— Ekaterinburg: Ural Federal University, EBS ASV, 2016.— 236 p.http://www.iprbookshop.ru/68224.html

5. Pautkin Yu.F. First pre-hospital medical aid [Electronic resource]: textbook for foreign students / Pautkin Yu.F., Kuznetsov V.I.—Electron. text data.— M.: Peoples' Friendship University of Russia, 2013.— 164 pp.— Access mode:http://www.iprbookshop.ru/22204.html.— EBS “IPRbooks”

Electronic resources

1. World Health Organization:http://www.who.int/ru
2. "Consultant Plus" http//www.consultant.ru
3. "Garant" http//www.garant.ru
4. “Russian medicine” http//www.scsml.rssi.ru
5. www.mma.ru– official website of the Moscow Medical Academy named after. Sechenov.
6. http://fgou-vumc.ru/fgos/fgosvpo.php.– official website of VUNMC Roszdrav. 7.www.geotar.ru– official website of the publishing house “GEOTAR-Media”.

SOFTWARE AND ELECTRONIC INFORMATION RESOURCES

1. Federal electronic medical libraryhttp://feml.scsml.rssi.ru/feml/
2. Legal information systemhttp://www.consultant.ru/
3. Scientific electronic library eLIBRARY project RFBRwww.elibrary.ru
4. FEFU Scientific Libraryhttp://www.dvfu.ru/web/library/nb1

5. Microsoft Office Professional Plus 2010; an office suite that includes software for working with various types of documents (texts, spreadsheets, databases, etc.);

6. 7Zip 9.20 - a free file archiver with a high degree of data compression;

7. ABBYY FineReader 11 - a program for optical character recognition;

8. Adobe Acrobat XI Pro – a software package for creating and viewing electronic publications in PDF format;

9. ESET Endpoint Security - comprehensive protection for Windows-based workstations. Virtualization support + new technologies;

10. Google Chrome.

LOGISTICS

Name of equipped premises/premises for independent work/practice bases	List of main equipment
Accreditation and simulation class 690922, Primorsky Krai, Vladivostok, Russky Island, Saperny Peninsula, Ayaks village, 10, Building 25.1, room. **M508**	Sets of educational furniture (tables and chairs, couches), student board. Simulation equipment: Manikin for practicing nasogastric and gastric tube insertion skills Advanced simulator for bladder catheterization (men and women) Breathing and external cardiac massage phantom Manikin for resuscitation and patient care (M/F) Phantom system of breathing, external cardiac massage and defibrillation Phantom trainer for practicing practical intubation skills with a marker panel MU0002 A simulator for practicing the skills of drawing blood from veins (on phantoms with varying degrees of venous availability) MU0060 Pneumatic tire set
Audiences for independent work of students Reading rooms of the Scientific FEFU libraries with open access to the collection 690922, Primorsky Krai, Vladivostok, Russky Island, Saperny Peninsula, Ajax village, 10, Building A, level 10	Educational furniture sets (tables and chairs) Monoblock HP ProOpe 400 All-in-One 19.5 (1600x900), Core i3-4150T, 4GB DDR3-1600 (1x4GB), 1TB HDD 7200 SATA, DVD+/-RW, GigEth, Wi-Fi, BT, usb kbd/mse,Win7Pro (64-bit)+Win8.1Pro(64-bit),1-1-1 Wty Internet access speed 500 Mbit/sec. Workplaces for people with disabilities are equipped with displays and Braille printers; equipped with: portable devices for reading flat-printed texts, scanning and reading machines, video enlargers with the ability to regulate color spectrums; magnifying electronic magnifiers and ultrasonic markers
Audience for independent work of students 690922, Primorsky Krai, Vladivostok, Russky Island, Saperny Peninsula, Ayaks village, 10, Building 25.1, room. M621	Sets of educational furniture (tables and chairs), student board. Monoblock Lenovo C360G-i34164G500UDK 19.5" Intel Core i3-4160T 4GB DDR3-1600 SODIMM (1x4GB)500GB

	Windows Seven Enterprise - 17 pieces; Wired LAN network - Cisco 800 series; wireless LANs for students are provided with a system based on 802.11a/b access points /g/n 2x2 MIMO(2SS).

For persons with disabilities and disabled people, the choice of places of passage practices agrees Withrequirement their availabilityFor these students, practice is carried out taking into account the characteristics of their psychophysical development, individual capabilities and health status.

Compiled by:
Associate Professor of the Department
Clinical Medicine, Ph.D.A.Yu. Kiselev 

Agreed:

Head of OP  Shokur O.A.

Annex 1

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)

INSTITUTE OF LIFE SCIENCES AND BIOMEDICINE (SCHOOL)

Department of Pharmacy and Pharmacology

Full Name

REPORT

Educational practice

First Aid Practice

specialty 05/33/01 Pharmacy

The author of the work is student gr. WITH__
signature

"_____»_____202. Head of practice from the Institute of Housing and Mechanical Engineering of the Far Eastern Federal University.

_____

(position, academic title)

(signature) (I.O.F)

"_____»_____202

The report is protected with a rating_____

_____ _____
(signature) (I.O.F)

"_____»_____202

Vladivostok 202_

Appendix 2

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)

INSTITUTE OF LIFE SCIENCES AND BIOMEDICINE (SCHOOL)

Department of Pharmacy and Pharmacology

Full Name

DIARY

Completing educational practice
Practicesfirst aid
student_____course
_____
(Full name.)

specialty 05/33/01 Pharmacy

Place of practice_____
_____
_____
Practice time:
Start_____
ending_____
Head of practice:
from the university_____
from the enterprise_____
M.p.

Vladivostok 202_

THE FIRST DAY	
date	
day of the week	
place of work (department)	
The content of the work (process description)	
compliance with schedule	
grade	
manager's signature practices from the enterprise	

SECOND DAY	
date	
day of the week	
place of work	
content of the work (description of the process)	
compliance with schedule	
grade	
signature of the practice manager from the company	

DAY THREE	
date	
day of the week	
place of work	
content of the work (description of the process)	
compliance with schedule	
grade	
signature of the practice manager from the company	

DAY FOUR	
date	
day of the week	
place of work	
content of the work (description of the process)	
compliance with schedule	
grade	
signature of the practice manager from the company	

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution
higher education
"Far Eastern Federal University"
(FEFU)

INSTITUTE OF LIFE SCIENCES AND BIOMEDICINE (SCHOOL)

I APPROVED
Director of the Institute of Life Sciences and Biomedicine (School)

Yu.S. Khotimchenko
Full name

"06" December 2022

WORK PROGRAM FOR PRODUCTION PRACTICE Production practice.
Pharmaceutical technology practice
Specialty 05/33/01 Pharmacy
Form of preparation (full-time)
Graduate qualification: pharmacist

Vladivostok
2022

1. GOALS OF DEVELOPING PRODUCTION PRACTICES

The purpose of the internship is to consolidate and strengthen students' theoretical training, acquire practical skills and develop competencies in the field of professional activity.

2. OBJECTIVES OF PRODUCTION PRACTICE

The objectives of the practice are:

- consolidation and expansion of theoretical knowledge obtained while studying the course on the technology of extemporaneous dosage forms;
- consolidation of skills in pharmaceutical examination of recipes and requirements of medical institutions;
- consolidation of skills in the production of extemporaneous dosage forms, quality control and registration for release.

3. THE PLACE OF PRODUCTION PRACTICE IN THE STRUCTURE OF THE BRI

"Internship. Practice in Pharmaceutical Technology" is an integral part of the main professional educational program, is included in block B2 "Practice" of the curriculum and is mandatory.

4. TYPES, METHODS, PLACE AND TIME OF PRODUCTION PRACTICE

Type of practice – production.

Type of practice – "Practice in pharmaceutical technology"

Method of implementation: in-patient/on-site.

The form of practice is concentrated.

In accordance with the schedule of the educational process, practice is implemented in the 10th semester.

The place of practice is the educational laboratories of the Department of Pharmacy and Pharmacology of the Institute of Housing and Biomedicine of the Far Eastern Federal University.

5. STUDENT COMPETENCIES FORMED AS A RESULT OF INDUSTRIAL PRACTICE

As a result of the internship "Industrial practice. Practical experience in pharmaceutical technology", the student must demonstrate the following results:

General professional competencies of graduates and indicators of their achievement

Name of the category (group) of general professional competencies	Code and name of general professional competence (result of mastery)	Code and name of the competency achievement indicator
Adaptation to production conditions	OPK-3. Able to carry out professional activities taking into account specific economic, environmental, social factors within the framework of the system of	GPC-3.1 Complies with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines

	legal regulation of the sphere of circulation of medicines	GPC-3.2 Takes into account, when making management decisions, economic and social factors that influence the financial and economic activities of pharmaceutical organizations
		OPK-3.3 Performs labor actions taking into account their impact on the environment, preventing the occurrence of environmental hazards
		OPK-3.4 Determines and interprets the main environmental indicators of the state of the production environment during the production of medicines

Code and name of the competency achievement indicator	Name of the assessment indicator (results of training in the discipline)
GPC-3.1 Complies with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines	Knows the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
	Able to solve problems of professional activity in the field of drug circulation
	Knows methods of compliance with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
GPC-3.2 Takes into account, when making management decisions, economic and social factors that influence the financial and economic activities of pharmaceutical organizations	Knows the economic and social factors that influence the financial and economic activities of pharmaceutical organizations
	Able to take into account economic and social factors when making management decisions
	Knows methods of taking into account economic and social factors
OPK-3.3 Performs labor actions taking into account their impact on the environment, preventing the occurrence of environmental hazards	Knows the environmental impact of his work activities
	Able to perform work activities taking into account their impact on the environment
	Knows methods of counteracting environmental hazards
OPK – 3.4 Determines and interprets the main environmental indicators of the state of the production environment during the production of medicines	Knows the main environmental indicators of the state of the production environment during the production of medicines
	Able to identify and interpret the main environmental indicators of the state of the production environment during the production of medicines
	Knows methods for determining and interpreting the main environmental indicators of the state of the production environment during the production of medicines

Professional competencies of graduates and indicators of their achievement:

Task type	Code and name of professional competence (result of mastery)	Code and name of the competency achievement indicator

industrial	PC-2. Able to take part in the selection, justification of the optimal technological process and its implementation in the production of medicines for medical use	PC-2.1. Develops technological documentation for industrial production of medicines PC-2.2. Carries out the technological process in the industrial production of medicines PC-2.3. Monitors the technological process during the industrial production of medicines
pharmaceutical	PK-5 Capable of producing medicines and taking part in the production technology of finished medicines	PC-5.5 Conducts the selection of excipients and dosage forms taking into account the influence of biopharmaceutical factors PC-5.6 Conducts calculations of quantities of medicines and excipients for the production of all types of modern dosage forms

Code and name of the competency achievement indicator	Name of the assessment indicator (result of training by practice)
PC-2.1. Develops technological documentation for industrial production of medicines	Knows the theoretical foundations of developing technological documentation for the industrial production of medicines
	Can developtechnological documentation for industrial production of medicines
	Knows development methodstechnological documentation for industrial production of medicines
PC-2.2. Carries out the technological process in the industrial production of medicines	Knows theoretical fundamentalsconducting the technological process in the industrial production of medicines
	Can implementtechnological process in the industrial production of medicines
	Knows methodsconducting the technological process in the industrial production of medicines
PC-2.3. Monitors the technological process during the industrial production of medicines	Knows theoretical fundamentalsprocess control in the industrial production of medicines
	Can implementprocess control in the industrial production of medicines
	Knows implementation methodsprocess control in the industrial production of medicines
PC-5.5 Conducts the selection of excipients and dosage forms taking into account the influence of biopharmaceutical factors	Knows the theoretical basis for selecting excipients of dosage forms, taking into account the influence of biopharmaceutical factors Able to select excipients of dosage forms taking into account the influence of biopharmaceutical factors Knows methods for selecting excipients of dosage forms, taking into account the influence of biopharmaceutical factors
PC-5.6 Conducts calculations of quantities of medicines and excipients for the production of all types of modern dosage forms	Knows the theoretical basis for calculating the quantities of drugs and excipients for the production of all types of modern dosage forms Able to carry out calculations of the quantities of medicines and excipients for the production of all types of modern dosage forms.

	Knows methods for calculating the quantities of medicines and excipients for the production of all types of modern dosage forms.

6. STRUCTURE AND CONTENT OF PRODUCTION PRACTICE

The total labor intensity of industrial practice is 3 credit units, 108 hours.

Types of jobs	Total hours
Practical work, including:	60
Manufacturing of solid dosage forms	10
Production of liquid dosage forms	10
Production of soft dosage forms	20
Production of sterile dosage forms	20
Independent work (SWS), including:	48
Diary design	24
Preparation for practical work	24
Certification (test with assessment)	2
Total labor intensity (hour)	108

Contents of practice.

No.	Sections of practice	Section Contents	Labor intensity(in hours)	Form currentcontrol
1	Adaptation and production	Instruction on safety precautions, compliance with sanitary and hygienic rules and pharmaceutical procedures in the workplace.	6	Examinationpractice diary
2	Production and activity	Productionpowder manufacturing activities	12	Examinationpractice diary
		Production activities for the production of aqueous and non-aqueous solutions	12	Examinationpractice diary
		Production activities for the production of colloidal solutions and IUD solutions	6	Examinationpractice diary
		Productionactivities for the production of suspensions and emulsions	12	Examinationpractice diary
		Production activities for the production of complex mixtures	6	Examinationpractice diary
		Production activities for the production of aqueous extracts (infusions and decoctions)	12	Examinationpractice diary

		Production activities for the production of ointments	6	Examinationpractic e diary
		Productionactivities for the production of suppositories	6	Examinationpractic e diary
		Productionactivities for the production of solutions for injections and infusions	6	Examinationpractic e diary
		Production activities for the production of ophthalmic dosage forms	6	Examinationpractic e diary
		Production activities for the production of dosage forms with antibiotics	6	Examinationpractic e diary
		Production activities for the production of dosage forms for children under 1 year of age and newborns	6	Examinationpractic e diary
		Productionactivities for the production of in-pharmacy preparations	6	Examinationpractic e diary
3	Final	Test		
		Total:	108	

7. EDUCATIONAL AND METHODOLOGICAL SUPPORT FOR STUDENTS' INDEPENDENT WORK IN PRACTICE

Student independent work (SWS) is one of the forms of practical training and is organized for the purpose of:

- systematization and consolidation of the acquired theoretical knowledge and practical skills of students;
- deepening and expanding theoretical knowledge;
- developing the ability to work with various types of information, the ability to use regulatory, legal, reference documentation and special literature;
- development of cognitive abilities of students
- formation of such personality qualities as responsibility and organization, independence of thinking, ability for self-development, self-improvement and self-realization.

Educational and methodological support for students' independent work on research work are:

- educational literature on previously mastered specialized disciplines;

- regulatory documents regulating the activities of the enterprise (organization) where the student is undergoing practical training;
- methodological developments for students that determine the order and content of practice;

SRS can be defined as purposeful, internally motivated, structured by the subject himself and adjusted by him in terms of process and result, independent activity.

There are five levels of independent work:

1. The first level is the literal and transformative reproduction of information.
2. The second level is independent work based on the model.
3. Third – reconstructive-independent work
4. The fourth is heuristic independent work.
5. Fifth – creative (research) independent work.

To effectively carry out independent work, it is necessary to master educational strategies - a stable set of actions, purposefully organized by the subject to solve various educational tasks.

8. CERTIFICATION FORMS (BASED ON PRACTICE)

Form of control based on the results of practice "Industrial practice. Practical experience in pharmaceutical technology" – test with assessment.

Typical tasks for assessing knowledge, skills, abilities and experience

During the internship, the student must complete an individual task to study individual areas of work or activities of the organization, solve specific problems in the interests of the practice base and FEFU.

It is necessary to produce a medicine, observing the requirements of the sanitary regime, and read out the data on the label and the front side of the PPK for recording.

For situation 1
Recipe: Dimedroli 0.015
Coffeini 0.02
Sacchari albi 0.2 Misce fiat pulvis Da tales doses N.30
Signa. 1 time each. 3 times a day
Reverse side of the PPK
Calculation of the mass of ingredients for all doses:
Diphenhydramine $0.015 \times 30 = 0.45$

Caffeine 0.02 × 30 = 0.6

Sugar 0.2 ×30 = 6.0

Calculation of the mass of one dose of powder (weighed):

Weight1: 0.015 + 0.02 + 0.2 = 0.235

Self-monitoring of calculations: o

total mass of powders 6.0 + 0.6 + 0.45 = 7.05

Weight2: 7.05:30 = 0.235 Therefore: Weight1 = Weight2

Calculation of permissible deviations according to project No. 751n: 0.235 ± 10% [0.211; 0.258]

Front side of PPK Date__PPK to recipe No. 1

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Signatures:

Made_____

For situation 2

Rp.: Infusi radicidus Althaeae ex 5.0 - 100 ml Natrii hydrocarbonatis 2.0

Misce. Yes. Signa: 1 tablespoon 3 times a day.

Reverse side of the PPK

Determination of total volume: Vtotal = 100 ml

Calculations of the amount of ingredients: M dry marshmallow root extract (1:1) = 5.0 V solution NaHCO3 5% (1:20) = 2.0 × 20 = 40 ml

EC of dry marshmallow root extract = 0.61 ml/g Gain = M × EC = 5 × 0.61 = 3.05 ml

Permissible deviations according to project No. 751n: ± 3% 3 – 100 X – 100 X = 3 ml 3 ml < 3.05 ml therefore, we take into account the increase in volume

VH2O = 100 ml - 40 ml – 3.05 = 56.95 ml ≈ 57 ml

Vtotal = 100 ml ± 3% [97; 103]

Front side of PPK Date__

PPK to recipe No. 2

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Signatures:

Made_____

For situation 3

Rp.: Acidi salicylici 0.1 Vaselini 10.0

MDS Apply to skin

Reverse side of the PPK

The recipe is not standardized. Total weight of the ointment: M total. = 10.1 M (salicylic acid) = 0.1 M (petroleum jelly) = 10.0% solids = 0.1 × 100 / 10.1 = 0.99% 0.99% < 5% therefore

we use an auxiliary liquid, grinding is carried out with vaseline oil (½ by weight of the drug)

M vaseline oil = 0.1: 2 = 0.05 (gtt. III) 0.1 - 2 drops; 0.05 - X X = 1 drop

Calculation of permissible deviations according to project No. 751n: 10.1 ± 8% [9.29 ; 10.90]

Front side of PPK Date__PPK for recipe No. 3

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Signatures:

Made_____

For situation 4

Rp: Acidi ascorbinici 0.02 Kalii iodidi 0.1

Aquae purificatae 10 ml

MDS 2 drops 3 times a day in both eyes

Reverse side of the PPK The copybook is not standardized

Determination of osmotic concentration of drugs by sodium chloride:

M sodium chloride = 0.009 x 10 – (0.02 × 0.18 + 0.1 × 0.35) = 0.09 – 0.0386 = 0.0514

Conclusion: the solution is hypoosmotic M sodium chloride = 0.0514 ≈ 0.05 Vtot. = 10 ml

Calculation of concentrated solutions and purified water: Ascorbic acid solution (1: 50) --- 1 ml (0.02 × 50)

Potassium iodide solution (1:5) --- 0.5 ml (0.1×5)

Sodium chloride solution (1:10) --- 0.5 ml (0.05×10)

Purified water (VH2O): 10 ml - (1 ml + 0.5 ml + 0.5 ml) = 8 ml

Calculation of permissible deviations according to project No. 751n: 10 ml ± 10% [9; eleven]

Front side of PPK Date__PPK for recipe No. 4

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Signatures:

Made_____

For situation 5

Rp.: Coffeini-natrii benzoatis 0.1 Natrii tetraboratis 0.22

Calcii gluconatis 0.15

MfpDtd N

S.: 1 powder 3 times a day

Reverse side of the PPK

Calculation of the mass of ingredients for all doses of Caffeine sodium benzoate 0.1 × 6 = 0.6

Sodium tetraborate 0.22 × 6 = 1.32

Calcium gluconate 0.15 × 6 = 0.9 Ethyl alcohol 95% - 6 drops.

Calculation of the mass of one dose of powder (weighing) Weighing1: 0.1 + 0.22 + 0.15 = 0.47

Self-control of calculations: total mass of powders 0.6 + 1.32 + 0.9 = 2.82

Weight2: 2.82:6 = 0.47 Therefore: Weight1 = Weight2

Calculation of permissible deviations according to project No. 751n: 0.47 ± 5% [0.446 ; 0.493]

Front side of PPK Date__PPK for recipe No. 5

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_____
_____
Signatures:
Made_____

For situation 6
Rp.: Infusi herbae Leonuri 200 ml Magnesii sulfatis 5.0
MDS 1 tablespoon 3 times a day
Reverse side of the PPK
Determination of total volume: Vtotal = 200 ml
Calculations of the amount of ingredients: the concentration of motherwort infusion is not indicated in the recipe, we prepare it in the ratio (1:10), in accordance with the State Fund, the mass of motherwort herb M is empty. = 200 : 10 = 20.0
V ex. empty Jew. (1:2) = 20.0 × 2 = 40 ml
V conc. p-ra magnesium sulfate 20% (1:5) = 5.0 × 5 = 25 ml VH2O = 200 ml - (40 ml + 25 ml) = 135 ml
Calculation of permissible deviations according to project No. 751n: 200 ml ± 2% [196; 204]
Front side of PPK Date__PPK for recipe No. 6
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Signatures:
Made_____

For situation 7
Rp.: Resorcini 0.2
Sulfuris praecipitati 1.5
Vaselini 20.0
Misce fiat unguentum. Signa. Lubricate the ear
Reverse side of the PPK The copybook is not standardized

Total mass of ointment: 21.7 M (resorcinol) = 0.2 M (precipitated sulfur) = 1.5 M (vaseline) = 20.0% solid phase: (0.2+1.5) – 21.7 X – 100 X =7.8% 7.8% > 5% therefore, we use part of the base for grinding.

Grinding bases: 1.7:2 = 0.85

Weight of ointment: 0.2+1.5+20.0 = 21.7

Calculation of permissible deviations according to project No. 751n: 21.7 ± 7% [20.18; 23.21]

Front side of PPK Date__PPK for recipe No. 7

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Signatures:

Made_____

For situation 8

Rp.: Infusi herbae Leonuri 180 ml Metamizoli natrii (Analgini) 1.0

MDS 1 tablespoon 3 times a day

Reverse side of the PPK

Determination of total volume Vtotal = 180 ml

Calculations of the amount of ingredients: the concentration of motherwort infusion is not indicated in the recipe, we prepare it in the ratio (1:10), in accordance with the State Fund, the mass of motherwort herb M is empty. = 180 : 10 =18.0

V ex. empty Jew. (1:2) = 18.0 × 2 = 36 ml M analgin = 1.0

Gain = M × KUO = 1 × 0.68 = 0.68 ml

Permissible deviations according to project No. 751n: ± 2% 2 – 100 X – 180 X = 3.6 ml 3.6 ml > 0.68 ml therefore, we do not take into account the increase in volume

VH2O = 180 ml – 36 ml = 144 ml Vtotal = 180 ml ± 2% [176.4; 183.6]

Front side of PPK Date__PPK for recipe No. 8

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Signatures:

Made_____

For situation 9

Rp.: Riboflavini 0.002

Acidi ascorbinici 0.03

Solutionis Acidi borici 2% 10 ml

MDS 2 drops 3 times a day in both eyes

Reverse side of the PPK The copybook is not standardized

Determination of the osmotic concentration of a drug by sodium chloride: M sodium chloride = 0.009 x 10 – (0.03 × 0.18 + 0.2 × 0.35) = 0.09 – 0.0754

The osmotic concentration range is 0.09 ± 0.02 (from 0.07 to 0.11). Conclusion: the solution is isosmotic Vtotal. = 10 ml

Calculation of concentrated solutions and purified water:

A solution of ascorbic acid (1: 10) in a solution of riboflavin (1:5000) --- 0.3 ml (0.03 x 10)

A solution of boric acid (1: 25) in a solution of riboflavin (1:5000) 5 ml (0.2 x 25)

Riboflavin solution (1:5000) 4.7 ml (10 ml – 0.3 ml - 5 ml)

Calculation of permissible deviations according to project No. 751n: 10 ml ± 10% [9; eleven]

Front side of PPK Date__

PPK for recipe No. 9

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_____

Signatures:

Made_____

For situation 10

Rp.: Infusi rhizomatae cum radicibus Valerianae ex 3.0 - 100 ml

Kalii bromidi 3.0

Coffeini-natrii benzoatis 0.4

MDS 1 tablespoon 3 times a day

Reverse side of the PPK

Vtotal = 100 ml Calculation of the amount of ingredients:

V liquid extract - valerian concentrate (1:2) = 3.0 × 2 = 6 ml V conc. potassium bromide solution 20% (1:5) 3.0 × 5 = 15 ml

V conc. caffeine sodium benzoate solution 20% (1:5) = 0.4 × 5 = 2 ml

VH2O = 100 ml - (6 ml + 15 ml + 2 ml) = 77 ml

Calculation of permissible deviations according to project No. 751n: 100 ml ± 3% [97; 103]

Front side of PPK Date__PPK for recipe No. 10

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Signatures:

Made_____

Typical test questions for preparing to defend your practice report:

1. How are powders classified according to different criteria?
2. Describe the stages of powder production according to general rules.
3. What are the features of making powders with dusting, coloring, difficult to grind medicinal substances, plant extracts and liquids?
4. What are triturations? How are they used in powder technology?
5. Describe the rules for preparing solutions of easily and poorly soluble medicinal substances. What techniques are used to speed up dissolution?
6. How are solutions with auxiliary substances and solutions of strong oxidizing agents made?
7. How are standard pharmacopoeial solutions diluted depending on the name used in the recipe?
8. Describe the rules for making non-aqueous solutions.
9. What is the difference between IUD solutions and colloidal solutions from true solutions?
10. Describe the features of making IUD solutions and colloidal solutions.
11. Give a classification of suspensions.

12. Describe suspensions of hydrophilic and hydrophobic substances.

13. Describe the preparation of seed and oil emulsions. How are they different from each other?

14. Describe the rules for making mixtures using concentrates and powdered medicinal substances.

15. What are the features of making drops for internal use,representing aqueous solutions of drugs and solutions of drugs in a mixture of alcohol-containing ingredients.

16. How are infusions obtained from medicinal plant materials (according to general rules)?

17. How to prepare aqueous extracts from medicinal plant materials, containing essential oils, glycosides, alkaloids, tannins, anthraglycosides, saponins, mucous polysaccharides?

18. What are the features of making infusions using extracts?concentrates?

19. Describe the rules for making liniments depending on the type of dispersed systems.

20. What rules are followed in the manufacture of homogeneous, emulsion, suspension and combination ointments?

21. Describe the production of suppositories by hand shaping.

22. Describe the production of suppositories by pouring into molds.

23. How are thermostable injection solutions made without stabilizers?

24. How are injection solutions that cannot withstand heat sterilization made?

25. Describe stabilization mechanism, indicate the range of solutions stabilized by acids, alkalis, antioxidants, complex stabilizers.

26. Give the features of calculations for the production of isotonic solutions.

27. Describe the technology of plasma-substituting infusion solutions.

28. Describe the rules for making eye drops from powdered medicinal substances and eye drop concentrates.

29. What are the features of making eye ointments?

30. What are the features of the technology of dosage forms with antibiotics?

31. Describe requirements for the manufacture of dosage forms for newborns and children under 1 year.

Grading Criteria to a student taking an internship test	**Requirements for formed competencies**

"Great"	is awarded if the student answers the questions asked exhaustively, consistent, competent, able to generalize material and theoretically substantiate the technological features of drugs.
"Fine"	is given if the student answers the questions posed sufficiently fully, without significant inaccuracies, but there are minor comments on the theoretical justification of the technological process.
"satisfactorily"	It is given if the student does not know certain details, makes inaccuracies, or does not formulate correctly enough. It violates the technological sequence, which does not affect the quality of medicinal products.
"not satisfactory"	is given if the student makes significant errors in the presentation of the technological process or does not answer the questions asked.

Methodological materials defining the assessment procedure

To receive a positive assessment based on the results of the internship, the student must fully complete the internship program, timely complete and submit all necessary reporting documents to the Department.

The results of the work done should be reflected in the practice report. The report is checked and signed by the head of practice from the enterprise, then submitted to the head of practice from the university in the last week of practice on time. If the place of internship is the FEFU Department, the report is prepared by the student and submitted to the head of the internship from the university.

The final grade (credit) for the internship is given on the basis of all submitted documents, which reveal the regularity of visiting the place of practice, the thoroughness of the report, the student's initiative shown during the internship and the ability for independent professional activity.

The results of the internship are assessed according to the following criteria:

- level of mastery of competencies;
- recall of the practice manager from the organization;
- practical results of the work carried out and their significance;
- the quality of the student's answers to questions on the substance of the report.

Based on the results of the practice and the defense of students' reports, the teacher - the head of the practice draws up a summary report.

A credit for practice is equivalent to grades for theoretical training and is taken into account when summing up the overall performance of students. The grade received by students on the test is taken into account when assigning a scholarship.

Students who fail to complete the program without a good reason or receive a negative grade may be expelled from a higher education institution as having academic debt in the manner prescribed by the university charter.

Recommendations for report content

In the introduction, it is necessary to describe the goals and objectives of the practice, give a brief description of the place of practice (organization), and formulate the mission of the enterprise.

The main part should contain a description of the history of the creation of the place of practice, the organizational structure of the enterprise, the competitive environment of the enterprise, the scope of activity of the practice object.

The following describes the stages of work in accordance with the individual task, and provides proposals for improving and organizing the work of the enterprise.

The conclusion reflects the results achieved, an analysis of the problems encountered and options for eliminating them, and one's own assessment of the level of one's professional training based on the results of the practice. The report should reflect the student's opinion on the issues studied during theoretical training, their correspondence to real activities, as well as what special skills and knowledge the student acquired during practice.

Attached to the internship report:

- feedback from the internship supervisor from the host: characteristics of the trainee's attitude to work, discipline, availability of the necessary work skills, demonstrated business and moral qualities, overall assessment of the trainee's entire work during the internship period, in free form (if the place of internship is FEFU, feedback from the supervisor practice is not formalized);
- an internship diary, certified by the internship supervisor from the host party, including a list and brief description of the daily types of work performed by the student during the internship in accordance with the internship calendar plan (Appendix 3).

9. EDUCATIONAL, METHODOLOGICAL AND INFORMATION SUPPORT OF PRODUCTION PRACTICE

Main literature

1. Pharmaceutical technology. Technology of dosage forms [Electronic resource]: textbook / I. I. Krasnyuk, G. V. Mikhailova, T. V. Denisova, V. I. Sklyarenko; Ed. I. I. Krasnyuk, G. V. Mikhailova. - M.: GEOTAR-Media, 2013. - http://www.studentlibrary.ru/book/ISBN9785970426944.html

2. Pharmaceutical technology. Technology of dosage forms. Guide to practical classes [Electronic resource]: textbook / Krasnyuk I.I., Mikhailova G.V. - M.: GEOTAR-Media, 2013. -http://www.studentlibrary.ru/book/ISBN9785970425299.html

3. Pharmaceutical technology. Manufacturing of medicinal products [Electronic resource] / A.S. Gavrilov - M.: GEOTAR-Media, 2016. - http://www.studentlibrary.ru/book/ISBN9785970436905.html

additional literature

1. Pharmaceutical technology. Manufacturing of medicines [Electronic resource]: textbook. manual / Loyd W. Allen, A. S. Gavrilov - M.: GEOTAR-Media, 2014. - http://www.studentlibrary.ru/book/ISBN9785970427811.html

2. Pharmaceutical biotechnology [Electronic resource] / Orekhov S.N. - M.: GEOTAR-Media, 2013. -http://www.studentlibrary.ru/book/ISBN9785970424995.html

3. Pletnev, M.Yu. Emulsion technology. Hydrophilic-lipophilic balance and phase reversal [Electronic resource]: textbook / M.Yu. Pletnev. — Electron. Dan.

— St. Petersburg: Lan, 2018. - 100 p. - Access mode:https://e.lanbook.com/book/106872

4. Chuchalin V.S. Drug delivery systems [Electronic resource]: textbook/ Chuchalin V.S., Khoruzhaya T.G., Khlusov I.A.—Electron. text data.

— Tomsk: Tomsk Polytechnic University, 2014.— 112 pp.— Access mode:http://www.iprbookshop.ru/34713.html

Electronic resources and software

1. State pharmacopoeia XIV publications V three volumes, 2018 G.http://femb.ru/feml
2. Federal Electronic Medical Library http://feml.scsml.rssi.ru/feml/
3. Legal information systemhttp://www.consultant.ru/
4. Scientific electronic library eLIBRARY project RFBRwww.elibrary.ru
5. FEFU Scientific Library http://www.dvfu.ru/web/library/nb1
6. Electronic library system Znanium.com
7. List of information technologies and software

8. Microsoft Office Professional Plus 2010; an office suite that includes software for working with various types of documents (texts, spreadsheets, databases, etc.);

9. 7Zip 9.20 - a free file archiver with a high degree of data compression;

10. ABBYY FineReader 11 - a program for optical character recognition;

11. Adobe Acrobat XI Pro – a software package for creating and viewing electronic publications in PDF format;

12. Adobe Photoshop CS6;

13. ESET Endpoint Security - comprehensive protection for Windows-based workstations. Virtualization support + new technologies;

14. Google Chrome;

15. LabSolutions LC/GC Workstation software, software for controlling the Shimadzu chromatographic system and processing the results obtained, including a software module for calculating the molecular weight characteristics of polymers;

16. Multifunctional UV Control Software, software for controlling the Shimadzu spectrophotometer and processing the results obtained;

17. LabSolutions IR software for controlling the Fourier transform infrared spectrometer and processing the results obtained, in addition to standard functions, allows for measurements in photometric and kinetic modes. Includes a unique algorithm for searching spectra, as well as a library containing about 12,000 spectra, which greatly facilitates the task of identifying substances.

10. LOGISTICS AND TECHNICAL SUPPORT OF PRODUCTION PRACTICES

To conduct research related to the implementation of practical assignments, as well as to organize independent work, students have access to the following laboratory equipment and specialized rooms that comply with current sanitary and fire safety standards, as well as safety requirements for educational, scientific and production work:

Name of equipped premises and rooms for independent work	List of main equipment

Auditorium for conducting lectures, seminars and laboratory work 690922, Primorsky Territory, Vladivostok, Russky Island, Saperny Peninsula, Ajax village, 10, Building 25.1, room. M403	Sets of laboratory furniture (tables and chairs), student board. Multimedia complex: Monoblock Lenovo C360G-i34164G500UDK; Screenprojection Projecta Elpro Electrol, 300x173 cm; Multimedia projector, Mitsubishi FD630U, 4000 ANSI Lumen, 1920x1080; Built-in interface with automatic cable retraction system TLS TAM 201 Stan; Document camera Avervision CP355AF; Microphone lavalier UHF radio system Sennheiser EW 122 G3 consisting of a wireless microphone and receiver; Videoconferencing codec LifeSizeExpress 220-Codeconly-Non-AES; Network video camera Multipix MP-HD718; Two 47" LCD panels, Full HD, LG M4716CCBA; Audio switching and sound amplification subsystem; centralized uninterruptible power supply. The auditorium is also equipped as an open-type pharmacy: counters, display cases (cabinets, racks with samples of pharmaceutical products), and a cash register.
Auditorium for conducting lectures, seminars and laboratory work 690922, Primorsky Territory, Vladivostok, Russky Island, Saperny Peninsula, Ajax village, 10, Building 25.1, room. M420	Sets of educational furniture (tables and chairs), student board. Multimedia complex: Lenovo Monoblock C360G-i34164G500UDK; Projection screen Projecta Elpro Electrol, 300x173 cm; Multimedia projector, Mitsubishi FD630U, 4000 ANSI Lumen, 1920x1080; Built-in interface with automatic cable retraction system TLS TAM 201 Stan; Document camera Avervision CP355AF; Microphone lavalier UHF radio system Sennheiser EW 122 G3 consisting of a wireless microphone and receiver; Videoconferencing codec LifeSizeExpress 220-Codeconly-Non-AES; Network video camera Multipix MP-

	HD718; Two 47" LCD panels, Full HD, LG M4716CCBA; Audio switching and sound amplification subsystem; centralized uninterruptible power supply Laboratory equipment: Aquadistiller PE-2205 (5l/h); analytical balances; laboratory scales Vibra SJ-6200CE (NPV=6200 g/0.1 g); moisture meter AGS100; two-beam spectrophotometer UV-1800 manufactured by Shimadzu; magnetic stirrer PE-6100 (10 pcs); magnetic stirrer PE-6110 M with heating (5 pcs); electric heating plate; infrared spectrophotometer IRAffinity-1S With Fouriertransformation; liquid chromatograph LC-20 Prominence with spectrophotometric and refractometric detector; laboratory centrifuge PE-6926 with a 10×5 ml rotor; a set of automatic Ecochem dispensers, a water bath, a drying cabinet, a fume hood, a water purification system. Sets of chemical reagents and laboratory glassware.
Audiences for independent work of students Reading rooms of the FEFU Scientific Library with open access to the collection (building A - level 10)	Educational furniture sets (tables and chairs) Monoblock HP ProOpe 400 All-in-One 19.5 (1600x900), Core i3-4150T, 4GB DDR3-1600 (1x4GB), 1TB HDD 7200 SATA, DVD+/-RW,GigEth,Wi-Fi,VT,usb kbd/mse,Win7Pro (64-bit)+Win8.1Pro(64-bit),1-1-1 Wty Internet access speed 500 Mbit/sec. Workplaces for people with disabilities are equipped with displays and Braille printers; equipped with: portable devices for reading flat-printed texts, scanning and reading machines, video enlargers with the ability to regulate color spectrums; magnifying electronic magnifiers and ultrasonic markers
Audience for independent work of students 690922, Primorsky Territory, Vladivostok, Russky Island, Saperny Peninsula, Ajax village, 10, Building 25.1, room. M621	Sets of educational furniture (tables and chairs), student board. Monoblock Lenovo C360G-i34164G500UDK 19.5" Intel Core i3-4160T 4GB DDR3-1600 SODIMM (1x4GB)500GB Windows Seven Enterprise - 17 pieces; Wired LAN network - Cisco 800 series; wireless LANs for students are provided with a system based on 802.11a/b access points /g/n 2x2 MIMO(2SS).

Auditorium for conducting seminar-type classes and laboratory work 690922, Primorsky Territory, Vladivostok, Russky Island, Saperny Peninsula, Ajax village, 10, Building 25.1, room. M409	Sets of laboratory furniture (tables, chairs, cabinets for storing equipment, reagents, pharmaceutical and laboratory glassware), student board. Laboratory equipment: water distiller, water bath, laboratory scales, pharmaceutical turntables, dispenser sets, laboratory stirrers, pH meter, suppository form, filtration unit. Sets of pharmaceutical substances, pharmaceutical and chemical glassware
Auditorium for conducting seminar-type classes and laboratory work 690922, Primorsky Territory, Vladivostok, Russky Island, Saperny Peninsula, Ajax village, 10, Building L, room. L406	Sets of laboratory furniture (tables, chairs, cabinets for storing equipment, reagents, pharmaceutical and laboratory glassware), student board. Laboratory equipment: water distiller, water bath, laboratory scales, pharmaceutical turntables, dispenser sets, laboratory stirrers, apparatus for producing pharmaceuticals UNIQ -2 with replaceable attachments: granulator, coating kettle, mixer; Laboratory scales AGN100; Magnetic stirrer PE-6100 (5 pcs); Magnetic stirrer PE-6110 M with heating (2 pcs); Electric heating plate; UNIQ-7 rotary tableting press for 7 punches; mold for forming suppositories with 100 cells; device for determining the disintegration of tablets. Sets of pharmaceutical substances, pharmaceutical and chemical glassware

Appraisal Fund

A list of competencies that students must master as a result of mastering the educational program, a description of indicators and criteria for their evaluation at various stages of formation, a rating scale.

During certification, the level of development of the following competencies is assessed:

Code and formulation of competencies	**Stages of developing competencies**		**Criteria**	**Indicators**
OPK-3. Able to carry out professional activities taking into account specific economic, environmental, social factors within the framework of the system of legal regulation of the sphere of circulation	Knows (threshold level)	norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines	Great	Knows perfectly the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
			Fine	Knows sufficiently the norms and rules

of medicines				established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
			will satisfyreally	Partially knows the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
			unsatisfactoryspecifically	Does not know the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
	Can (advanced level)	solve problems of professional activity in the field of drug circulation	Great	Perfectly knows how to solve problems of professional activity in the field of drug circulation
			Fine	Sufficiently able to solve problems of professional activity in the field of drug circulation
			will satisfyreally	Partially able to solve problems of professional activity in the field of drug circulation
			unsatisfactoryspecifically	Does not know how to solve professional problems in the field of drug circulation
	Proficient (high level)	methods of compliance with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines	Great	He is fluent in methods of compliance with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
			Fine	Has sufficient knowledge of methods of compliance with the norms and rules

				established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
			will satisfyreally	Partially knows how to comply with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
			unsatisfactoryspecifically	Does not know how to comply with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
PC-2. Able to take part in the selection, justification of the optimal technological process and its implementation in the production of medicines for medical use	Knows (threshold level)	theoretical basisprocess control in the industrial production of medicines	Great	Knows perfectly the theoretical basis for the development of technological documentation for the industrial production of medicines; maintaining the technological process in the industrial production of medicines; has deep knowledge of process control in the industrial production of medicines
			Fine	Sufficiently knows the theoretical basis for the development of technological documentation for the industrial production of medicines; maintaining the technological process in the industrial production of medicines; has deep knowledge of process control in the industrial

				production of medicines
			Satisfactorily	Partiallyknows the theoretical basis for the development of technological documentation for the industrial production of medicines; maintaining the technological process in the industrial production of medicines; has deep knowledge of process control in the industrial production of medicines
			Unsatisfactory	Notknows the theoretical basis for the development of technological documentation for the industrial production of medicines; maintaining the technological process in the industrial production of medicines; has deep knowledge of process control in the industrial production of medicines
	Can (advanced)	realizeprocess control in the industrial production of medicines	Great	Perfectly able to developtechnological documentation for industrial production of medicines; realizetechnological process in the industrial production of medicines;process control in the industrial production of medicines
			Fine	To a sufficient extentknows how to developtechnological documentation for industrial production of medicines; realizetechnological process in the industrial production of medicines;process control in the industrial

				production of medicines
			Satisfactorily	Partiallyknows how to developtechnological documentation for industrial production of medicines; realizetechnological process in the industrial production of medicines;process control in the industrial production of medicines
			Unsatisfactory	Notknows how to developtechnological documentation for industrial production of medicines; realizetechnological process in the industrial production of medicines;process control in the industrial production of medicines
	Proficient (high level)	implementation methodsprocess control in the industrial production of medicines	Great	Fluent in development methodstechnological documentation for industrial production of medicines; methodsconducting the technological process in the industrial production of medicines; implementation methodsprocess control in the industrial production of medicines
			Fine	To a sufficient extentknows development methodstechnological documentation for industrial production of medicines; methodsconducting the technological process in the industrial production of medicines; implementation methodsprocess control in the industrial production of medicines

			Satisfactorily	Partiallyknows development methodstechnological documentation for industrial production of medicines; methodsconducting the technological process in the industrial production of medicines; implementation methodsprocess control in the industrial production of medicines
			Unsatisfactory	Notknows development methodstechnological documentation for industrial production of medicines; methodsconducting the technological process in the industrial production of medicines; implementation methodsprocess control in the industrial production of medicines

Assessment criteria for certification in industrial practice

In total, you can get a maximum of 100 points in the practice test.

Points for work during practice are distributed as follows:

36 points - attending an internship. If there are no gaps, 36 points are given, for each gap 6 points are deducted. If the practice is missed for a good reason (due to illness, documented, official release of the dean's office to participate in various events), then the point is not deducted.

36 points – filling out a diary and reporting documentation.

0-28 points – defense of a practice report in the form of a presentation.

Scale of correspondence of rating points to the five-point scale:

1) An "excellent" grade (91–100 points) is given to a student who, when defending a report, demonstrates deep knowledge of scientific and technical documentation. The practice diary and reporting documents are prepared by the student in accordance with the

requirements of this work program.

2) A “good” grade (77–90 points) is given to a student who, when defending a report, demonstrates deep knowledge of scientific and technical documentation. However, there were some mistakes in the answer, which were corrected by the student with the help of the teacher. The practice diary and reporting documents are prepared by the student in accordance with the requirements of this work program.

3) A “satisfactory” grade (61–76 points) is given to a student who, when defending a report, demonstrates insufficient knowledge of scientific and technical documentation and makes mistakes. The practice diary and reporting documents are prepared by the student in accordance with the requirements of this work program.

4) A grade of “unsatisfactory” (less than 61 points) is given to a student who, when defending a report on practice, gives an incomplete answer, which represents scattered knowledge on the topic of the question with significant errors. The diary and reporting documents are partially completed.

For persons with disabilities and people with disabilities, the choice of places of practice is consistent with the requirement of their accessibility for these students and the practice is carried out taking into account the characteristics of their psychophysical development, individual capabilities and health status.

Compiled by:
Department Assistant
pharmacy and pharmacology  Pak P.A.

AGREED

Head of OP  Shokur O.A.

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)
Institute of Life Sciences and Biomedicine (School)

Department of Pharmacy and Pharmacology

Full Name

REPORT

Internship. Pharmaceutical technology practice

specialty 05/33/01 Pharmacy

The author of the work is student gr. WITH
signature
" » 202_ Head of practice from
INZHBM FEFU.

_____

(position, academic title)

_____

(signature) (I.O.F) _____
" » 202_

The report is protected with a rating

_____ _____
(signature) (I.O.F)
"_ » 202_

Vladivostok
202_

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)
Institute of Life Sciences and Biomedicine (School)

Department of Pharmacy and Pharmacology

Full Name

DIARY

undergoing practical training
Internship. Pharmaceutical technology practice
student_____course
_____
(Full name.)

specialty 05/33/01 Pharmacy

Place of practice_____
_____

Practice time:
Start
_____
ending
_____

Head of practice:
from the university
_____
from the enterprise
_____

M.p.

Vladivostok
20__g

THE FIRST DAY	
date	
day of the week	
place of work (department)	
content of the work (description of the process)	
compliance with schedule	
grade	
signature of the practice manager from enterprises	

SECOND DAY	
date	
day of the week	
place of work	
content of the work (description of the process)	
compliance with schedule	
grade	
signature of the practice manager from the company	

DAY THREE	
date	
day of the week	
place of work	
content of the work (description of the process)	
compliance with schedule	
grade	
signature of the practice manager from the company	

DAY FOUR	
date	
day of the week	
place of work	
content of the work (description of the process)	
compliance with schedule	
grade	
signature of the practice manager from the company	

Application 1

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)

INSTITUTE OF LIFE SCIENCES AND BIOMEDICINE (SCHOOL)

Department of Pharmacy and Pharmacology

I CONFIRM:
Head of OP
_____
_____FULL NAME.
"____" _____20__

INDIVIDUAL TASK

By _____
(type of practice)

student of _____ group _____
(FULL NAMEstudent)

Educational program _____

Base (place, organization) of practice_____
_____

Duration of practice from _____20___ to _____ 20___

Generalized formulation of the task	

Task schedule

Name of tasks (activities) that make up the task	Date of completion of the task (activity)
1.	
2.	
3.	

Head of practice _____ _____
signature full name, position

Appendix 4

Internship referral form

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)

INSTITUTE OF LIFE SCIENCES AND BIOMEDICINE (SCHOOL)

Department of Pharmacy and Pharmacology

DIRECTION
for _____ practice

student of a specialty course
Last Name First Name Group _____
(Full Name)
sent to _____
name of the base organization
address _____

Order on referral to educational practice from No. 1
for _____ internship
in the field of study _____
for a period of
since _____ 20___ to _____ 20___ (continuous/discrete)

Head of Practice

M.P. _____ _____ _____
(position, academic title) (signature) (I.O.F)

Notes on completion and dates of practice

Business name	Arrival and departure notes	Signature, decryption of signature, seal
Name of the enterprise, organization in accordance with the agreement	Arrived __.__.20__	
	Dropped out on __.__.20__	

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)

INSTITUTE OF LIFE SCIENCES AND BIOMEDICINE (SCHOOL)

I APPROVED
Director of the Institute of Life Sciences and Biomedicine (School)

_____ Yu.S. Khotimchenko
Full name

"06" December 2022

WORK PROGRAM FOR PRODUCTION PRACTICE
Internship. Medicine quality control practice
05/33/01 Pharmacy
Specialization "Clinical and Experimental Pharmacy (in English)"

Vladivostok
2022

1. GOALS OF DEVELOPING PRODUCTION PRACTICES

The purpose of the internship for 5th year students of the specialty 33.05.01 Pharmacy is to consolidate and deepen the theoretical knowledge, practical skills and abilities acquired in the educational process to solve specific problems in the practical activities of a pharmacist-analyst in pharmacies, control and analytical laboratories (Centers for Certification of Medicines) , pharmaceutical warehouses and laboratories of pharmaceutical enterprises.

2. OBJECTIVES OF PRODUCTION PRACTICE

- acquisition of practical skills and abilities in the field of basic principles of pharmaceutical analysis (pharmacopoeial or express analysis) of medicines;
- strengthening students' skills in determining modern physical and physicochemical parameters of medicinal substances and their solutions in pharmaceutical analysis in accordance with regulatory documentation;
- strengthening the skills of carrying out the necessary calculations and conclusions on the compliance of medicinal products with the requirements of regulatory documentation based on the results of quality control of medicinal products;
- formation of the student's skills in professional thinking and teamwork.

3. PLACE OF PRODUCTION PRACTICE IN THE STRUCTURE OF EP

"Internship. Practice in quality control of medicines" is an integral part of the main professional educational program, is included in the mandatory part of block B2 "Practice" (index B2.O.06 (P)) and is mandatory.

4. TYPES, METHODS, PLACE AND TIME OF PRODUCTION PRACTICE

Type of practice – industrial practice.

Type of practice - Practice in quality control of medicines

Method of implementation: in-patient/on-site.

Method of implementation: concentrated.

In accordance with the schedule of the educational process, practice is implemented in semester A.

Industrial practice is carried out on the basis of pharmacies, including on the basis of prescription and production pharmacies, equipped with modern equipment (weighing instruments, equipment for processing pharmaceutical glassware and closures (washing machines, autoclaves, drying cabinets), means for carrying out quality control of drugs and means of small-scale mechanization).

For persons with disabilities and people with disabilities, the choice of places of practice is consistent with the requirement of their accessibility for these students and the practice is carried out taking into account the characteristics of their psychophysical development, individual capabilities and health status.

5. STUDENT COMPETENCIES FORMED AS A RESULT OF INDUSTRIAL PRACTICE

The internship process is aimed at developing the following competencies:

General professional competencies of graduates and indicators of their achievement

Name of the category (group) of general professional competencies	Code and name of general professional competence (result of mastery)	Code and name of the competency achievement indicator
Professional methodology	OPK-1.Able to use basic biological, physicochemical, chemical, mathematical methods for the development, research and examination of medicines, manufacturing of medicines	OPK-1.1 Applies basic biological methods of analysis for the development, research and examination of medicines and medicinal plant materials
		OPK-1.2 Applies basic physicochemical and chemical methods of analysis for the development, research and examination of medicines, medicinal plant materials and biological objects
		OPK-1.3 Applies basic methods of physical and chemical analysis in the manufacture of drugs
		OPK – 1.4 Applies mathematical methods and carries out mathematical processing of data obtained during the development of medicines, as well as research and examination of medicines, medicinal plant materials and biological objects

Code and name of the competency achievement indicator	Name of the assessment indicator (results of training in the discipline)
OPK-1.1 Applies basic biological methods of analysis for the development, research and examination of medicines and medicinal plant materials	Knows basic biological methods of analysis
	Able to apply basic biological methods of analysis for the development, research and examination of medicines and medicinal plant materials
	Proficient in analytical methods for the development, research and examination of medicines and medicinal plant materials
OPK-1.2 Applies basic physicochemical and chemical methods of analysis for the development, research and examination of medicines, medicinal plant materials and biological objects	Knows basic physicochemical and chemical methods of analysis
	Able to conduct development, research and examination of medicines, medicinal plant materials and biological objects
	Proficient in analytical methods for the development, research and examination of medicines, medicinal plant materials and biological objects
OPK-1.3 Applies basic methods of	Knows the basic methods of physical and chemical analysis

physical and chemical analysis in the manufacture of drugs	Able to analyze manufactured drugs
	Proficient in methods of physical and chemical analysis in the manufacture of medicines
OPK – 1.4 Applies mathematical methods and carries out mathematical processing of data obtained during the development of medicines, as well as research and examination of medicines, medicinal plant materials and biological objects	Knows mathematical methods
	Able to carry out mathematical processing of data obtained during the development of medicines, as well as research and examination of medicines, medicinal plant materials and biological objects
	Knows methods of mathematical data processing

Professional competencies of graduates and indicators of their achievement:

Task type	Code and name of professional competence (result of mastery)	Code and name of the competency achievement indicator
control and permitting	PC-4. Able to take part in activities to ensure the quality of medicines in industrial production	PC-4.1. Conducts sampling at various stages of the technological cycle
		PC-4.2. Develops regulatory documents to ensure the quality of medicines in industrial production
		PC-4.3. Prepares reports on activities to ensure the quality of medicines during industrial production
expert-analytical	PC-8 Able to participate in monitoring the quality, effectiveness and safety of medicines and medicinal plant materials	PC-8.1. Conducts pharmaceutical analysis of pharmaceutical substances, excipients and drugs for medical use of factory production in accordance with quality standards
		PC-8.2. Monitors the preparation of reagents and titrated solutions
		PC-8.3. Standardizes prepared titrated solutions
		PC-8.5 Informs, in the manner established by law, about the non-compliance of a medicinal product for medical use with established requirements or about the inconsistency of data on the effectiveness and safety of the medicinal product with the data on the medicinal product contained in the instructions for its use

Code and name of the competency achievement indicator	Name of the assessment indicator (result of training by practice)
PC-4.1. Conducts sampling at various stages of the technological cycle	Knows theoretical fundamentalssampling at various stages of the technological cycle
	Cancarry out sampling at various stages of the technological cycle
	Knows methodssampling at various stages of the technological cycle

PC-4.2. Develops regulatory documents to ensure the quality of medicines in industrial production	Knows the theoretical foundations of pdevelopment of regulatory documents to ensure the quality of medicines in industrial production
	Can do pdevelop regulatory documents to ensure the quality of medicines in industrial production
	Proficient in methodsdevelopment of regulatory documents to ensure the quality of medicines in industrial production
PC-4.3. Prepares reports on activities to ensure the quality of medicines during industrial production	Knows theoretical fundamentalscompiling reports on activities to ensure the quality of medicines in industrial production
	Can composereports on activities to ensure the quality of medicines in industrial production
	Knows methodscompiling reports on activities to ensure the quality of medicines in industrial production
PC-8.1. Conducts pharmaceutical analysis of pharmaceutical substances, excipients and drugs for medical use of factory production in accordance with quality standards	Knows the theoretical foundations of pharmaceutical analysis
	Can carry outpharmaceutical analysis of pharmaceutical substances, excipients and drugs for medical use of factory production in accordance with quality standards
	Proficient in pharmaceutical analysis methods
PC-8.2. Monitors the preparation of reagents and titrated solutions	Knows theoretical fundamentalspreparation of reagents and titrated solutions
	Able to controlpreparation of reagents and titrated solutions
	Knows methodscontrol over the preparation of reagents and titrated solutions
PC-8.3. Standardizes prepared titrated solutions	Knows the theoretical foundations of standardization
	Able to standardizeprepared titrated solutions
	Knows methodsstandardization of titrated solutions
PC-8.5 Informs, in the manner established by law, about the non-compliance of a medicinal product for medical use with established requirements or about the inconsistency of data on the effectiveness and safety of the medicinal product with the data on the medicinal product contained in the instructions for its use	Knows the procedure established by law for reporting non-conformity of a medicinal product Able to inform about the non-compliance of a medicinal product for medical use with established requirements or the discrepancy between the data on the effectiveness and safety of the medicinal product and the data on the medicinal product contained in the instructions for its use Knows methods of informing about the non-compliance of a medicinal product for medical use with established requirements or the discrepancy between data on the effectiveness and safety of the medicinal product and the data on the medicinal product contained in the instructions for its use

6. STRUCTURE AND CONTENT OF PRACTICE, INCLUDING PRACTICAL TRAINING

No.	Stages of practice	Types of work in practice, including practical training and independent work of students	Labor intensity (in hours)	Current control form
	1.Preparatory stage.	Acquaintance with the base of practices. Safety briefing. Familiarization with the organization of the work of the control and analytical office, the pharmacist and analyst’s desk. Study of regulatory documentation	8	Checking attendance. Instruction

				and test on safety precautions. Abstract
	2.Main stage	1. Study of methods for obtaining and analyzing purified water, water for injection 2. Analysis of drugs (substances) 3. Express analysis of liquid dosage forms 4. Express analysis of powders 5. Express analysis of soft dosage forms 6. Express analysis of solid dosage forms 7. Analysis of DF using physicochemical methods of analysis 8. Analysis of LF of industrial production 9. Preparation of a practice diary	75	Checking attendance. LF analysis protocols.
	3.Final stage	Preparation of a practice diary and practice report. Preparation for the test.	25	Diary. Student report on practice. Characteristi cs.Testing. Submitting and defending practice reports
TOTAL			108 hours	

7. EDUCATIONAL AND METHODOLOGICAL SUPPORT OF INDEPENDENT WORK OF STUDENTS IN PRODUCTION PRACTICE

General recommendations for organizing students' independent work in practice are as follows:

1) Before completing the internship, the student must study the industrial internship program, refer to the relevant regulatory materials in order to be prepared to carry out the instructions given by the internship supervisor and to resolve specific legal issues.

2) The beginning of an internship is associated, first of all, with familiarizing the student with the structure, constituent documents of pharmacy institutions, studying the functional responsibilities (job descriptions) of the employees of the pharmacies in which the internship takes place.

3) If you have any questions or need advice on completing internships and performing independent types of work, you must contact the practice managers from the pharmacy and FEFU.

During practice, each student must keep a diary, which reflects the work done.

The practice diary includes a title page, a calendar plan for the internship, a list of materials collected during the internship, information about the types of work done.

Records of the work done are entered into the practice diary daily.

Based on the results of the practice, a written report is drawn up, which is compiled individually by each student based on the materials received during the practice period.

8. CERTIFICATION FORMS (BASED ON PRACTICE)

For certification based on the results of the internship, the student must provide a report on the internship with a note from the internship supervisor from the enterprise, a diary of the internship, with a daily note from the internship supervisor from the enterprise about the completion of work on schedule.

The report is prepared in accordance with the requirements presented below.

Certification based on the results of practice is carried out in the form of testing and defending a report in the form of an interview. The form of assessment is a test with a grade.

Typical tasks for defending an internship report:

When performing certain types of practical work listed above, the student must be guided by the following tasks and brief recommendations for their implementation, namely:

- Familiarize yourself with safety precautions in a pharmacy.

- Familiarize yourself with the premises of the pharmacy and their purpose, paying attention to the prescription and production department (assistant, defector, material and other rooms). In the assistant's room, it is necessary to pay attention to the design of the bars with drugs of various groups, their storage, location on turntables, the organization of work on the manufacture of packaging, and quality control of drugs. Make a brief note on this item in your diary;

- Learn to handle, wash, dry, sterilize dishes, capping and auxiliary materials. Before performing these types of work, you must read the instructions, guidelines and orders (No. 214, 309, 751n). The diary should describe the method of processing utensils used in this pharmacy, indicate the capacity of the bottles, rods used in the pharmacy, their color, list the closure material, provide a list of devices and devices used for washing, drying, sterilization (indicating the names and types devices);

- Familiarize yourself with the devices for obtaining purified water and water for injection, the conditions for their receipt, collection, storage, and the organization of supply of purified water to workplaces. In your diary, indicate the types of apparatus and draw a diagram of the structure of one of the distillers;

- Carry out all types of quality control of medicines in accordance with regulatory documentation;

- Master the methodology for organizing quality control of medicinal substances and medicines during industrial and in-pharmacy production, storage and distribution of pharmaceutical products;

- Implement basic techniques for targeted chemical synthesis of organic medicinal substances in chemical laboratories, know the theoretical foundations of the technology for industrial production of medicinal substances;

- Determine the purity and limits of impurity content in medicines. Based on the technology for the production and purification of medicinal substances, predict the presence of foreign impurities in medicinal substances and medicinal products, be able to practically determine their presence and establish their content within the standards in accordance with the requirements of the Global Fund;

- Know the authenticity reactions of inorganic and organic medicinal substances, including synthetic and natural origin;

- Be proficient in modern chemical and physical-chemical methods. Use chromatographic, spectral and other physicochemical methods of analysis to confirm the authenticity of drugs and detect impurities.

- Prepare titrated solutions (setting the titre and calculating the correction factor).

- Conduct titrimetric analysis using various methods: precipitation, acid-base, redox, complexometric.

- Calculate the drug content in substances and medications.

- Comply with labor protection and safety regulations.

Methodological materials defining the assessment procedure.

To receive a positive assessment based on the results of the internship, the student must fully complete the internship program, timely complete and submit to the internship supervisor all the necessary reporting documents. The results of the work done should be reflected in the practice report. The report is checked and signed by the head of practice from the enterprise, then submitted to the head of practice from the university in the last week of practice on time. If the place of internship is FEFU, the report is prepared by the student and submitted to the head of the internship from the university. The final grade for the practice is given on the basis of all submitted documents, through which the regularity of visiting the place of practice, the thoroughness of the report, the student’s initiative shown during the practice and the ability for independent professional activity are revealed. The results of the internship are assessed according to the following criteria: - level of

mastery of competencies; - review of the practice manager from the organization; - practical results of the work carried out and their significance; - the quality of the student's answers to questions on the substance of the report. Based on the results of the practice and the defense of students' reports, the teacher - the head of the practice draws up a summary report. A credit for practice is equivalent to grades for theoretical training and is taken into account when summing up the overall performance of students. The grade received by students on the test is taken into account when assigning a scholarship. A student who does not complete the internship program for a valid reason will have the period of completion extended without interruption from his/her studies. In case of failure to complete the internship program, failure to submit a report on the internship, or receiving a negative review from the internship supervisor from the enterprise where the student practiced, and an unsatisfactory grade when defending the report, the student may be expelled from the university.

Diary design

The first section of the diary should contain brief information about the regulatory documentation on the organization and conduct of quality control of medicines (full names, dates of approval, characteristics and summary of the main current orders of the Ministry of Health of the Russian Federation and other documents regulating the quality control of medicines and the work of the analyst).

The second section of the diary is drawn up in the form of registration logs kept by the pharmacist-analyst. In this section, during the entire period of practice, the student records his work performed daily.

The third section of the diary should contain neatly formatted detailed reports on the analysis of 20-25 different dosage forms found in the formulation.

Record keeping form:

- date, serial number of analysis;
- object of analysis (composition of the drug in Russian and Latin);
- description of appearance;
- structural formulas, chemical names, description of the physical properties that are part of the drug preparation;
- authenticity tests (brief recording of the methodology and observed effects); equation of chemical reactions;
- name of the quantitation method and analytical conditions.
- formulas for calculating the quantitative content of drug components are given in general form, in literal expression and with the substitution of numerical values;

- calculation of deviations of content from the prescribed quantity in comparison with the norms of permissible deviations according to RD;
- conclusion: “Satisfies” or “Does not satisfy” the object of analysis with the requirements of ND, GF, FS, orders of the Ministry of Health of the Russian Federation (“... the dosage form is manufactured satisfactorily or unsatisfactorily in accordance with ND, order...”);
- use of the drug in medicine, indicating the pharmacological action and main indications for use;
- storage and shelf life of manufactured and dispensed medicinal products.

The diary must be submitted daily for verification and signature to the head of the pharmacy practice - the pharmacist-analyst. At the end of the practical training, the diary must be certified on the last completed analysis with the signature of the head of the practical work, the signature of the manager (manager, director) and the seal of the institution - the practice base.

During the practice period, the diary is periodically submitted for verification to the head of practice from FEFU.

Preparation of a practice report.

The internship report is compiled in accordance with the main stage of the internship program and reflects the implementation of the internship program. The report is drawn up on A4 paper (210x297 mm). The text of the report is presented on one side of the sheet, in Times New Roman font, size 14, with 1.5 intervals. Each page of the work is designed with the following margins: left - 30 mm; right - 10 mm; top - 20 mm; lower - 20 mm. The paragraph indent in the text is 1.5 cm. All pages of the work must have continuous numbering, including appendices. Numbering is done in Arabic numerals, with the page serial number placed in the lower right corner, starting with the table of contents after the title page. All structural elements of the practice report are stitched together. The report can be illustrated with tables, graphs, diagrams, filled-in forms, and drawings. The pages of the report are numbered in Arabic numerals, with continuous numbering throughout the text. The number is placed in the center of the bottom of the sheet (aligned from the center) without a dot at the end of the number. The title page is included in the general page numbering, but the page number is not indicated on the title page. Digital material should be presented in the form of tables. The table should be placed in the report immediately after the text in which it is mentioned for the first time, or on the next page. All tables provided must have links in the text of the report. Tables should be numbered in Arabic

numerals and sequentially numbered throughout the text of the report. The number should be placed above the table on the left without a paragraph indent after the word “Table”.

Contents of the report sections:

Title page.

Main part. The report must describe the goals and objectives of the practice and provide a brief description of the place of practice (organization). The main part should contain a description of the history of the creation of the place of practice, the organizational structure of the enterprise, the competitive environment of the enterprise, the scope of activity of the practice object. The following describes the stages of work in accordance with the individual task, and provides proposals for improving and organizing the work of the enterprise. The conclusion reflects the results achieved, an analysis of the problems encountered and options for eliminating them, and one’s own assessment of the level of one’s professional training based on the results of the practice. The report should reflect the student’s opinion on the issues studied during theoretical training, their correspondence to real activities, as well as what special skills and knowledge the student acquired during practice.

Attached to the internship report:

1. An internship diary, certified by the internship supervisor from the host party, including a list and brief description of the daily types of work performed by the student during the internship in accordance with the internship calendar plan.
2. Characteristics (review) of the practice manager from the receiving party.

Based on the results of the practice, students are given grades:

1) An “excellent” grade is given to a student who, when defending a report, demonstrates deep knowledge of scientific and technical documentation. The practice diary and reporting documents are prepared by the student in accordance with the requirements of this work program. The student did not miss a single day of practice without a good reason.

2) A “good” grade is given to a student who, when defending a report, demonstrates deep knowledge of scientific and technical documentation. However, there were some mistakes in the answer, which were corrected by the student with the help of the teacher. The practice diary and reporting documents are prepared by the student in accordance with the requirements of this work program. A student missed one day of practice without a valid reason.

3) A “satisfactory” grade is given to a student who, when defending a report, demonstrates insufficient knowledge of scientific and technical documentation and makes

mistakes. The practice diary and reporting documents are prepared by the student in accordance with the requirements of this work program. The student missed no more than 3 days of practice without a good reason.

4) An “unsatisfactory” grade is given to a student who, when defending a report on practice, gives an incomplete answer, which represents scattered knowledge on the topic of the question with significant errors. The diary and reporting documents are partially completed. The student missed more than 3 days of practice without a good reason.

9. EDUCATIONAL, METHODOLOGICAL AND INFORMATION SUPPORT OF PRODUCTION PRACTICE

Main literature.

1. Electronic publication based on: Quality control of medicines: textbook / T. V. Pleteneva, E. V. Uspenskaya, L. I. Muradova / ed. T. V. Pleteneva. - M.: GEOTAR-Media, 2014. - 560 p. - ISBN 978-5-9704-2634-0. . - Access mode:http://www.studmedlib.ru/book/ISBN9785970426340.html

2. Belyaev, V.A. Pharmaceutical chemistry [Electronic resource]: educational manual / V.A. Belyaev, N.V. Fedota, E.V. Gorchakov. – Stavropol: AGRUS Stavropol State. Agrarian University, 2013. – 160 p. - ISBN 978-5-9596-0946-7. - Access mode: http://znanium.com/catalog/product/515025

3. Pharmaceutical chemistry: textbook / Ed. A.P. Arzamastseva. - 2nd ed., rev. - M.: GEOTAR-Media, 2008 http://www.studmedlib.ru/book/ISBN9785970407448.html

4. Pharmaceutical chemistry: course of lectures: textbook book. 2: 4th year / V.V. Chupak-Belousov. – Moscow: Binom, 2014. http://lib.dvfu.ru:8080/lib/item?id=chamo:833828&theme=FEFU

5. Pharmaceutical chemistry: course of lectures: textbook book. 1: 3rd year / V.V. Chupak-Belousov. – Moscow: Binom, 2014. http://lib.dvfu.ru:8080/lib/item?id=chamo:833830&theme=FEFU

6. State Pharmacopoeia of the Russian Federation XIV editionhttps://femb.ru/record/pharmacopea14

Additional literature.

1. Order of the Ministry of Health of the Russian Federation dated December 20, 2012 N 1175n “On approval of the procedure for prescribing and prescribing medicines, as well as forms of prescription forms for medicines, the procedure for processing these forms, their recording and storage.”

2. Federal Law of the Russian Federation No. 61 of April 12, 2010 “On the

circulation of medicines."

3. Order of the Ministry of Health of the Russian Federation No. 214 of July 16, 1997 "On quality control of medicines manufactured in pharmacies."

4. Order of the Ministry of Health and Social Development of the Russian Federation No. 706n dated August 23, 2010 (as amended on December 28, 2010) "On approval of the rules for storing medicines."

5. Order of the Ministry of Health of the Russian Federation dated July 16, 1997 No. 305 "On standards of deviations in the manufacture of medicines and packaging of industrial products in pharmacies."

6. SP 3.3.2.1248-03 "Conditions for transportation and storage of medicalimmunobiological preparations."

7. SP 3.3.2.1120-02 "Sanitary and epidemiological requirements for the conditions of transportation, storage and dispensing to citizens of medical immunobiological preparations used for immunoprophylaxis by pharmacies and healthcare institutions.

8. Order of the Ministry of Health and Social Development of the Russian Federation dated August 23, 2010. No. 706n "On approval of rules for storing drugs."

9. Order of the Ministry of Health of the Russian Federation dated October 21, 1997 No. 309 "On approval of the Instructions on the sanitary regime of pharmacy organizations (pharmacies) (as amended on April 24, 2003)." - Access mode:http://www.roszdravnadzor.ru/documents/35825

10. Order of the Ministry of Health of Russia dated October 26, 2015 No. 751n "On approval of the rules for the manufacture and dispensing of drugs for medical use by pharmacy organizations and individual entrepreneurs with a license for pharmaceutical activities"

10. MATERIAL AND TECHNICAL SUPPORT OF PRACTICE

The logistics of practice depend on the base on which students undergo practice. A prerequisite is the presence of a pharmacist analyst's workplace (an office or a pharmacist's desk), equipped in accordance with the analyzes performed in the pharmacy: necessary reagents, utensils, consumables, instruments (refractometer, scales, set of weights), regulatory and reporting documentation.

11. VALUATION FUNDS

Examples of test tasks:

1. Quantitative determination of aminophylline solution 0.5% - 150.0 ml in a pharmacy is carried out using the method

A) neutralization acidimetry

B) displacement acidimetry

B) complexometry

D) alkalimetry of neutralization

2. The group of precipitation (general alkaloid) reagents includes the reagent

A) Bouchard

B) Feling

B) Fred

D) Nessler

3. The composition of the injection solution of nicotinic acid includes sodium

A) bicarbonate

B) chloride

B) hydroxide

D) metabisulfite

4. The deterioration of aminophylline solubility in water during storage occurs mainly due to

A) absorption of carbon dioxide

B) the action of air nitrogen

B) the action of oxygen in the air

D) actions of light

5. Quantitative determination of a 0.02% riboflavin solution in a pharmacy is carried out using the method

A) photoelectrocolorimetry

B) refractometry

B) spectrophotometry

D) alkalimetry

6. If the storage conditions for tetracycline antibiotics are violated, they may gradually darken, which is associated with

A) oxidation by atmospheric oxygen

B) absorption of carbon dioxide

B) hydrolytic decomposition

D) absorption of moisture from the air

7. Ascorbic acid is stored in a well-closed container, protected from light, since during storage ascorbic acid undergoes a process

A) oxidation

B) recovery

B) hydrolysis

D) polymerization

8. In its state of aggregation, an oily liquid is

A) tocopherol acetate

B) retinol acetate

B) nicotinamide

D) pyridoxal phosphate

9. In a dosage form containing sulfacyl sodium and adrenaline hydrochloride, a precipitate is formed that corresponds to

A) acidic form of sulfacyl

B) the base of adrenaline

B) sodium salt of adrenaline

D) complex compound of sulfacyl with adrenaline

10. The refractometry method is based on

A) dependence of the refractive index of light on the concentration of the solution of the substance

B) the ability of a substance to rotate the plane of polarized light

B) selective absorption of electromagnetic radiation

D) measuring the current between electrodes immersed in a solution

11. Spectrophotometry is based on measuring the quantity

A) optical density

B) refractive index

B) fluorescence intensity

D) angle of rotation of the plane of polarization

12. The value of the specific absorption rate depends on

A) the nature of the substance

B) thickness of the cuvette layer

B) technical characteristics of the optical device

D) sample weight of the analyzed object

13. Optical density (A) is

A) logarithm of the ratio of the intensity of the monochromatic radiation flux passing through the object under study to the intensity of the initial radiation flux

B) the wavelength at which the absorption intensity reaches its maximum

B) negative decimal logarithm of hydrogen ion activity

14. In-pharmacy control uses the instrumental method

A) refractometry

B) thin layer chromatography

B) spectrophotometry

D) HPLC

15. Quantitative determination of sodium sulfacyl 20% in eye drops in a pharmacy is carried out using the method

A) refractometry

B) alkalimetry

B) acidimetry

D) iodometry

16. Quantitative determination of glucose solution in a pharmacy is carried out using the method

A) refractometry

B) permanganatometry

B) direct iodometry

D) reverse alkalimetry

17. During storage, the benzocaine substance developed an odor of ethyl alcohol, which indicates

A) about hydrolysis at the ester group

B) about the oxidation of the primary aromatic amino group

B) about the reaction with carbon dioxide in the air

D) about the oxidation of the aromatic ring

18. During the storage of sodium sulfacyl eye drops under the influence of light and atmospheric oxygen,

A) yellowing of the solution

B) the appearance of sediment

B) pH shift to the alkaline side

D) change in specific rotation

19. Color of the precipitate in the reaction of sulfate ions with barium chloride in an acidic environment

A) white

B) black

B) yellowish

D) emerald green

20. Quantitative determination of potassium iodide in dosage forms is carried out using the method

A) argentometry
B) acidimetry
B) alkalimetry
D) complexometry

Sample final interview questions:

1. Organization of a pharmacist-analyst's workplace
2. Types of pharmaceutical control of medicines.
3. Acceptance control. Features of the event
4. Physical control. Features of the event
5. Chemical control. Features of the event
6. Analysis of purified water
7. Rules for storing pharmaceutical substances in a pharmacy
8. Preparation of titrated solutions. Chemical reagents
9. Qualitative analysis of dosage forms described in the student's diary
10. Quantitative analysis of dosage forms described in the student's diary
11. Acid-base titration methods
12. Redox titration methods
13. Precipitation titration methods
14. Refractometric analysis of dosage form
15. Pharmaceutical incompatibilities
16. Features of calculations in the express analysis of dosage forms manufactured in a pharmacy

Compiled by: Department Assistant
pharmacy and pharmacology P.A. Pack

Agreed:

Head of OP Shokur O.A.

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)
Institute of Life Sciences and Biomedicine (School)

Department of Pharmacy and Pharmacology

Full Name

REPORT

Internship. Medicine quality control practice

specialty 05/33/01 Pharmacy

The author of the work is student gr.
signature
"_" _____ 202_
Head of practice from FEFU Institute of Housing and Mechanical Engineering

(position, academic title)

(signature) (I.O.F)
"_" 202_

The report is protected with a rating

_____

(signature) (I.O.F)
"_" 202_

Vladivostok
202_

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)
Institute of Life Sciences and Biomedicine (School)

Department of Pharmacy and Pharmacology

Full Name

DIARY

undergoing practical training
Internship. Medicine quality control practice
student course

_____

(Full name.)

specialty 05/33/01 Pharmacy

Place of practice

Practice time:
Start
ending
Head of practice:
from the university
from the enterprise
M.p.

Vladivostok
202_g.

THE FIRST DAY	
date	
day of the week	
place of work (department)	
content of the work (description of the process)	
compliance with schedule	
grade	

signature of the practice manager from enterprises	
SECOND DAY	
date	
day of the week	
place of work	
content of the work (description of the process)	
compliance with schedule	
grade	

signature of the practice manager from the company	
DAY THREE	
date	
day of the week	
place of work	
content of the work (description of the process)	

compliance with schedule	
grade	
signature of the practice manager from the company	

DAY FOUR	
date	
day of the week	
place of work	
content of the work (description of the process)	

compliance with schedule	
grade	
signature of the practice manager from the company	

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)

INSTITUTE OF LIFE SCIENCES AND BIOMEDICINE (SCHOOL)

I APPROVED
Director of the Institute of Life
Sciences and Biomedicine (School)

_____ Yu.S. Khotimchenko
Full name

"06" December 2022

WORK PROGRAM FOR PRODUCTION PRACTICE Production practice. Practice in management and economics of pharmaceutical organizations
Specialty: 05/33/01 Pharmacy
Specialization"Clinical and Experimental Pharmacy (in English)"

Vladivostok
2022

1. OBJECTIVES OF DEVELOPING PRODUCTION PRACTICES

The purpose of the internship is “Industrial practice. Practice in the management and economics of pharmaceutical organizations” is: consolidation of competencies in the field of organizational and management activities and sales of medicines and other pharmaceutical products.

2. TASKS OF PRODUCTION PRACTICE

The objectives of the practice “Industrial practice. Practice in management and economics of pharmaceutical organizations" are:

– consolidation, expansion and improvement of theoretical knowledge obtained in the study of the discipline “Management and Economics of Pharmacy”;

– formation and consolidation of professional and practical skills and abilities in the student in the conditions of a modern pharmaceutical organization;

– development of organizational and business qualities of a future specialist in the pharmaceutical industry;

– practical consolidation and deepening of knowledge, skills and abilities in the prescription and over-the-counter dispensing of medicines in pharmacies;

– strengthening skills in working with basic regulatory legal acts regulating pharmaceutical activities and accounting documentation;

– checking the student’s professional readiness for independent activity;

– acquisition of practical skills and abilities in organizing the provision of pharmaceutical care to the population and ensuring the fulfillment of the main functions of a pharmacy: sales, marketing, trade, production, information, education of labor discipline, professional ethics and deontology, development of organizational work skills;

– formation and improvement of the student’s competencies necessary for further independent work and solving typical professional problems.

3. PLACE OF PRODUCTION PRACTICE IN THE STRUCTURE OF EP

"Internship. Practice in the management and economics of pharmaceutical organizations" is an integral part of the main professional educational program, is included in block B2 "Practices" of the curriculum and is mandatory.

4. TYPES, METHODS, PLACE AND TIMES OF PRODUCTION PRACTICE

Type of practice – Industrial practice

Type of practice – Practice in management and economics of pharmaceutical organizations

Method of conducting: away.

The form of practice is concentrated.

In accordance with the schedule of the educational process, practice is implemented in semester A.

The place of practice is pharmacy institutions (Monastyrev.rf, NefRos LLC, City United Social Pharmacy LLC, Latona Limited Liability Company).

5. STUDENT COMPETENCIES FORMED AS A RESULT OF COMPLETING PRODUCTION PRACTICE

General professional competencies of graduates and indicators of their achievement:

Task type	Code and name of professional competence (result of mastery)	Code and name of the competency achievement indicator
Adaptation to production conditions	OPK-3 Able to carry out professional activities taking into account specific economic, environmental, social factors within the framework of the system of legal regulation of the sphere of circulation of medicines	GPC-3.1 Complies with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
		GPC-3.2 Takes into account, when making management decisions, economic and social factors that influence the financial and economic activities of pharmaceutical organizations
		OPK-3.3 Performs labor actions taking into account their impact on the environment, preventing the occurrence of environmental hazards
		OPK-3.4 Determines and interprets the main environmental indicators of the state of the production environment during the production of medicines

Code and name of the competency achievement indicator	Name of the assessment indicator (result of training by practice)
GPC-3.1 Complies with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines	Knows the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
	Able to solve problems of professional activity in the field of drug circulation
	Knows methods of compliance with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines

GPC-3.2 Takes into account, when making management decisions, economic and social factors that influence the financial and economic activities of pharmaceutical organizations	Knows the economic and social factors that influence the financial and economic activities of pharmaceutical organizations
	Able to take into account economic and social factors when making management decisions
	Knows methods of taking into account economic and social factors
OPK-3.3 Performs labor actions taking into account their impact on the environment, preventing the occurrence of environmental hazards	Knows the environmental impact of his work activities
	Able to perform work activities taking into account their impact on the environment
	Knows methods of counteracting environmental hazards
OPK-3.4 Determines and interprets the main environmental indicators of the state of the production environment during the production of medicines	Knows the main environmental indicators of the state of the production environment during the production of medicines
	Able to identify and interpret the main environmental indicators of the state of the production environment during the production of medicines
	Knows methods for determining and interpreting the main environmental indicators of the state of the production environment during the production of medicines

Professional competencies of graduates and indicators of their achievement:

Task type	Code and name of professional competence (result of mastery)	Code and name of the competency achievement indicator
Organizational and managerial	PK-9 Able to take part in planning and organizing resource provision for a pharmaceutical organization	PC-9.1 Determines the economic indicators of inventories of medicines and other pharmaceutical products
		PC-9.2 Selects optimal suppliers and organizes procurement processes based on the results of a market study of suppliers of medicines for medical use and other pharmaceutical products
		PC-9.3 Monitors the execution of contracts for the supply of medicines for medical use and other pharmaceutical products
		PC-9.4 Conducts acceptance control of incoming medicines and other pharmaceutical products, checking and completing accompanying documents in the prescribed manner
		PC-9.5 Conducts withdrawal from circulation of medicines and pharmaceutical products that have become unusable, expired, falsified, counterfeit and substandard products

		PC-9.6 Carry out subject-quantitative accounting of medicines in the prescribed manner
		PC-9.7 Organizes control over the availability and storage conditions of medicines for medical use and other pharmaceutical products

PC-9.1 Determines the economic indicators of inventories of medicines and other pharmaceutical products	Knows the economic indicators of inventories of medicines and other pharmaceutical products
	Able to determine economic indicators of inventories of medicines and other pharmaceutical products
	Knows methods for determining economic indicators of inventories of medicines and other pharmaceutical products
PC-9.2 Selects optimal suppliers and organizes procurement processes based on the results of a market study of suppliers of medicines for medical use and other pharmaceutical products	Knows the theoretical basis for selecting optimal suppliers and organizing procurement processes based on the results of a market study of suppliers of medicines for medical use and other pharmaceutical products
	Able to select optimal suppliers and organize procurement processes based on the results of market research of suppliers of medicines for medical use and other pharmaceutical products
	Knows methods for selecting optimal suppliers and organizing procurement processes based on the results of a market study of suppliers of medicines for medical use and other pharmaceutical products
PC-9.3 Monitors the execution of contracts for the supply of medicines for medical use and other pharmaceutical products	Knows the theoretical basis for monitoring the execution of contracts for the supply of medicines for medical use and other pharmaceutical products
	Able to monitor the execution of contracts for the supply of medicines for medical use and other pharmaceutical products
	Knows methods of monitoring the execution of contracts for the supply of medicines for medical use and other pharmaceutical products
PC-9.4 Conducts acceptance control of incoming medicines and other pharmaceutical products, checking and completing accompanying documents in the prescribed manner	Knows the theoretical basis of acceptance control of incoming medicines and other pharmaceutical products
	Able to carry out acceptance control of incoming medicines and other pharmaceutical products, checking and completing accompanying documents in the prescribed manner
	Knows methods of acceptance control of incoming medicines and other pharmaceutical products, checking and preparing accompanying documents in the prescribed manner
PC-9.5 Conducts withdrawal from circulation of medicines and pharmaceutical products that have become unusable, expired, falsified, counterfeit and substandard products	Knows the theoretical basis for the withdrawal from circulation of medicines and pharmaceutical products that have become unusable, expired, falsified, counterfeit and substandard products
	Able to remove from circulation medicines and pharmaceutical products that have become unusable, expired, falsified, counterfeit and substandard products
	Knows methods of removing from circulation medicines and pharmaceutical products that have become unusable, expired, falsified, counterfeit and substandard products

PC-9.6 Carry out subject-quantitative accounting of medicines in the prescribed manner	Knows the theoretical foundations of subject-quantitative accounting of medicines in the prescribed manner
	Able to carry out subject-quantitative accounting of medicines in the prescribed manner
	Knows methods of subject-quantitative accounting of medicines in the prescribed manner
PC-9.7 Organizes control over the availability and storage conditions of medicines for medical use and other pharmaceutical products	Knows the theoretical basis for monitoring the availability and storage conditions of medicines for medical use and other pharmaceutical products
	Able to organize control over the availability and storage conditions of medicines for medical use and other pharmaceutical products
	Knows methods of monitoring the availability and storage conditions of medicines for medical use and other pharmaceutical products

6. STRUCTURE AND CONTENT OF PRACTICE, INCLUDING PRACTICAL TRAINING

The total labor intensity of the practice is 6 credits, 216 hours.

No.	Stages of practice	Types of work in practice, including practical training and independent work of students	Labor intensity of SR/KSR (in hours)	Current control form
1	Organizational	Familiarity with the organization of work of a pharmaceutical organization. Safety briefing, receiving directions, individual assignments, programs and guidelines. Acquaintance with the place of internship.	4/2	Interview
2	Basic	Carrying out acceptance control of medicines and other pharmaceutical products entering the organization and ensuring storage of medicines and other pharmaceutical products.	28/2	Practice diary, practice report
3	Basic	Retail trade, dispensing of medicines and other pharmaceutical products.	58/4	Practice diary, practice report
4	Basic	Informing the population and medical workers about medicines and other pharmaceutical products.	28/2	Practice diary, practice report
5	Basic	Administrative and managerial work of the pharmacist-manager (or his deputies).	28/2	Practice diary, practice report
6	Basic	Work on accounting, reporting and documentation of business transactions in a pharmaceutical organization.	28/2	Practice diary, practice report

7	Basic	Economic analysis of trade, financial and economic activities of a pharmaceutical organization.	18/2	Practice diary, practice report
8	Final	Preparation of reporting documentation on practice and passing the test.	6/2	Practice diary, practice report
		Total:	198/18	

7. EDUCATIONAL AND METHODOLOGICAL SUPPORT OF INDEPENDENT WORK OF STUDENTS IN PRODUCTION PRACTICE

Student independent work (SWS) is one of the forms of practical training and is organized for the purpose of:

- systematization and consolidation of the acquired theoretical knowledge and practical skills of students;
- deepening and expanding theoretical knowledge;
- developing the ability to work with various types of information, the ability to use regulatory, legal, reference documentation and special literature;
- development of students' cognitive abilities;
- formation of such personality qualities as responsibility and organization, independence of thinking, ability for self-development, self-improvement and self-realization.

Educational and methodological support for students' independent work during practical training are:

- educational literature on previously mastered specialized disciplines;
- regulatory documents regulating the activities of the enterprise (organization) where the student is undergoing practical training;
- methodological developments for students that determine the order and content of practical training.

SRS can be defined as purposeful, internally motivated, structured by the subject himself and adjusted by him in terms of process and result, independent activity.

There are five levels of independent work:

1. The first level is the literal and transformative reproduction of information.
2. The second level is independent work based on the model.
3. Third – reconstructive-independent work
4. Fourth – heuristic independent work.
5. Fifth – creative (research) independent work.

To effectively carry out independent work, it is necessary to master educational strategies - a stable set of actions, purposefully organized by the subject to solve various educational tasks.

8. FORMS OF CERTIFICATION (BASED ON PRACTICE)

Methodological materials defining the assessment procedure

To receive a positive assessment based on the results of the internship, the student must fully complete the internship program, timely complete and submit all necessary reporting documents to the Department.

The results of the work done should be reflected in the practice report. The report is checked and signed by the head of practice from the enterprise, then submitted to the head of practice from the university in the last week of practice on time. If the place of internship is the FEFU Department, the report is prepared by the student and submitted to the head of the internship from the university.

The final grade (credit) for the internship is given on the basis of all submitted documents, which reveal the regularity of visiting the place of practice, the thoroughness of the report, the student's initiative shown during the internship and the ability for independent professional activity.

The results of the internship are assessed according to the following criteria:

- level of mastery of competencies;
- review of the practice manager from the organization;
- practical results of the work carried out and their significance;
- the quality of the student's answers to questions on the substance of the report.

Based on the results of the practice and the defense of students' reports, the teacher - the head of the practice draws up a summary report.

A credit for practice is equivalent to grades for theoretical training and is taken into account when summing up the overall performance of students.

Students who fail to complete the program without a good reason or receive a negative grade may be expelled from a higher education institution as having academic debt in the manner prescribed by the university charter.

Preparation of a practice report

The internship report is compiled in accordance with the main stage of the internship program and reflects the implementation of the internship program. The report is drawn up on A4 paper (210x297 mm). The text of the report is presented on one side of the sheet, in

Times New Roman font, size 14, with 1.5 intervals. Each page of the work is designed with the following margins: left - 30 mm; right - 10 mm; top - 20 mm; lower - 20 mm. The paragraph indent in the text is 1.5 cm. All pages of the work must have continuous numbering, including appendices. Numbering is done in Arabic numerals, with the page serial number placed in the lower right corner, starting with the table of contents after the title page. All structural elements of the practice report are stitched together. The report can be illustrated with tables, graphs, diagrams, filled-in forms, and drawings. The pages of the report are numbered in Arabic numerals, with continuous numbering throughout the text. The number is placed in the center of the bottom of the sheet (aligned from the center) without a dot at the end of the number. The title page is included in the general page numbering, but the page number is not indicated on the title page. Digital material should be presented in the form of tables. The table should be placed in the report immediately after the text in which it is mentioned for the first time, or on the next page. All tables provided must have links in the text of the report. Tables should be numbered in Arabic numerals and sequentially numbered throughout the text of the report. The number should be placed above the table on the left without a paragraph indent after the word “Table”.

Contents of report sections

Title page (Appendix 1). The report must describe the goals and objectives of the practice and provide a brief description of the place of practice (organization). The main part should contain a description of the history of the creation of the place of practice, the organizational structure of the enterprise, the competitive environment of the enterprise, the scope of activity of the practice object. The following describes the stages of work in accordance with the individual task, and provides proposals for improving and organizing the work of the enterprise. The conclusion reflects the results achieved, an analysis of the problems encountered and options for eliminating them, and one’s own assessment of the level of one’s professional training based on the results of the practice. The report should reflect the student’s opinion on the issues studied during theoretical training, their correspondence to real activities, as well as what special skills and knowledge the student acquired during practice.

Attached to the internship report:

1. An internship diary, certified by the internship supervisor from the host party, including a list and brief description of the daily types of work performed by the student during the internship in accordance with the internship calendar plan (Appendix 2).

2. Characteristics (feedback) of the practice manager from the receiving party.

Criteria for assessing the results of defending a report on practice

In total, you can get a maximum of 100 points in the practice test.

Points for work during practice are distributed as follows:

36 points- visiting practice. If there are no gaps, 36 points are given, for each gap 6 points are deducted. If practice is missed for a valid reason (documented illness, official release to participate in various events), then the point is not deducted.

36 points– filling out a diary and reporting documentation.

0-28 points– defense of the practice report in the form of a presentation.

Scale of correspondence of rating points to the five-point scale:

1) An "excellent" grade (91–100 points) is given to a student who, when defending a report, demonstrates deep knowledge of scientific and technical documentation. The practice diary and reporting documents are prepared by the student in accordance with the requirements of this work program.

2) A "good" grade (77–90 points) is given to a student who, when defending a report, demonstrates deep knowledge of scientific and technical documentation. However, there were some mistakes in the answer, which were corrected by the student with the help of the teacher. The practice diary and reporting documents are prepared by the student in accordance with the requirements of this work program.

3) A "satisfactory" grade (61–76 points) is given to a student who, when defending a report, demonstrates insufficient knowledge of scientific and technical documentation and makes mistakes. The practice diary and reporting documents are prepared by the student in accordance with the requirements of this work program.

4) A grade of "unsatisfactory" (less than 61 points) is given to a student who, when defending a report on practice, gives an incomplete answer, representing scattered knowledge on the topic of the question with significant errors. The diary and reporting documents are partially completed.

9. EDUCATIONAL, METHODOLOGICAL AND INFORMATION SUPPORT OF PRODUCTION PRACTICE

Main literature

1. Health Economics [Electronic resource] / Reshetnikov A.V. - M.: GEOTAR-Media, 2015. -http://www.studentlibrary.ru/book/ISBN9785970431368.html

2. Management and Economics of Pharmacy [Electronic resource]: a collection of situational problems with solution algorithms for 4-6 year students studying in the specialty

060301 - Pharmacy/ - Electron. text data - Samara: REAVIZ, 2012. - 148 p. - Access mode:http://www.iprbookshop.ru/18426.html

3. Belchikova G.V. Fundamentals of state regulation in the field of pharmacy. Pharmaceutical market [Electronic resource]: textbook/ Belchikova G.V., Chernyshova T.M.—Electron. text data.— Samara: REAVIZ, 2010.— 254 pp.— Access mode:http://www.iprbookshop.ru/10139.html

additional literature

1. Belchikova G.V. Psychology of advertising in pharmacy [Electronic resource]: textbook / Belchikova G.V.—Electron. text data.— Samara: REAVIZ, 2009.— 63 pp.— Access mode:http://www.iprbookshop.ru/10138.html

2. Savina G.S. Guide to industrial practice in the management and economics of pharmacy [Electronic resource] / Savina G.S. - Electronic. text data.— Kemerovo: Kemerovo State Medical Academy, 2007.— 60 pp.— Access mode:http://www.iprbookshop.ru/6214.html— EBS “IPRbooks”

3. Belchikova G.V. Textbook for pharmacist-interns in the specialty “Management and Economics of Pharmacy” [Electronic resource] / G.V. Belchikova. — Electron. text data. - Samara: REAVIZ, 2011. - 64 p. - 2227-8397. - Access mode:http://www.iprbookshop.ru/10485.html

4. Analysis of the formulation of pharmaceutical organizations in the Orenburg region [Electronic resource]: educational manual / M.R. Dudarenkova [and others].— Electron. text data.— Orenburg: Orenburg State Medical Academy, 2012.— 87 p.— Access mode:http://www.iprbookshop.ru/31799.html

5. Dudarenkova M.R. Managing inventories of substances [Electronic resource]: educational manual / Dudarenkova M.R., Gladunova E.P.—Electron. text data.— Orenburg: Orenburg State Medical Academy, 2012.— 36 pp.— Access mode:http://www.iprbookshop.ru/31858.html

6. Dudarenkova M.R. Internal audit in a pharmacy [Electronic resource]: educational manual / Dudarenkova M.R., Gladunova E.P.—Electron. text data.— Orenburg: Orenburg State Medical Academy, 2012.— 58 p.— Access mode:http://www.iprbookshop.ru/21794.html

7. Dudarenkova M.R. Tax legislation [Electronic resource]: educational manual / Dudarenkova M.R., Sankov A.N., Korotkova A.M.—Electron. text data.— Orenburg: Orenburg State Medical Academy, 2012.— 60 pp.— Access mode:http://www.iprbookshop.ru/21829.html

8. Azembaev A.A. Marketing and pharmaceutical market of Kazakhstan [Electronic resource]: textbook/ Azembaev A.A., Zurdinov A.Z., Aidarkhanova G.S.—Electron. text data.— Almaty: Nur-Print, 2011.— 133 pp.— Access mode:http://www.iprbookshop.ru/67089.html

9. Good pharmacy practice and analysis of violations of licensing requirements and conditions in pharmacy organizations of the Orenburg region [Electronic resource]: educational manual / M.R. Dudarenkova [and others].— Electron. text data.— Orenburg: Orenburg State Medical Academy, 2012.— 44 p.— Access mode:http://www.iprbookshop.ru/31810.html

10. Dudarenkova M.R. Organizational and economic approaches to pricing for extemporaneous medicines [Electronic resource]: educational manual / Dudarenkova M.R., Gladunova E.P.—Electron. text data.— Orenburg: Orenburg State Medical Academy, 2012.— 43 pp.— Access mode:http://www.iprbookshop.ru/31811.html

11. Sankov A.N. Labor motivation of employees of pharmaceutical organizations [Electronic resource]: educational manual/ Sankov A.N., Dudarenkova M.R., Zubareva A.V.—Electron. text data.— Orenburg: Orenburg State Medical Academy, 2012.— 21 p.— Access mode:http://www.iprbookshop.ru/21827.html

Electronic resources and software

1. Federal Electronic Medical Library http://feml.scsml.rssi.ru/feml/
2. Legal information system http://www.consultant.ru/
3. Scientific electronic library eLIBRARY project of the Russian Foundation for Basic Research www.elibrary.ru
4. FEFU Scientific Library https://lib.dvfu.ru
5. Microsoft Office Professional Plus 2010; an office suite that includes software for working with various types of documents (texts, spreadsheets, databases, etc.);
6. 7Zip 9.20 - a free file archiver with a high degree of data compression;
7. ABBYY FineReader 11 - a program for optical character recognition;
8. Adobe Acrobat XI Pro – a software package for creating and viewing electronic publications in PDF format;
9. ESET Endpoint Security - comprehensive protection of workstations based on Windows OS. Virtualization support + new technologies;
10. Google Chrome;

10. LOGISTICS AND TECHNICAL SUPPORT OF PRODUCTION PRACTICES

Name of equipped premises and premises for independent work	List of main equipment
Limited Liability Company "Vernalis" Vladivostok, st. Shilkinskaya, 10a	Standard infrastructure of a pharmacy organization Treaty 1210/17
Limited Liability Company "Alfar" Vladivostok, st. Russkaya, 94a	Standard infrastructure of a pharmacy organization Treaty 2457/13
Limited Liability Company "Iris" Vladivostok, st. Dneprovskaya, 36	Standard infrastructure of a pharmacy organization Treaty 1211/17
Limited Liability Company "Efta" Vladivostok, st. Ladygina, 9 (Green corner)	Standard infrastructure of a pharmacy organization Treaty 1324/15
Limited Liability Company "Hippocrates" Vladivostok, st. Russkaya, 94a	Standard infrastructure of a pharmacy organization Treaty 1327/15
Limited Liability Company "Azalis" Vladivostok, st. Vyazovaya, 1v (stop “Zaporizhskaya”)	Standard infrastructure of a pharmacy organization Treaty 1328/15
Limited Liability Company "Solid" Vladivostok, prospect 100 years Vladivostok, 20 (stop “Molodezhnaya”)	Standard infrastructure of a pharmacy organization Treaty 1329/15
Limited Liability Company "NefRos" Vladivostok, Vladivostok, Ajax village, 10	Standard infrastructure of a pharmacy organization Treaty 1396/18
Limited Liability Company "City United Social Pharmacy" Chain of pharmacies in Vladivostok Vladivostok, st. Sakhalinskaya, 33, st. Khabarovskaya, 8, st. Ladygina, 7, etc.	Standard infrastructure of a pharmacy organization Treaty 1591/18
Limited Liability Company LLC "Latona" Vladivostok, st. Kraeva, 8	Standard infrastructure of a pharmacy organization Treaty 502/17
Audiences for independent work of students Reading rooms of the FEFU Scientific Library with open access to the collection 690922, Primorsky Territory, Vladivostok, Russky Island, Saperny Peninsula, Ayaks village, 10, Building A, level 10	Educational furniture sets (tables and chairs) Monoblock HP ProOpe 400 All-in-One 19.5 (1600x900), Core i3-4150T, 4GB DDR3-1600 (1x4GB), 1TB HDD 7200 SATA, DVD+/-RW, GigEth, Wi-Fi, VT, usb kbd/ mse,Win7Pro (64-bit)+Win8.1Pro(64-bit),1-1-1 Wty Internet access speed 500 Mbit/sec. Workplaces for people with disabilities are equipped with displays and Braille printers; equipped with: portable devices for reading flat-printed texts, scanning and reading machines, video enlargers with the ability to

	regulate color spectrums; magnifying electronic magnifiers and ultrasonic markers
Audience for independent work of students 690922, Primorsky Krai, Vladivostok, Russky Island, Saperny Peninsula, Ayaks village, 10, Building 25.1, room. M621	Sets of educational furniture (tables and chairs), student board. Monoblock Lenovo C360G-i34164G500UDK 19.5" Intel Core i3-4160T 4GB DDR3-1600 SODIMM (1x4GB)500GB Windows Seven Enterprise - 17 pieces; Wired LAN network - Cisco 800 series; wireless LANs for students are provided with a system based on 802.11a/b access points /g/n 2x2 MIMO(2SS).
Room for storage and preventive maintenance of educational equipment 690922, Primorsky Krai, Vladivostok, Russky Island, Saperny Peninsula, Ayaks village, 10, Building 25.1, room. M408	Furniture for storage and preventive maintenance of educational equipment

For persons with disabilities and people with disabilities, the choice of places of practice is consistent with the requirement of their accessibility for these students and the practice is carried out taking into account the characteristics of their psychophysical development, individual capabilities and health status.

11. VALUATION FUNDS

For certification based on the results of the internship, the student must provide a report on the practice with a note from the practice manager, a diary of the internship, with a daily note from the practice manager on the completion of work according to the schedule.

The form of control based on the results of practice in the management and economics of pharmaceutical organizations is a test with an assessment.

During certification, the level of development of the following competencies is assessed:

Code and formulation of competencies	Stages of developing competencies		Criteria	Indicators
GPC-3.1 Complies with the norms and rules established by authorized government bodies when solving	Knows (threshold level)	norms and rules established by authorized government bodies when solving problems of	Great	Formed and systematic knowledge about the norms and rules established by authorized government bodies when solving

problems of professional activity in the field of circulation of medicines		professional activity in the field of circulation of medicines		problems of professional activity in the field of circulation of medicines
			Fine	Formed, but containing individual gaps in knowledge about the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
			Satisfy impressive	Incomplete, but systematic knowledge of the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
			Dissatisfaction impressive	Fragmentary, non-systematic knowledge about the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
	Can (advanced)	solve problems of professional activity in the field of drug circulation	Great	Able to solve professional problems in the field of drug circulation at a high level
			Fine	Able to solve problems of professional activity in the field of drug circulation at a sufficient level
			Satisfy impressive	Partially able to solve problems of professional activity in

				the field of drug circulation
			Dissatisfaction impressive	Does not know how to solve professional problems in the field of drug circulation
	Proficient (high level)	methods of compliance with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines	Great	Possesses at a high level methods of compliance with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
			Fine	Possesses at a sufficient level methods of compliance with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
			Satisfy impressive	Partially knows how to comply with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
			Dissatisfaction impressive	Does not know how to comply with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
GPC-3.2 Takes into account, when		economic and social factors	Great	Formed and systematic knowledge about

making management decisions, economic and social factors that influence the financial and economic activities of pharmaceutical organizations	Knows (threshold level)	influencing the financial and economic activities of pharmaceutical organizations		economic and social factors influencing the financial and economic activities of pharmaceutical organizations
			Fine	Formed, but containing individual gaps in knowledge about economic and social factors influencing the financial and economic activities of pharmaceutical organizations
			Satisfy impressive	Incomplete but systematic knowledge about economic and social factors influencing the financial and economic activities of pharmaceutical organizations
			Dissatisfaction impressive	Fragmentary, non-systematic knowledge about economic and social factors influencing the financial and economic activities of pharmaceutical organizations
	Can (advanced)	take into account economic and social factors when making management decisions	Great	Able to take into account economic and social factors at a high level when making management decisions
			Fine	Able to sufficiently take into account economic and social factors when making management decisions
			Satisfy impressive	Partially able to take into account economic and social factors when making management decisions

			Dissatisfaction impressive	Does not know how to take into account economic and social factors when making management decisions
	Proficient (high level)	methods of taking into account economic and social factors	Great	Has a high level of knowledge of methods for taking into account economic and social factors
			Fine	Has a sufficient level of knowledge of methods for taking into account economic and social factors
			Satisfy impressive	Knows partially the methods of taking into account economic and social factors
			Dissatisfaction impressive	Does not know methods of taking into account economic and social factors
OPK-3.3 Performs labor actions taking into account their impact on the environment, preventing the occurrence of environmental hazards	Knows (threshold level)	impact on the environment of their labor actions	Great	Formed and systematic knowledge about the impact of one's work actions on the environment
			Fine	Formed, but containing separate gaps in knowledge about the impact of one's work actions on the environment
			Satisfy impressive	Incomplete but systematic knowledge of the environmental impact of one's work activities
			Dissatisfaction impressive	Fragmentary, non-systematic knowledge about the environmental impact of one's work activities
	Can (advanced)	carry out work activities taking into account their	Great	Able to perform work activities at a high level, taking into

		impact on the environment		account their impact on the environment
			Fine	Able to perform work activities at a sufficient level, taking into account their impact on the environment
			Satisfy impressive	Partially able to perform work activities taking into account their impact on the environment
			Dissatisfaction impressive	Does not know how to perform work actions taking into account their impact on the environment
	Proficient (high level)	methods to counteract the emergence of environmental hazards	Great	Has a high level of knowledge of methods to counteract the emergence of environmental hazards
			Fine	Has a sufficient level of knowledge of methods to counteract the emergence of environmental hazards
			Satisfy impressive	Knows partially the methods of counteracting the emergence of environmental hazards
			Dissatisfaction impressive	Does not know methods of counteracting environmental hazards
OPK – 3.4 Determines and interprets the main environmental indicators of the state of the production environment during the production of medicines	Knows (threshold level)	main environmental indicators of the state of the production environment during the production of medicines	Great	Formed and systematic knowledge about the main environmental indicators of the state of the production environment in the production of medicines
			Fine	Formed, but containing individual gaps in knowledge about the main environmental

				indicators of the state of the production environment in the production of medicines
			Satisfy impressive	Incomplete but systematic knowledge about the main environmental indicators of the state of the production environment in the production of medicines
			Dissatisfaction impressive	Fragmentary, non-systematic knowledge about the main environmental indicators of the state of the production environment in the production of medicines
	Can (advanced)	determine and interpret the main environmental indicators of the state of the production environment during the production of medicines	Great	Able to identify and interpret at a high level the main environmental indicators of the state of the production environment during the production of medicines
			Fine	Able to sufficiently determine and interpret the main environmental indicators of the state of the production environment during the production of medicines
			Satisfy impressive	Partially able to identify and interpret the main environmental indicators of the state of the production environment during the production of medicines

			Dissatisfaction impressive	Does not know how to determine and interpret the main environmental indicators of the state of the production environment during the production of medicines
	Proficient (high level)	methods for determining and interpreting the main environmental indicators of the state of the production environment during the production of medicines	Great	Has a high level of knowledge of methods for determining and interpreting the main environmental indicators of the state of the production environment during the production of medicines
			Fine	Has a sufficient level of knowledge of methods for determining and interpreting the main environmental indicators of the state of the production environment during the production of medicines
			Satisfy impressive	Partially knows methods for determining and interpreting the main environmental indicators of the state of the production environment during the production of medicines
			Dissatisfaction impressive	Does not know methods for determining and interpreting the main environmental indicators of the state of the production environment during the production of medicines

PC-9.1. Determines the economic indicators of inventories of medicines and other pharmaceutical products	Knows (threshold level)	economic indicators of inventories of medicines and other pharmaceutical products	Great	Formed and systematic knowledge about the economic indicators of inventories of medicines and other pharmaceutical products
			Fine	Formed, but containing individual gaps in knowledge about the economic indicators of inventories of medicines and other pharmaceutical products
			Satisfy impressive	Incomplete but systematic knowledge of the economic indicators of inventories of medicines and other pharmaceutical products
			Dissatisfaction impressive	Fragmentary, non-systematic knowledge of the economic indicators of inventories of medicines and other pharmaceutical products
	Can (advanced)	determine the economic indicators of inventories of medicines and other pharmaceutical products	Great	Able to determine at a high level the economic indicators of inventories of medicines and other pharmaceutical products
			Fine	Able to sufficiently determine the economic indicators of inventories of medicines and other pharmaceutical products
			Satisfy impressive	Partially able to determine the economic indicators of

				inventories of medicines and other pharmaceutical products
			Dissatisfaction impressive	Does not know how to determine the economic indicators of inventories of medicines and other pharmaceutical products
	Proficient (high level)	methods for determining the economic indicators of inventories of medicines and other pharmaceutical products	Great	Has a high level of knowledge of methods for determining the economic indicators of inventories of medicines and other pharmaceutical products
			Fine	Has a sufficient level of knowledge of methods for determining the economic indicators of inventories of medicines and other pharmaceutical products
			Satisfy impressive	Partially knows methods for determining economic indicators of inventories of medicines and other pharmaceutical products
			Dissatisfaction impressive	Does not know methods for determining economic indicators of inventories of medicines and other pharmaceutical products
PC-9.2. Selects optimal suppliers and organizes procurement processes based on	Knows (threshold level)	theoretical basis for selecting optimal suppliers and organizing procurement	Great	Formed and systematic knowledge about the theoretical foundations for selecting optimal suppliers and

the results of market research of suppliers of medicines for medical use and other pharmaceutical products		processes based on the results of a market study of suppliers of medicines for medical use and other pharmaceutical products		organizing procurement processes based on the results of a market study of suppliers of medicines for medical use and other pharmaceutical products
			Fine	Formed, but containing individual gaps in knowledge about the theoretical foundations for selecting optimal suppliers and organizing procurement processes based on the results of a market study of suppliers of medicines for medical use and other pharmaceutical products
			Satisfy impressive	Incomplete but systematic knowledge of the theoretical foundations for selecting optimal suppliers and organizing procurement processes based on the results of a market study of suppliers of medicines for medical use and other pharmaceutical products
			Dissatisfaction impressive	Fragmentary, non-systematic knowledge about the theoretical foundations for selecting optimal suppliers and organizing procurement processes based on the results of a market study of suppliers of medicines for medical use and

				other pharmaceutical products
	Can (advanced)	select optimal suppliers and organize procurement processes based on the results of market research of suppliers of medicines for medical use and other pharmaceutical products	Great	Able to select optimal suppliers at a high level and organize procurement processes based on the results of market research of suppliers of medicines for medical use and other pharmaceutical products
			Fine	Able to select optimal suppliers at a sufficient level and organize procurement processes based on the results of a market study of suppliers of medicines for medical use and other pharmaceutical products
			Satisfy impressive	Partially knows how to select optimal suppliers and organize procurement processes based on the results of market research of suppliers of medicines for medical use and other pharmaceutical products
			Dissatisfaction impressive	Does not know how to select optimal suppliers and organize procurement processes based on the results of market research of suppliers of medicines for medical use and other pharmaceutical products
	Proficient (high level)	methods for selecting optimal suppliers and organizing procurement processes based on	Great	Has a high level of knowledge of methods for selecting optimal suppliers and organizing procurement processes

		the results of a market study of suppliers of medicines for medical use and other pharmaceutical products		based on the results of a market study of suppliers of medicines for medical use and other pharmaceutical products
			Fine	Has a sufficient level of knowledge of methods for selecting optimal suppliers and organizing procurement processes based on the results of a market study of suppliers of medicines for medical use and other pharmaceutical products
			Satisfy impressive	Partially knows methods for selecting optimal suppliers and organizing procurement processes based on the results of a market study of suppliers of medicines for medical use and other pharmaceutical products
			Dissatisfaction impressive	Does not know methods for selecting optimal suppliers and organizing procurement processes based on the results of a market study of suppliers of medicines for medical use and other pharmaceutical products
PC-9.3. Monitors the execution of contracts for the supply of medicines for medical use and other	Knows (threshold level)	theoretical basis for monitoring the execution of contracts for the supply of medicines for medical use and other	Great	Formed and systematic knowledge of the theoretical foundations of monitoring the execution of contracts for the supply of medicines for medical use and other

pharmaceutical products		pharmaceutical products		pharmaceutical products
			Fine	Formed, but containing individual gaps in knowledge about the theoretical basis for monitoring the execution of contracts for the supply of medicines for medical use and other pharmaceutical products
			Satisfy impressive	Incomplete but systematic knowledge of the theoretical basis for monitoring the execution of contracts for the supply of medicines for medical use and other pharmaceutical products
			Dissatisfaction impressive	Fragmentary, non-systematic knowledge of the theoretical basis for monitoring the execution of contracts for the supply of medicines for medical use and other pharmaceutical products
	Can (advanced)	monitor the execution of contracts for the supply of medicines for medical use and other pharmaceutical products	Great	Able to monitor at a high level the execution of contracts for the supply of medicines for medical use and other pharmaceutical products
			Fine	Able to sufficiently monitor the execution of contracts for the supply of medicines for medical use and other pharmaceutical products

			Satisfy impressive	Partially knows how to monitor the execution of contracts for the supply of medicines for medical use and other pharmaceutical products
			Dissatisfaction impressive	Does not know how to monitor the execution of contracts for the supply of medicines for medical use and other pharmaceutical products
	Proficient (high level)	methods for monitoring the execution of contracts for the supply of medicines for medical use and other pharmaceutical products	Great	Has a high level of control over the execution of contracts for the supply of medicines for medical use and other pharmaceutical products
			Fine	Has a sufficient level of control over the execution of contracts for the supply of medicines for medical use and other pharmaceutical products
			Satisfy impressive	Partially knows methods of monitoring the execution of contracts for the supply of medicines for medical use and other pharmaceutical products
			Dissatisfaction impressive	Does not know methods of monitoring the execution of contracts for the supply of medicines for medical use and other pharmaceutical products
PC-9.4. Conducts acceptance control		theoretical foundations of	Great	Formed and systematic knowledge of the

of incoming medicines and other pharmaceutical products, checking and completing accompanying documents in the prescribed manner	Knows (threshold level)	acceptance control of incoming medicines and other pharmaceutical products		theoretical foundations of acceptance control of incoming medicines and other pharmaceutical products
			Fine	Formed, but containing individual gaps in knowledge about the theoretical foundations of acceptance control of incoming medicines and other pharmaceutical products
			Satisfy impressive	Incomplete but systematic knowledge of the theoretical foundations of acceptance control of incoming medicines and other pharmaceutical products
			Dissatisfaction impressive	Fragmentary, non-systematic knowledge of the theoretical foundations of acceptance control of incoming medicines and other pharmaceutical products
	Can (advanced)	carry out acceptance control of incoming medicines and other pharmaceutical products, checking and completing accompanying documents in the prescribed manner	Great	Able to carry out high-level acceptance control of incoming medicines and other pharmaceutical products, checking and completing accompanying documents in the prescribed manner
			Fine	Able to carry out acceptance control of incoming medicines and other pharmaceutical

				products at a sufficient level, checking and completing accompanying documents in the prescribed manner
			Satisfy impressive	Partially knows how to carry out acceptance control of incoming medicines and other pharmaceutical products, checking and completing accompanying documents in the prescribed manner
			Dissatisfaction impressive	Does not know how to carry out acceptance control of incoming medicines and other pharmaceutical products, checking and completing accompanying documents in the prescribed manner
	Proficient (high level)	methods of acceptance control of incoming medicines and other pharmaceutical products, checking and preparing accompanying documents in the prescribed manner	Great	Possesses at a high level methods of acceptance control of incoming medicines and other pharmaceutical products, checking and preparing accompanying documents in the prescribed manner
			Fine	Has a sufficient level of acceptance control methods for incoming medicines and other pharmaceutical products, checking and completing accompanying documents in the prescribed manner

			Satisfy impressive	Partially knows methods of acceptance control of incoming medicines and other pharmaceutical products, checking and preparing accompanying documents in the prescribed manner
			Dissatisfaction impressive	Does not know methods of acceptance control of incoming medicines and other pharmaceutical products, checking and completing accompanying documents in the prescribed manner
PC-9.5. Conducts withdrawal from circulation of medicines and pharmaceutical products that have become unusable, expired, falsified, counterfeit and substandard products	Knows (threshold level)	theoretical basis for the withdrawal from circulation of medicines and pharmaceutical products that have become unusable, expired, falsified, counterfeit and substandard products	Great	Formed and systematic knowledge about the theoretical basis for the withdrawal from circulation of medicines and pharmaceutical products that have become unusable, expired, falsified, counterfeit and substandard products
			Fine	Formed, but containing separate gaps in knowledge about the theoretical basis for the withdrawal from circulation of medicines and pharmaceutical products that have become unusable, expired, falsified, counterfeit and substandard products
			Satisfy impressive	Incomplete but systematic knowledge about the theoretical basis for the

				withdrawal from circulation of medicines and pharmaceutical products that have become unusable, expired, falsified, counterfeit and substandard products
			Dissatisfaction impressive	Fragmentary, non-systematic knowledge about the theoretical basis for the withdrawal from circulation of medicines and pharmaceutical products that have become unusable, expired, falsified, counterfeit and substandard products
	Can (advanced)	carry out the withdrawal from circulation of medicines and pharmaceutical products that have become unusable, expired, falsified, counterfeit and substandard products	Great	Able to carry out, at a high level, the withdrawal from circulation of medicines and pharmaceutical products that have become unusable, expired, falsified, counterfeit and substandard products
			Fine	Able to carry out at a sufficient level the withdrawal from circulation of medicines and pharmaceutical products that have become unusable, expired, falsified, counterfeit and substandard products
			Satisfy impressive	Partially knows how to withdraw from circulation medicines and pharmaceutical products that have

				become unusable, expired, falsified, counterfeit and substandard products
			Dissatisfaction impressive	Does not know how to withdraw from circulation medicines and pharmaceutical products that have become unusable, expired, falsified, counterfeit and substandard products
	Proficient (high level)	methods of removing from circulation medicines and pharmaceutical products that have become unusable, expired, falsified, counterfeit and substandard products	Great	Has a high level of knowledge of methods for removing from circulation medicines and pharmaceutical products that have become unusable, expired, falsified, counterfeit and substandard products
			Fine	Has a sufficient level of knowledge of methods for removing from circulation medicines and pharmaceutical products that have become unusable, expired, falsified, counterfeit and substandard products
			Satisfy impressive	Knows partially the methods of removing from circulation medicines and pharmaceutical products that have become unusable, expired, falsified, counterfeit and substandard products
			Dissatisfaction impressive	Does not know methods of removing from circulation medicines and pharmaceutical

				products that have become unusable, expired, falsified, counterfeit and substandard products
PC-9.6. Carries out subject-quantitative accounting of medicines in the prescribed manner	Knows (threshold level)	theoretical foundations of subject-quantitative accounting of medicines in the prescribed manner	Great	Formed and systematic knowledge about the theoretical foundations of subject-quantitative accounting of medicines in the prescribed manner
			Fine	Formed, but containing individual gaps in knowledge about the theoretical foundations of subject-quantitative accounting of medicines in the prescribed manner
			Satisfy impressive	Incomplete, but systematic knowledge of the theoretical foundations of subject-quantitative accounting of medicines in the prescribed manner
			Dissatisfaction impressive	Fragmentary, non-systematic knowledge of the theoretical foundations of subject-quantitative accounting of medicines in the prescribed manner
	Can (advanced)	carry out subject-quantitative accounting of medicines in the prescribed manner	Great	Able to carry out subject-quantitative accounting of medicines in accordance with the established procedure at a high level
			Fine	Able to carry out subject-quantitative accounting of medicines in the prescribed manner at a sufficient level

			Satisfy impressive	Partially knows how to carry out subject-quantitative accounting of medicines in the prescribed manner
			Dissatisfaction impressive	Does not know how to carry out subject-quantitative accounting of medicines in the prescribed manner
	Proficient (high level)	methods of subject-quantitative accounting of medicines in the established order	Great	Has a high level of knowledge of methods of subject-quantitative accounting of medicines in the prescribed manner
			Fine	Has a sufficient level of knowledge of methods of subject-quantitative accounting of medicines in the prescribed manner
			Satisfy impressive	Partially proficient in methods of subject-quantitative accounting of medicines in the prescribed manner
			Dissatisfaction impressive	Does not know the methods of subject-quantitative accounting of medicines in the prescribed manner
PC-9.7. Organizes control over the availability and storage conditions of medicines for medical use and other pharmaceutical products	Knows (threshold level)	theoretical basis for monitoring the availability and storage conditions of medicines for medical use and other pharmaceutical products	Great	Formed and systematic knowledge of the theoretical basis for monitoring the availability and storage conditions of medicines for medical use and other pharmaceutical products
			Fine	Formed, but containing individual gaps in knowledge about the theoretical basis for monitoring the availability and storage

				conditions of medicines for medical use and other pharmaceutical products
			Satisfy impressive	Incomplete but systematic knowledge of the theoretical basis for monitoring the availability and storage conditions of medicines for medical use and other pharmaceutical products
			Dissatisfaction impressive	Fragmentary, non-systematic knowledge of the theoretical basis for monitoring the availability and storage conditions of medicines for medical use and other pharmaceutical products
	Can (advanced)	organize control over the availability and storage conditions of medicines for medical use and other pharmaceutical products	Great	Able to organize high-level control over the availability and storage conditions of medicines for medical use and other pharmaceutical products
			Fine	Able to sufficiently organize control over the availability and storage conditions of medicines for medical use and other pharmaceutical products
			Satisfy impressive	Partially able to organize control over the availability and storage conditions of medicines for medical use and other

				pharmaceutical products
			Dissatisfaction impressive	Does not know how to organize control over the availability and storage conditions of medicines for medical use and other pharmaceutical products
	Proficient (high level)	methods for monitoring the availability and storage conditions of medicines for medical use and other pharmaceutical products	Great	Has a high level of control over the availability and storage conditions of medicines for medical use and other pharmaceutical products
			Fine	Has a sufficient level of control over the availability and storage conditions of medicines for medical use and other pharmaceutical products
			Satisfy impressive	Partially knows methods of monitoring the availability and storage conditions of medicines for medical use and other pharmaceutical products
			Dissatisfaction impressive	Does not know methods of monitoring the availability and storage conditions of medicines for medical use and other pharmaceutical products

Criteria for grading a student in a practical test

Assessment	Requirements for developed competencies
"Great"	The student demonstrates deep knowledge of scientific and technical documentation. The practice diary and reporting documents are

	prepared by the student in accordance with the requirements of this work program.
"Fine"	The student demonstrates deep knowledge of scientific and technical documentation. However, there were some mistakes in the answer, which were corrected by the student with the help of the teacher. The practice diary and reporting documents are prepared by the student in accordance with the requirements of this work program.
"satisfactorily"	The student demonstrates insufficient knowledge of scientific and technical documentation and makes mistakes. The practice diary and reporting documents are prepared by the student in accordance with the requirements of this work program.
"unsatisfactory"	The student gives an incomplete answer, representing scattered knowledge on the topic of the question with significant errors. The diary and reporting documents are partially completed.

A student who fails to complete the internship program for a valid reason is sent to practice again during his free time from class.

A student who fails to complete the internship program without a valid reason or receives an unsatisfactory grade is considered to have academic debt.

The liquidation of this debt is carried out in accordance with the regulatory documents of the Far Eastern Federal University.

Typical tasks for assessing knowledge, skills, abilities and experience

During the internship, the student must complete an individual task to study individual areas of work or activities of the organization, solve specific problems in the interests of the practice base and FEFU.

Individual practice assignment in management and economics of pharmaceutical organizations:

Organizational work in the workplace

1. At the pharmacist’s workplace for taking prescriptions and dispensing medications according to them.

For this section of practice, the student must:

Write down at least 1 prescription per day in the diary with a check of doses, examples for all types of prescription forms and features of the design of prescriptions containing narcotic, preferential, free, poisonous, potent drugs, as well as alcohol, etc.;

Complete the following documents:

- completed prescription log form;
- log of incorrectly written prescriptions;

- forms for recording prescriptions for preferential dispensing of drugs;
- other documents used in the organization.

2. At the pharmacist's workplace in the department of receipt and storage of supplies.

The student must study and fill out the following documents:

- log of receipt of goods;
- logbook for drugs with a limited shelf life, MIBP;
- log of air temperature and humidity.

3. At the pharmacist's workplace in the department of finished medicines and over-the-counter dispensing of pharmaceutical products.

The student must study and fill out the following documents:

- registration log or register of received invoices for goods;
- department revenue register;
- cashier-operator's journal;
- documents on the movement of goods in the department;
- commodity report of the materially responsible person.

Organizational, analytical, commercial activities in the workplace of the head (director) of the organization and his deputy

For this section of practice, the student must fill out and submit the following documents:

- application for a job;
- employment contract;
- employment order;
- HR registration card T-2;
- a copy of the work book;
- a copy of the specialist's certificate;
- collective agreement on financial responsibility;
- cashier's obligation;
- order of dismissal from work;
- employee work schedule;
- vacation schedule;

- a copy of the license for pharmaceutical activities;
- functional job description;
- instructions on labor protection, safety precautions, fire safety measures.

Maintaining accounting, reporting operations, documentation for economic, financial and commercial activities

The student must complete and have the following documents in the prescribed form:

- register of medicines subject to subject-quantitative
- accounting;
- register of narcotic drugs and psychotropic substances;
- report on the consumption and balances of narcotic drugs and psychotropic substances (quarterly or semi-annually);
- journal of laboratory and laboratory-packing work;
- certificate of additional valuation and markdown for laboratory and packaging work;
- log of consumption of medical goods for household needs;
- requirements for narcotic drugs and psychotropic substances;
- invoices, internal invoices for the movement of goods;
- recipe log;
- journal for accounting for wholesale sales and settlements with customers;
- commodity report of materially responsible persons;
- pharmacy report;
- cashier-operator's journal and cash report;
- act of withdrawing money from the cash register;
- inventory sheets;
- calculation of the rate of natural loss (based on the amount of goods and weight substances subject to subject-quantitative accounting);
- act of inventory results;
- act on damage, damage, defects of inventory items;
- act on the destruction of inventory items that have become unusable.

Typical test questions for preparing to defend your practice report:

1. The main tasks and functions of pharmacy organizations.

2. Forms and styles of pharmacy team management.

3. Main types of management communications.

4. Organizational structure of the pharmacy.

5. Organization of the pharmacist-technologist's workplace.

6. Pharmacy production activities.

7. Information work in the pharmacy.

8. Safety precautions.

9. Quality control of medicines. Types of intrapharmacy control.

10. Inventory of inventory items.

11. Prescription release of finished dosage forms.

12. Accounting for the dispensing of medicines using free and reduced-price prescriptions.

13. NOT in pharmacies: stages of implementation. Rational organization and certification of workplaces. Occupational hygiene.

14. Licensing of pharmaceutical activities not related to the circulation of narcotic drugs and psychotropic substances.

15. Licensing of pharmaceutical activities related to the circulation of narcotic drugs and psychotropic substances.

16. Pharmaceutical examination of a prescription. Incorrectly written prescriptions.

17. Determining the need and studying the demand for medicines. Formation of an assortment of pharmaceutical products.

18. Principles of storage of medicines.

19. Preparation of documents for the primary accounting of inventory items.

20. Rules for registration and shelf life of dosage forms manufactured in a pharmacy.

21. Window decoration.

22. Subject-quantitative accounting of medicines

23. Contents and structure of the balance sheet, synthetic, analytical accounts, sub-accounts.

24. Validity and storage periods of prescriptions.

25. Sanitary requirements for pharmacy premises and equipment.

26. Deontology with visitors (patients). Deontology with medical professionals.

27. Accounting for laboratory and packaging work.

28. Reference and information fund.

29. Nomenclature of positions for pharmacy specialists.

30. Accounting for receipt of goods.

31. Stages of document flow. Document details. Nomenclature and registration of cases.

32. Organizational and administrative documentation.

33. Rules for taking prescriptions and dispensing medications according to them.

34. The procedure for free and preferential dispensing of medicines.

35. Actions upon detection of shortages, surpluses, damage, damage and defects of goods.

36. Protection of the rights of consumers of medicines: complaints and statements.

37. Procedure for hiring and transferring to another job.

38. Receiving goods at the pharmacy.

39. Financial responsibility. Cashier's responsibilities.

40. Documentation of the consumption of inventory items for household needs and provision of first aid.

41. Organizational structure of a pharmaceutical wholesale trade enterprise.

42. Preparation of a prescription journal (receipt book).

43. Rules for prescribing narcotic, poisonous and potent drugs, psychotropic substances

44. Characteristics of types of reporting. Product report: structure and frequency.

45. Legal basis of pharmaceutical activities.

46. General characteristics of distribution costs.

47. Rules for the destruction of narcotic drugs and expired drugs and counterfeit drugs.

48. Ensuring the quality of medicines - preventive measures.

49. The procedure for pricing medicines in the Russian Federation.

50. Report on work on quality control of medicines.

51. Taxation of recipes.

52. Functions of pharmaceutical wholesalers.

53. Handling and storing dishes.

54. Incoming and outgoing cash transactions.

55. Classification and rationing of inventory.

56. Payroll.

57. Selecting suppliers of pharmaceutical products.

58. Accounting for the movement of materials, low-value and wearable items.

59. Gross income (turnover) and profit - the influence of the main factors. Taxation of profits.

60. Over-the-counter sales of medicines and their advertising.

61. Organization of storage of flammable and explosive medicines.
62. Certification of medicines.
63. Planning trade overlays.
64. Organization of the work of a small retail network.
65. Planning of turnover (gross income).
66. Methods for studying labor costs.
67. Functional job description.
68. Internal regulations.
69. Distribution costs: concept, analysis.

Head of OP  Shokur O.A.

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)
Institute of Life Sciences and Biomedicine (School)

Department of Pharmacy and Pharmacology

Full Name

REPORT

Internship. Practice in management and economics of pharmaceutical organizations

specialty 05/33/01 Pharmacy

The author of the work is student gr._____
signature
"_" _____ 202_
Head of practice from FEFU Institute of Housing and Mechanical Engineering
_____
(position, academic title)

_____
(signature) (I.O.F)
"_"_____202_

The report is protected with a rating

_____

_____
(signature) (I.O.F)
"_" _____202_

Vladivostok
202_

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)
Institute of Life Sciences and Biomedicine (School)

Department of Pharmacy and Pharmacology

Full Name

DIARY

undergoing practical training
Internship. Practice in management and economics of pharmaceutical organizations
student_____course

_____
(Full name.)

specialty 05/33/01 Pharmacy

Place of practice_____
_____

Practice time:
Start
_____
ending
_____
Head of practice:
from the university
_____
from the enterprise
_____
M.p.

Vladivostok
202_g.

THE FIRST DAY	
date	
day of the week	
place of work (department)	
content of the work (description of the process)	
compliance with schedule	
grade	

signature of the practice manager from enterprises	
SECOND DAY	
date	
day of the week	
place of work	
content of the work (description of the process)	
compliance with schedule	
grade	

signature of the practice manager from the company	
DAY THREE	
date	
day of the week	
place of work	
content of the work (description of the process)	

compliance with schedule	
grade	
signature of the practice manager from the company	

DAY FOUR	
date	
day of the week	
place of work	
content of the work (description of the process)	

compliance with schedule	
grade	
signature of the practice manager from the company	

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)

INSTITUTE OF LIFE SCIENCES AND BIOMEDICINE (SCHOOL)

I APPROVED
Director of the Institute of Life Sciences and Biomedicine (School)

_____ Yu.S. Khotimchenko
Full name

"06" December 2022

WORK PROGRAM FOR PRODUCTION PRACTICEPractice in pharmaceutical consulting and information

05/33/01 Pharmacy

Specialty program "Clinical and Experimental Pharmacy (in English)"

Vladivostok
2022

1. OBJECTIVES OF DEVELOPING PRODUCTION PRACTICES

Objectives of industrial practice:

- consolidation, expansion and improvement of theoretical knowledge in the field of pharmaceutical information and consulting;
- use of methods for obtaining and transmitting pharmaceutical information;
- fostering objectivity and professionalism in students in the perception and evaluation of information, as well as providing it to various categories of consumers;
- development of skills in providing effective pharmaceutical care in the aspect of information and consultation;
- development of personal selling skills;
- formation of a model of information services for visitors;
- preparing students as highly qualified specialists to perform the functions of coordinator, consultant, and partner in providing pharmaceutical care to the population.

2. TASKS OF PRODUCTION PRACTICE

The objectives of the practice “Industrial practice. Pharmaceutical consulting and information practice" are:

- mastering the elements of providing pharmaceutical information and consulting services;
- acquisition of personal selling skills;
- formation of an individual model of information services for visitors of various categories;
- obtaining by future pharmacists deep practical skills in providing pharmaceutical care in the aspect of information and consultation.

3. PLACE OF PRODUCTION PRACTICE IN THE STRUCTURE OF EP

"Internship. “Practice in pharmaceutical consulting and information” is an integral part of the main professional educational program, is included in block B2 “Practice” of the curriculum and is mandatory.

4. TYPES, METHODS, PLACE AND TIMES OF PRODUCTION PRACTICE

Type of practice – industrial practice.

Type of practice - Practice in pharmaceutical consulting and information

Method of conducting: away.

The form of practice is concentrated.

In accordance with the schedule of the educational process, practice is implemented in semester 9 and semester A.

The place of practice is pharmacy institutions (Monastyrev.rf, NefRos LLC, City United Social Pharmacy LLC, Latona Limited Liability Company).

5. STUDENT COMPETENCIES FORMED AS A RESULT OF COMPLETING PRODUCTION PRACTICE

Professional competencies of graduates and indicators of their achievement:

Task type	Code and name of professional competence (result of mastery)	Code and name of the competency achievement indicator
Adaptation to production conditions	OPK-3 Able to carry out professional activities taking into account specific economic, environmental, social factors within the framework of the system of legal regulation of the sphere of circulation of medicines	GPC-3.1 Complies with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
		GPC-3.2 Takes into account, when making management decisions, economic and social factors that influence the financial and economic activities of pharmaceutical organizations
		OPK-3.3 Performs labor actions taking into account their impact on the environment, preventing the occurrence of environmental hazards
		OPK-3.4 Determines and interprets the main environmental indicators of the state of the production environment during the production of medicines
Organizational and managerial	PC-7 Able to provide pharmaceutical information and consultation during the dispensing and sale of drugs for medical use	PC-7.1 Provides information and consulting assistance to visitors of a pharmacy organization when choosing medications and other pharmaceutical products, as well as on issues of their rational use, taking into account the biopharmaceutical features of dosage forms

	and other pharmaceutical products	PC-7.2 Informs medical workers about medications, their synonyms and analogues, possible side effects and interactions, taking into account the biopharmaceutical features of dosage forms
		PC-7.3 Makes a decision on replacing a prescribed medicinal product with synonymous or similar drugs in the prescribed manner based on information about groups of medicinal products and synonyms within one international nonproprietary name and their prices, taking into account the biopharmaceutical features of dosage forms

Code and name of the competency achievement indicator	Name of the assessment indicator (result of training by practice)
GPC-3.1 Complies with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines	Knows the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
	Able to solve problems of professional activity in the field of drug circulation
	Knows methods of compliance with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
GPC-3.2 Takes into account, when making management decisions, economic and social factors that influence the financial and economic activities of pharmaceutical organizations	Knows the economic and social factors that influence the financial and economic activities of pharmaceutical organizations
	Able to take into account economic and social factors when making management decisions
	Knows methods of taking into account economic and social factors
OPK-3.3 Performs labor actions taking into account their impact on the environment, preventing the occurrence of environmental hazards	Knows the environmental impact of his work activities
	Able to perform work activities taking into account their impact on the environment
	Knows methods of counteracting environmental hazards

OPK-3.4 Determines and interprets the main environmental indicators of the state of the production environment during the production of medicines	Knows the main environmental indicators of the state of the production environment during the production of medicines
	Able to identify and interpret the main environmental indicators of the state of the production environment during the production of medicines
	Knows methods for determining and interpreting the main environmental indicators of the state of the production environment during the production of medicines
PC-7.1 Provides information and consulting assistance to visitors of the pharmacy organization when choosing medications and other pharmaceutical products, as well as on issues of their rational use, taking into account the biopharmaceutical features of dosage forms	Knows the basics of information and consulting assistance to visitors of a pharmacy organization when choosing medications and other pharmaceutical products, as well as on issues of their rational use, taking into account the biopharmaceutical features of dosage forms
	Able to provide information and consulting assistance to visitors of a pharmacy organization when choosing medications and other pharmaceutical products, as well as on issues of their rational use, taking into account the biopharmaceutical features of drugs
	Knows methods of providing information and consulting assistance to visitors of a pharmacy organization when choosing medications and other pharmaceutical products, as well as on issues of their rational use, taking into account the biopharmaceutical features of dosage forms
PC-7.2 Informs medical workers about medications, their synonyms and analogues, possible side effects and interactions, taking into account the biopharmaceutical features of dosage forms	Knows the need to inform medical workers about medications, their synonyms and analogues, possible side effects and interactions, taking into account the biopharmaceutical features of dosage forms
	Able to convey information to medical workers about medications, their synonyms and analogues, possible side effects and interactions, taking into account the biopharmaceutical features of dosage forms
	Knows methods of presenting information to medical professionals about drugs, their synonyms and analogues, possible side effects and interactions, taking into account the biopharmaceutical features of dosage forms
PC-7.3 Makes a decision on replacing a prescribed medicinal product with synonymous or similar drugs in the prescribed manner based on information about groups of medicinal products and synonyms within one international nonproprietary name and their prices, taking into account the biopharmaceutical features of dosage forms	Knows about the possibility of replacing a prescribed drug with synonymous or similar drugs in the prescribed manner based on information about groups of drugs and synonyms within one international nonproprietary name and their prices, taking into account the biopharmaceutical features of dosage forms
	Able to make decisions on replacing a prescribed drug with synonymous or similar drugs in the prescribed manner based on information about groups of drugs and synonyms within one international nonproprietary name and their prices, taking into account the biopharmaceutical features of dosage forms

	Has the necessary knowledge about replacing a prescribed drug with synonymous or similar drugs in the prescribed manner based on information about groups of drugs and synonyms within one international nonproprietary name and their prices, taking into account the biopharmaceutical features of dosage forms

6. STRUCTURE AND CONTENT OF PRACTICE, INCLUDING PRACTICAL TRAINING

The total labor intensity of the practice is 6 credits, 216 hours.

Practice structure

No.	Stages of practice	Types of work in practice, including practical training and independent work of students	Labor intensity of SR/KSR (in hours)	Current control form
1	Preparatory stage	-Safety training. Review lecture on pharmaceutical consulting and information. -Determining the goals and objectives of the practice, issuing equipment. -Drawing up a diary.	2/10	Daily monitoring of the student's stay in practice and completion of practical assignments
2	Experimental stage	Description of the activities of a pharmacy organization - base of practice: compliance with the norms and rules established by authorized government bodies when solving problems of professional activity in the organization of pharmaceutical consulting and information during the dispensing of medicines	4/30	Daily monitoring of the student's stay in practice and completion of practical assignments
3	Experimental stage	Carrying out search and analytical tasks to compile a review of literature sources within the framework of pharmaceutical information and consulting.	4/36	Daily monitoring of the student's stay in practice and completion of practical assignments
4	Experimental stage	Performing the duties of a pharmacist to provide information and consulting assistance to visitors of a pharmacy organization when choosing, as well as issues of rational use of medications and	10/20	Daily monitoring of the student's

		other pharmaceutical products; making a decision to replace a prescribed medicinal product with synonymous or similar drugs based on information about groups of medicinal products and synonyms within one international nonproprietary name.		stay in practice and completion of practical assignments
5	Experimental stage	Performing the duties of a pharmacist to inform medical workers about medications, their synonyms and analogues, possible side effects and interactions, taking into account the biopharmaceutical features of dosage forms In the final part of the report, the student must briefly formulate the main conclusions and give specific proposals for improving the work of the pharmaceutical organization in providing pharmaceutical consulting and information.	10/22	Daily monitoring of the student's stay in practice and completion of practical assignments
6	Processing and analysis of received information.	Theoretical (descriptive) material, which includes a search (selection) or review of literature sources on modern approaches to pharmaceutical counseling and information;	10/17	Daily monitoring of the student's stay in practice and completion of practical assignments
7	Processing and analysis of received information.	Practical material for the theoretical part, presented in the form of graphs, diagrams, tables or questionnaires, should contain information on the frequency of requests to the pharmacy for the dispensing of medications for patients of various age groups	10/19	Daily monitoring of the student's stay in practice and completion of practical assignments
8	Final	Preparation of reporting documentation on practice and passing the test.	4/8	Practice diary, practice report
		Total:	54/162	

Contents of practice

No.	Section name	Section Contents
1	Rules and requirements for pharmaceutical consultation and information. Pharmaceutical consultation for ENT diseases.	Key aspects of pharmaceutical consulting 1. Determine the need for special conditions for drug release. 2. Indicate the need for prescription drugs. 3. Determine the visitor's problem and ask clarifying questions. 4. Indicate the need for a mandatory visit to a specialist. 5. Clarify the special characteristics of the patient (age, pregnancy, chronic diseases, medications, etc.). 6. Name the pharmacotherapeutic group and effect of the drug. 7. Suggest drugs as an alternative and justify your proposals. 8. Inform about the rules of admission, the course of therapy.

		9. Inform about interactions with food. 10. Inform about storage rules. 11. Inform about side effects. Requirements for pharmaceutical consulting 1. Professionalism. 2. Security. 3. Efficiency. 4. Personal approach, accessibility for the patient. 5. Sufficiency. 6. Rationality. 7. The need to mention consultation with a doctor. 8. Use of the current regulatory framework. 9. Offer to purchase the drug. Classification of infectious ENT diseases. Principles of treatment of infectious diseases. Antimicrobial therapy. Classification of antimicrobial agents. Disinfectants. Chemotherapeutic agents. Antibacterial drugs. Clinical pharmacology of penicillins, aminoglycosides, sulfonamide drugs. Rhinitis. Etiology. Clinical picture. Characteristics of the decongestant group. Pharmacokinetics and pharmacodynamics of drugs. Features of use for adults and children. Otitis. Sore throats. Clinical pharmacology of drugs used for rhinitis, tonsillitis, otitis.
2	Pharmaceutical consultation for chronic bronchitis.	Bronchitis. Definition. Etiology. Pathogenesis. Clinical picture. Medicines. Used for chronic bronchitis. Etiotropic therapy. Antibiotics. Symptomatic therapy. Antitussive and expectorant drugs. Pharmacokinetics and pharmacodynamics. Side effects. Contraindications. Interactions with other drugs. 1. The concept of broncho-obstructive biofeedback syndrome. 2. Bronchodilators. Classification. Key application points. 3. Adrenergic agonists: universal, non-selective, selective. Classification, pharmacokinetics, pharmacodynamics, features of use in children. 4. Clinical pharmacology of combined β2 agonists. 5. Ephedrine isomers, combined ephedrine preparations. Safety of their use. 6. Main contraindications for use through various routes of administration. 7. M-anticholinergics. Classification, pharmacokinetics, pharmacodynamics. 8. Clinical pharmacology of theophylline group drugs. 9. Mast cell membrane stabilizers. Classification, pharmacokinetics, pharmacodynamics. 10. Leukotriene receptor inhibitors. Classification, pharmacokinetics, pharmacodynamics. 11. The main causes of cough. 12. Types of cough. Stages of cough 13. Clinical pharmacology of antitussive drugs (central and peripheral action). Features of dispensing from a pharmacy. 14. Clinical pharmacology of expectorants (resorptive, reflex and mixed action). Herbal preparations. 15. Clinical pharmacology of mucolytics (bromhexine, ambraxol, acetylcesteine, carbocisteine, erdosteine). 16. Features of the use of expectorants and mucolytics in children.

3	Principles of chemotherapy for infectious diseases. Principles of treatment of infectious diseases. Rules of antibiotic therapy. Pharmaceutical consultation of patients with viral diseases (FLU, ARVI).	Antiviral drugs (amixin, ingavirin, kagocel), immunomodulatory. Interferon-based drugs. Symptomatic treatment of colds. Antipyretics, NSAIDs, antihistamines. Vasoconstrictors. Cough suppressants. Expectorant drugs.
4	Pharmaceutical consulting in dermatology.	Principles of a clinical-pharmacological approach to the selection of groups of drugs for the pharmacotherapy of major diseases, principles of a clinical-pharmacological approach to the selection of groups of drugs for the pharmacotherapy of major diseases, know the basic scientific literature, information necessary for solving professional problems; 1. Endogenous and exogenous factors contributing to the occurrence of mycoses. 2. Characteristics of dermatophytosis depending on the predominant damage to the skin, hair or nails 3. “Threatening” symptoms of mycoses, requiring the patient to consult a doctor. 4. General recommendations for patients with fungal skin infections. 5. General approaches to treating superficial fungal infections 6. Over-the-counter topical antifungals 7. Principles of rational use of external over-the-counter antifungal drugs.
5	Pharmaceutical consultation for symptomatic treatment of gastrointestinal dysfunctions	To train students in the methodology for selecting groups and a specific drug, taking into account data on pharmacokinetics, pharmacodynamics, interactions, adverse drug reactions and the formulary system for diseases of the gastrointestinal tract in accordance with the form of the disease, the severity of the main clinical syndromes and the severity of the patient’s condition. To teach the rational combination of medications used for this pathology. Clinical and pharmaceutical characteristics of the main groups of laxatives 1. Drugs that inhibit water absorption and enhance intestinal motility (contact laxatives) Drugs that stimulate intestinal motility constitute the largest group of laxatives. A significant part of this group is represented by herbal preparations, which include anthraglycosides. 1.2. Drugs - diphenylmethane derivatives (isafenin, bisacodyl) stimulate receptors in the colon wall through direct contact with the intestinal mucosa. As a result, the secretion of mucus in the colon increases, its peristalsis accelerates and intensifies. 1.3. Synthetic drugs of other groups (sodium picosulfate) are activated in the colon under the influence of bacterial sulfatases, and the resulting substance stimulates the nerve endings of the intestinal mucosa, enhancing its motility. 1.4. Osmotic laxatives --. Lactulose. Forlax. 1.5. Castor oil in the small intestine is broken down by lipase to form ricinoleic acid and glycerol, which irritate intestinal receptors throughout the entire length of the intestine and reflexively enhance its peristalsis.

		2. Agents that increase the volume of intestinal contents - "fillers" A large group of laxatives that increase the volume of intestinal contents includes plant fibers and hydrophilic colloids (osmotic laxatives). 3. Agents that lubricate the intestinal mucosa, soften stool Vaseline oil (liquid paraffin) Drugs that reduce and enhance gastric secretion: M-anticholinergics (atropine, gastrocepin); H2-histamine blockers (cimetidine, ranitidine, famotidine); antacids (almagel, phosphalugel, sodium bicarbonate, aluminum hydroxide); astringents and coating agents (vicalin, vikair), proton pump inhibitors (omeprazole, rabeprozole); enzymatic and antienzymatic (proteolysis inhibitors) drugs (pankurmen, panzinorm, festal, trasylol, contrical, gordox); choleretics and cholikinetics (allochol, cholenzyme), hepatoprotectors (legalon, essentiale); Drugs that change the motility of the gastrointestinal tract (selective blocker of calcium channels located in the smooth muscle cells of the intestine and biliary tract - dicetel, kellin, papaverine, platifillin);
6	Pharmaceutical consultation for patients with various pain syndromes. Clinical pharmacology of analgesics and NSAIDs.	Types of pain. Classification of NSAIDs. NSAIDs with pronounced anti-inflammatory activity. Pharmacodynamics. Main effects. Indications for use Warnings. Adverse reactions. Contraindications. Effect on the gastrointestinal tract. Rules for prescription and dosage. Drug interactions. Over-the-counter use of NSAIDs. Characteristics of individual drugs. Comparative characteristics. Simple or traditional - pyrozolones and preparations based on their derivatives (Spazgan, Spazmolgon, Analgin, Tempalgin, Baralgin, etc.); combined - include several active components that have an analgesic effect; As a rule, this is a combination of paracetamol with some synthetic substance, providing not only analgesic, but also antipyretic and antispasmodic effects (Pentalgin, Ibuklin, Vicks Active Symptomax, Caffetin, Trigan, etc.); drugs for migraine attacks - as a rule, migraine cannot be relieved with conventional analgesics, so in this case drugs are used that additionally have antispasmodic and vasodilating properties (Sumatriptan, Frovatriptan, Relpax, etc.); non-steroidal anti-inflammatory drugs (NSAIDs) – effective in relieving pain, fever and inflammation; used for headaches, toothache, diseases of the joints and spine, osteochondrosis, arthrosis, rheumatism and other pathologies accompanied by inflammation and pain (Nurofen, Ibuprofen, Nalgesin, Ketorol, Ketanov, Dolomin, Naproxen, etc.); COX-2 inhibitors (coxibs) - belong to the group of NSAIDs, but are separated into a separate subgroup of drugs that protect the gastric mucosa and do not have a negative effect on the gastrointestinal tract; used to relieve pain from gastritis and ulcers, as well as joint diseases (Parecoxib, Etoricoxib, Celecoxib, Omeprazole); antispasmodics - painkillers that relax smooth muscles and dilate blood vessels, which provides analgesia (Drotaverine hydrochloride, No-shpa, Nomigren).
7	Pharmaceutical consulting on the choice of	1. Features of drug pharmacokinetics in the elderly: absorption and distribution of drugs. 2. Features of drug metabolism in the elderly.

	medications for the elderly and children	3. Features of drug removal in the elderly. 4. Features of pharmacodynamics of drugs in the elderly. 5. Adverse drug reactions in the elderly. 6. Correction of drug doses in elderly and senile people. 7. Features of prescribing medications in old age. 8. Basic principles of prescribing medications in the elderly. 9. Antihypertensive therapy in elderly and senile people. 10. Antimicrobial therapy for elderly and senile people. 11. Features of pharmacotherapy for elderly patients with severe renal failure.
8	Pharmaceutical counseling for patients with allergy symptoms.	Clinical manifestations of drug allergies. Principles for selecting individual drugs from the group of H1-receptor blockers in various clinical situations. Clinical and pharmacological approaches to the selection and use of drugs for allergic urticaria Classification of antihistamines • First generation drugs: - chloropyramine (suprastin); - clemastine (tavegil); - ketotifen. • Second generation drugs: - loratadine; - cetirizine; - ebastine; - azelastine. • Third generation drugs: - fexofenadine. Pharmacodynamics. Adverse adverse reactions. Interactions with other drugs.
9	Pharmaceutical advice on the use of oral hormonal contraceptives	Types of hormonal contraceptives 1. Combined estrogen-progestogen drugs. 2. Mini-pill. 3. Injectable drugs. 4. Subcutaneous implants. 5. Hormonal ring for vaginal use. 6. Contraceptive patch. 7. Postcoital drugs. Combined drugs are contraceptive pills containing substances similar to female hormones that are produced by the ovaries - estrogens and gestagens (progestins). Depending on the proportion of these substances there are: •monophasic: contain 21 tablets with the same amount of estrogen and gestagen. •biphasic: contain 21 tablets with two different combinations of estrogen and progestogen. •triphasic: contain 21 tablets with three different combinations of estrogen and progestogen and differ in color. Their intake completely imitates the secretion of female hormones during a woman’s normal menstrual cycle. Side effects: •amenorrhea (absence of menstrual-like bleeding at the end of the cycle); •intermenstrual bleeding and spotting; •depression (mood changes or loss of sex drive); •headaches (possible in combination with blurred vision); •increased blood pressure; •soreness of the mammary glands; •weight gain; •decreased sex drive. Postcoital medications. Postinor. Criteria for selecting combined oral contraceptives

10	Pharmaceutical consultation of patients with symptoms of anxiety, asthenia and depression.	1. Main directions of treatment of patients with asthenic syndrome. 2. Clinical and pharmacological characteristics of herbal preparations from the group of adaptogens (Eleutherococcus, ginseng, Rhodiola, Schisandra, Leuzea, Aralia). 3. Principles of rational use of drugs used for asthenic syndrome. 4. Medicines, the use of which may most often be accompanied by the development of asthenic syndrome or a depressive state. 5. In what cases is the use of alcohol-containing tinctures inappropriate? 6. Comparative characteristics of medications used to treat anxiety symptoms 7. The main directions of treatment for patients with symptoms of increased anxiety 8. What is the difficulty of using herbal medicines? 9. “Threatening” symptoms with increased anxiety 10. The most common causes of anxiety

7. EDUCATIONAL AND METHODOLOGICAL SUPPORT OF INDEPENDENT WORK OF STUDENTS IN PRODUCTION PRACTICE

Student independent work (SWS) is one of the forms of practical training and is organized for the purpose of:

- systematization and consolidation of the acquired theoretical knowledge and practical skills of students;

- deepening and expanding theoretical knowledge;

- developing the ability to work with various types of information, the ability to use regulatory, legal, reference documentation and special literature;

- development of students’ cognitive abilities;

- formation of such personality qualities asresponsibility and organization, independent thinking, ability for self-development, self-improvement and self-realization.

Educational and methodological support for students’ independent work during practical training are:

- educational literature on previously mastered specialized disciplines;

- regulatory documents regulating the activities of the enterprise (organization) where the student is undergoing practical training;

- methodological developments for students that determine the order and content of practical training.

SRS can be defined as purposeful, internally motivated, structured by the subject himself and adjusted by him in terms of process and result, independent activity.

There are five levels of independent work:

1. The first level is the literal and transformative reproduction of information.

2. The second level is independent work based on the model.
3. Third – reconstructive-independent work
4. Fourth – heuristic independent work.
5. Fifth – creative (research) independent work.

To effectively carry out independent work, it is necessary to master educational strategies - a stable set of actions, purposefully organized by the subject to solve various educational tasks.

8. FORMS OF CERTIFICATION (BASED ON PRACTICE)

Methodological materials defining the assessment procedure

To receive a positive assessment based on the results of the internship, the student must fully complete the internship program, timely complete and submit all necessary reporting documents to the Department.

The results of the work done should be reflected in the practice report. The report is checked and signed by the head of practice from the enterprise, then submitted to the head of practice from the university in the last week of practice on time. If the place of internship is the FEFU Department, the report is prepared by the student and submitted to the head of the internship from the university.

The final grade (credit) for the internship is given on the basis of all submitted documents, which reveal the regularity of visiting the place of practice, the thoroughness of the report, the student's initiative shown during the internship and the ability for independent professional activity.

The results of the internship are assessed according to the following criteria:

- level of mastery of competencies;
- review of the practice manager from the organization;
- practical results of the work carried out and their significance;
- the quality of the student's answers to questions on the substance of the report.

Based on the results of the practice and the defense of students' reports, the teacher - the head of the practice draws up a summary report.

A credit for practice is equivalent to grades for theoretical training and is taken into account when summing up the overall performance of students.

Students who fail to complete the program without a good reason or receive a negative grade may be expelled from a higher education institution as having academic debt in the manner prescribed by the university charter.

Preparation of a practice report

The internship report is compiled in accordance with the main stage of the internship program and reflects the implementation of the internship program. The report is drawn up on A4 paper (210x297 mm). The text of the report is presented on one side of the sheet, in Times New Roman font, size 14, with 1.5 intervals. Each page of the work is designed with the following margins: left - 30 mm; right - 10 mm; top - 20 mm; lower - 20 mm. The paragraph indent in the text is 1.5 cm. All pages of the work must have continuous numbering, including appendices. Numbering is done in Arabic numerals, with the page serial number placed in the lower right corner, starting with the table of contents after the title page. All structural elements of the practice report are stitched together. The report can be illustrated with tables, graphs, diagrams, filled-in forms, and drawings. The pages of the report are numbered in Arabic numerals, with continuous numbering throughout the text. The number is placed in the center of the bottom of the sheet (aligned from the center) without a dot at the end of the number. The title page is included in the general page numbering, but the page number is not indicated on the title page. Digital material should be presented in the form of tables. The table should be placed in the report immediately after the text in which it is mentioned for the first time, or on the next page. All tables provided must have links in the text of the report. Tables should be numbered in Arabic numerals and sequentially numbered throughout the text of the report. The number should be placed above the table on the left without a paragraph indent after the word “Table”.

Contents of report sections

Title page (Appendix 1). The report must describe the goals and objectives of the practice and provide a brief description of the place of practice (organization). The main part should contain a description of the history of the creation of the place of practice, the organizational structure of the enterprise, the competitive environment of the enterprise, the scope of activity of the practice object. The following describes the stages of work in accordance with the individual task, and provides proposals for improving and organizing the work of the enterprise. The conclusion reflects the results achieved, an analysis of the problems encountered and options for eliminating them, and one’s own assessment of the level of one’s professional training based on the results of the practice. The report should reflect the student’s opinion on the issues studied during theoretical training, their correspondence to real activities, as well as what special skills and knowledge the student acquired during practice.

Attached to the internship report:

1. An internship diary, certified by the internship supervisor from the host party, including a list and brief description of the daily types of work performed by the student during the internship in accordance with the internship calendar plan (Appendix 2).

2. Characteristics (feedback) of the practice manager from the receiving party.

Criteria for assessing the results of defending a report on practice

In total, you can get a maximum of 100 points in the practice test.

Points for work during practice are distributed as follows:

36 points- visiting practice. If there are no gaps, 36 points are given, for each gap 6 points are deducted. If practice is missed for a valid reason (documented illness, official release to participate in various events), then the point is not deducted.

36 points– filling out a diary and reporting documentation.

0-28 points– defense of the practice report in the form of a presentation.

Scale of correspondence of rating points to the five-point scale:

1) An "excellent" grade (91–100 points) is given to a student who, when defending a report, demonstrates deep knowledge of scientific and technical documentation. The practice diary and reporting documents are prepared by the student in accordance with the requirements of this work program.

2) A "good" grade (77–90 points) is given to a student who, when defending a report, demonstrates deep knowledge of scientific and technical documentation. However, there were some mistakes in the answer, which were corrected by the student with the help of the teacher. The practice diary and reporting documents are prepared by the student in accordance with the requirements of this work program.

3) A "satisfactory" grade (61–76 points) is given to a student who, when defending a report, demonstrates insufficient knowledge of scientific and technical documentation and makes mistakes. The practice diary and reporting documents are prepared by the student in accordance with the requirements of this work program.

4) A grade of "unsatisfactory" (less than 61 points) is given to a student who, when defending a report on practice, gives an incomplete answer, representing scattered knowledge on the topic of the question with significant errors. The diary and reporting documents are partially completed.

9. EDUCATIONAL, METHODOLOGICAL AND INFORMATION SUPPORT OF PRODUCTION PRACTICE

Main literature

1. Alyautdin R.N. Pharmacology: textbook. GEOTAR-Media, 2008-2017. 797 p.

additional literature

1. edited by Gaevoy M.D., Petrova V.I. Fundamentals of pharmacotherapy and clinical pharmacology: textbook. manual Rostov n/d.: MarT, 2010 100 p.
2. edited by Vyshkovsky G.L. Register of Medicines of Russia. Radar. Encyclopedia. Issue 19. M.: RLS-Media, 2017, 4 p.
3. edited by Belousova Yu.B. Clinical pharmacology. National leadership. M.: GEOTARMEDIA, 2009 5 p.

Electronic resources and software

1. Access mode: www.pharma.studmedlib.ru. Applied pharmacoepidemiology / ed. Petrova V.I. M.: GEOTAR-Media, 2008. [Electronic resource].
2. Access mode: www.pharma.studmedlib.ru Pharmacology: textbook. - 10th ed., revised, revised, and additional. /Kharkevich D.A - M.: GEOTAR-Media, 2010. - 752 pp.: ill. [Electronic resource].
3. Access mode: www.pharma.studmedlib.ru: Clinical pharmacology: selected. lectures / S.V. Oktobin [and others]. - M.: GEOTAR-Media, 2009 - 608 p. - [Electronic resource].
4. Access mode: www.pfarma.studmedlib. Lectures on pharmacology for doctors and pharmacists / A.I. Vengerovsky - M.: Fizmatlit, 2007 - 704 p. - [Electronic resource].
5. Access mode: www.pfarma.studmedlib Clinical pharmacokinetics: theoretical, applied and analytical aspects: manual / ed. V.G. Kukesa - M.: GEOTAR-Media, 2009 - 432 p. - [Electronic resource].
6. Access mode:www.pfarma.studmedlib. General pharmacology. Chemotherapeutic agents (CH) – [Electronic resource].
7. Access mode:www.pfarma.studmedlib.

10. LOGISTICS AND TECHNICAL SUPPORT OF PRODUCTION PRACTICES

Name of equipped premises and premises for independent work	List of main equipment
Limited Liability Company "Alfar" Vladivostok, st. Russkaya, 94a	Standard infrastructure of a pharmacy organization Treaty 2457/13
Limited Liability Company "Hippocrates" Vladivostok, st. Russkaya, 94a	Standard infrastructure of a pharmacy organization Treaty 1327/15

Limited Liability Company "NefRos" Vladivostok, Vladivostok, Ajax village, 10	Standard infrastructure of a pharmacy organization Treaty 1396/18
Limited Liability Company "City United Social Pharmacy" Chain of pharmacies in Vladivostok Vladivostok, st. Sakhalinskaya, 33, st. Khabarovskaya, 8, st. Ladygina, 7, etc.	Standard infrastructure of a pharmacy organization Treaty 1591/18
Limited Liability Company LLC "Latona" Vladivostok, st. Kraeva, 8	Standard infrastructure of a pharmacy organization Treaty 502/17
Audiences for independent work of students Reading rooms of the FEFU Scientific Library with open access to the collection 690922, Primorsky Territory, Vladivostok, Russky Island, Saperny Peninsula, Ayaks village, 10, Building A, level 10	Educational furniture sets (tables and chairs) Monoblock HP ProOpe 400 All-in-One 19.5 (1600x900), Core i3-4150T, 4GB DDR3-1600 (1x4GB), 1TB HDD 7200 SATA, DVD+/-RW, GigEth, Wi-Fi, VT, usb kbd/ mse,Win7Pro (64-bit)+Win8.1Pro(64-bit),1-1-1 Wty Internet access speed 500 Mbit/sec. Workplaces for people with disabilities are equipped with displays and Braille printers; equipped with: portable devices for reading flat-printed texts, scanning and reading machines, video enlargers with the ability to regulate color spectrums; magnifying electronic magnifiers and ultrasonic markers
Audience for independent work of students 690922, Primorsky Krai, Vladivostok, Russky Island, Saperny Peninsula, Ayaks village, 10, Building 25.1, room. M621	Sets of educational furniture (tables and chairs), student board. Monoblock Lenovo C360G-i34164G500UDK 19.5" Intel Core i3-4160T 4GB DDR3-1600 SODIMM (1x4GB)500GB Windows Seven Enterprise - 17 pieces; Wired LAN network - Cisco 800 series; wireless LANs for students are provided with a system based on 802.11a/b access points /g/n 2x2 MIMO(2SS).
Room for storage and preventive maintenance of educational equipment 690922, Primorsky Krai, Vladivostok, Russky Island, Saperny Peninsula, Ayaks village, 10, Building 25.1, room. M408	Furniture for storage and preventive maintenance of educational equipment

For persons with disabilities and people with disabilities, the choice of places of practice is consistent with the requirement of their accessibility for these students and the

practice is carried out taking into account the characteristics of their psychophysical development, individual capabilities and health status.

11. VALUATION FUNDS

For certification based on the results of the internship, the student must provide a report on the practice with a note from the practice manager, a diary of the internship, with a daily note from the practice manager on the completion of work according to the schedule.

The form of control based on the results of practice in the management and economics of pharmaceutical organizations is a test with an assessment.

During certification, the level of development of the following competencies is assessed:

Code and formulation of competencies	Stages of developing competencies		Criteria	Indicators
GPC-3.1 Complies with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines	Knows (threshold level)	norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines	Great	Formed and systematic knowledge about the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
			Fine	Formed, but containing individual gaps in knowledge about the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
			Satisfy impressive	Incomplete, but systematic knowledge of the norms and rules established by

				authorized government bodies when solving problems of professional activity in the field of circulation of medicines
			Dissatisfaction impressive	Fragmentary, non-systematic knowledge about the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
	Can (advanced)	solve problems of professional activity in the field of drug circulation	Great	Able to solve professional problems in the field of drug circulation at a high level
			Fine	Able to solve problems of professional activity in the field of drug circulation at a sufficient level
			Satisfy impressive	Partially able to solve problems of professional activity in the field of drug circulation
			Dissatisfaction impressive	Does not know how to solve professional problems in the field of drug circulation
	Proficient (high level)	methods of compliance with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines	Great	Possesses at a high level methods of compliance with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of

				circulation of medicines
			Fine	Possesses at a sufficient level methods of compliance with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
			Satisfy impressive	Partially knows how to comply with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
			Dissatisfaction impressive	Does not know how to comply with the norms and rules established by authorized government bodies when solving problems of professional activity in the field of circulation of medicines
GPC-3.2 Takes into account, when making management decisions, economic and social factors that influence the financial and economic activities of pharmaceutical organizations	Knows (threshold level)	economic and social factors influencing the financial and economic activities of pharmaceutical organizations	Great	Formed and systematic knowledge about economic and social factors influencing the financial and economic activities of pharmaceutical organizations
			Fine	Formed, but containing individual gaps in knowledge about

				economic and social factors influencing the financial and economic activities of pharmaceutical organizations
			Satisfy impressive	Incomplete but systematic knowledge about economic and social factors influencing the financial and economic activities of pharmaceutical organizations
			Dissatisfaction impressive	Fragmentary, non-systematic knowledge about economic and social factors influencing the financial and economic activities of pharmaceutical organizations
	Can (advanced)	take into account economic and social factors when making management decisions	Great	Able to take into account economic and social factors at a high level when making management decisions
			Fine	Able to sufficiently take into account economic and social factors when making management decisions
			Satisfy impressive	Partially able to take into account economic and social factors when making management decisions
			Dissatisfaction impressive	Does not know how to take into account economic and social factors when making management decisions
	Proficient (high level)	methods of taking into account economic and social factors	Great	Has a high level of knowledge of methods for taking into account

				economic and social factors
			Fine	Has a sufficient level of knowledge of methods for taking into account economic and social factors
			Satisfy impressive	Knows partially the methods of taking into account economic and social factors
			Dissatisfaction impressive	Does not know methods of taking into account economic and social factors
OPK-3.3 Performs labor actions taking into account their impact on the environment, preventing the occurrence of environmental hazards	Knows (threshold level)	impact on the environment of their labor actions	Great	Formed and systematic knowledge about the impact of one's work actions on the environment
			Fine	Formed, but containing separate gaps in knowledge about the impact of one's work actions on the environment
			Satisfy impressive	Incomplete but systematic knowledge of the environmental impact of one's work activities
			Dissatisfaction impressive	Fragmentary, non-systematic knowledge about the environmental impact of one's work activities
	Can (advanced)	carry out work activities taking into account their impact on the environment	Great	Able to perform work activities at a high level, taking into account their impact on the environment
			Fine	Able to perform work activities at a sufficient level, taking into account

				their impact on the environment
			Satisfy impressive	Partially able to perform work activities taking into account their impact on the environment
			Dissatisfaction impressive	Does not know how to perform work actions taking into account their impact on the environment
	Proficient (high level)	methods to counteract the emergence of environmental hazards	Great	Has a high level of knowledge of methods to counteract the emergence of environmental hazards
			Fine	Has a sufficient level of knowledge of methods to counteract the emergence of environmental hazards
			Satisfy impressive	Knows partially the methods of counteracting the emergence of environmental hazards
			Dissatisfaction impressive	Does not know methods of counteracting environmental hazards
OPK – 3.4 Determines and interprets the main environmental indicators of the state of the production environment during the production of medicines	Knows (threshold level)	main environmental indicators of the state of the production environment during the production of medicines	Great	Formed and systematic knowledge about the main environmental indicators of the state of the production environment in the production of medicines
			Fine	Formed, but containing individual gaps in knowledge about the main environmental indicators of the

				state of the production environment in the production of medicines
			Satisfy impressive	Incomplete but systematic knowledge about the main environmental indicators of the state of the production environment in the production of medicines
			Dissatisfaction impressive	Fragmentary, non-systematic knowledge about the main environmental indicators of the state of the production environment in the production of medicines
	Can (advanced)	determine and interpret the main environmental indicators of the state of the production environment during the production of medicines	Great	Able to identify and interpret at a high level the main environmental indicators of the state of the production environment during the production of medicines
			Fine	Able to sufficiently determine and interpret the main environmental indicators of the state of the production environment during the production of medicines
			Satisfy impressive	Partially able to identify and interpret the main environmental indicators of the state of the production environment during

				the production of medicines
			Dissatisfaction impressive	Does not know how to determine and interpret the main environmental indicators of the state of the production environment during the production of medicines
	Proficient (high level)	methods for determining and interpreting the main environmental indicators of the state of the production environment during the production of medicines	Great	Has a high level of knowledge of methods for determining and interpreting the main environmental indicators of the state of the production environment during the production of medicines
			Fine	Has a sufficient level of knowledge of methods for determining and interpreting the main environmental indicators of the state of the production environment during the production of medicines
			Satisfy impressive	Partially knows methods for determining and interpreting the main environmental indicators of the state of the production environment during the production of medicines
			Dissatisfaction impressive	Does not know methods for determining and interpreting the main environmental indicators of the

				state of the production environment during the production of medicines
PC-7.1 Provides information and consulting assistance to visitors of the pharmacy organization when choosing medications and other pharmaceutical products, as well as on issues of their rational use, taking into account the biopharmaceutical features of dosage forms	Knows (threshold level)	the basics of information and consulting assistance to visitors of a pharmacy organization when choosing medications and other pharmaceutical products, as well as on issues of their rational use, taking into account the biopharmaceutical features of dosage forms	Great	Formed and systematic knowledge about the economic indicators of inventories of medicines and other pharmaceutical products
			Fine	Formed, but containing individual gaps in knowledge about the economic indicators of inventories of medicines and other pharmaceutical products
			Satisfy impressive	Incomplete but systematic knowledge of the economic indicators of inventories of medicines and other pharmaceutical products
			Dissatisfaction impressive	Fragmentary, non-systematic knowledge of the economic indicators of inventories of medicines and other pharmaceutical products
	Can (advanced)	provide information and consulting assistance to visitors of a pharmacy organization when choosing medicines and other products of the pharmacy range, as well as on issues of their rational use, taking into account the biopharmaceutical features of medicines	Great	Able to determine at a high level the economic indicators of inventories of medicines and other pharmaceutical products
			Fine	Able to sufficiently determine the economic indicators of inventories of medicines and other pharmaceutical products

			Satisfy impressive	Partially able to determine the economic indicators of inventories of medicines and other pharmaceutical products
			Dissatisfaction impressive	Does not know how to determine the economic indicators of inventories of medicines and other pharmaceutical products
	Proficient (high level)	methods of providing information and consulting assistance to visitors of a pharmacy organization when choosing medications and other pharmaceutical products, as well as on issues of their rational use, taking into account the biopharmaceutical features of dosage forms	Great	Has a high level of knowledge of methods for determining the economic indicators of inventories of medicines and other pharmaceutical products
			Fine	Has a sufficient level of knowledge of methods for determining the economic indicators of inventories of medicines and other pharmaceutical products
			Satisfy impressive	Partially knows methods for determining economic indicators of inventories of medicines and other pharmaceutical products
			Dissatisfaction impressive	Does not know methods for determining economic indicators of inventories of medicines and other pharmaceutical products
PC-7.2 Informs medical workers about medications, their synonyms and	Knows (threshold level)	about the need to inform medical workers about medications, their synonyms and analogues, possible side	Great	Formed and systematic knowledge about the theoretical foundations for

analogues, possible side effects and interactions, taking into account the biopharmaceutical features of dosage forms		effects and interactions, taking into account the biopharmaceutical features of dosage forms		selecting optimal suppliers and organizing procurement processes based on the results of a market study of suppliers of medicines for medical use and other pharmaceutical products
			Fine	Formed, but containing individual gaps in knowledge about the theoretical foundations for selecting optimal suppliers and organizing procurement processes based on the results of a market study of suppliers of medicines for medical use and other pharmaceutical products
			Satisfy impressive	Incomplete but systematic knowledge of the theoretical foundations for selecting optimal suppliers and organizing procurement processes based on the results of a market study of suppliers of medicines for medical use and other pharmaceutical products
			Dissatisfaction impressive	Fragmentary, non-systematic knowledge about the

				theoretical foundations for selecting optimal suppliers and organizing procurement processes based on the results of a market study of suppliers of medicines for medical use and other pharmaceutical products
	Can (advanced)	provide information to medical workers about medications, their synonyms and analogues, possible side effects and interactions, taking into account the biopharmaceutical features of dosage forms	Great	Able to select optimal suppliers at a high level and organize procurement processes based on the results of market research of suppliers of medicines for medical use and other pharmaceutical products
			Fine	Able to select optimal suppliers at a sufficient level and organize procurement processes based on the results of a market study of suppliers of medicines for medical use and other pharmaceutical products
			Satisfy impressive	Partially knows how to select optimal suppliers and organize procurement processes based on the results of market research of suppliers of medicines for medical use and other

				pharmaceutical products
			Dissatisfaction impressive	Does not know how to select optimal suppliers and organize procurement processes based on the results of market research of suppliers of medicines for medical use and other pharmaceutical products
	Proficient (high level)	methods of providing information to medical workers about drugs, their synonyms and analogues, possible side effects and interactions, taking into account the biopharmaceutical features of dosage forms	Great	Has a high level of knowledge of methods for selecting optimal suppliers and organizing procurement processes based on the results of a market study of suppliers of medicines for medical use and other pharmaceutical products
			Fine	Has a sufficient level of knowledge of methods for selecting optimal suppliers and organizing procurement processes based on the results of a market study of suppliers of medicines for medical use and other pharmaceutical products
			Satisfy impressive	Partially knows methods for selecting optimal suppliers and organizing procurement

				processes based on the results of a market study of suppliers of medicines for medical use and other pharmaceutical products
			Dissatisfaction impressive	Does not know methods for selecting optimal suppliers and organizing procurement processes based on the results of a market study of suppliers of medicines for medical use and other pharmaceutical products
PC-7.3 Makes a decision on replacing a prescribed medicinal product with synonymous or similar drugs in the prescribed manner based on information about groups of medicinal products and synonyms within one international nonproprietary name and their prices, taking into account the biopharmaceutical features of dosage forms	Knows (threshold level)	on the possibility of replacing a prescribed medicinal product with synonymous or similar drugs in the prescribed manner based on information about groups of medicinal products and synonyms within one international nonproprietary name and their prices, taking into account the biopharmaceutical features of dosage forms	Great	Formed and systematic knowledge of the theoretical foundations of monitoring the execution of contracts for the supply of medicines for medical use and other pharmaceutical products
			Fine	Formed, but containing individual gaps in knowledge about the theoretical basis for monitoring the execution of contracts for the supply of medicines for medical use and other pharmaceutical products
			Satisfy impressive	Incomplete but systematic knowledge of the

				theoretical basis for monitoring the execution of contracts for the supply of medicines for medical use and other pharmaceutical products
			Dissatisfaction impressive	Fragmentary, non-systematic knowledge of the theoretical basis for monitoring the execution of contracts for the supply of medicines for medical use and other pharmaceutical products
	Can (advanced)	make decisions on replacing a prescribed medicinal product with synonymous or similar drugs in the prescribed manner based on information about groups of medicinal products and synonyms within one international nonproprietary name and their prices, taking into account the biopharmaceutical features of dosage forms	Great	Able to monitor at a high level the execution of contracts for the supply of medicines for medical use and other pharmaceutical products
			Fine	Able to sufficiently monitor the execution of contracts for the supply of medicines for medical use and other pharmaceutical products
			Satisfy impressive	Partially knows how to monitor the execution of contracts for the supply of medicines for medical use and other pharmaceutical products
			Dissatisfaction impressive	Does not know how to monitor the execution of contracts for the supply of medicines

				for medical use and other pharmaceutical products
	Proficient (high level)	necessary knowledge about replacing a prescribed drug with synonymous or similar drugs in the prescribed manner based on information about groups of drugs and synonyms within one international nonproprietary name and their prices, taking into account the biopharmaceutical features of dosage forms	Great	Has a high level of control over the execution of contracts for the supply of medicines for medical use and other pharmaceutical products
			Fine	Has a sufficient level of control over the execution of contracts for the supply of medicines for medical use and other pharmaceutical products
			Satisfy impressive	Partially knows methods of monitoring the execution of contracts for the supply of medicines for medical use and other pharmaceutical products
			Dissatisfaction impressive	Does not know methods of monitoring the execution of contracts for the supply of medicines for medical use and other pharmaceutical products

Criteria for grading a student in a practical test

Assessment	Requirements for developed competencies
"Great"	The student demonstrates deep knowledge of scientific and technical documentation. The practice diary and reporting documents are prepared by the student in accordance with the requirements of this work program.

"Fine"	The student demonstrates deep knowledge of scientific and technical documentation. However, there were some mistakes in the answer, which were corrected by the student with the help of the teacher. The practice diary and reporting documents are prepared by the student in accordance with the requirements of this work program.
"satisfactorily"	The student demonstrates insufficient knowledge of scientific and technical documentation and makes mistakes. The practice diary and reporting documents are prepared by the student in accordance with the requirements of this work program.
"unsatisfactory"	The student gives an incomplete answer, representing scattered knowledge on the topic of the question with significant errors. The diary and reporting documents are partially completed.

A student who fails to complete the internship program for a valid reason is sent to practice again during his free time from class.

A student who fails to complete the internship program without a valid reason or receives an unsatisfactory grade is considered to have academic debt.

The liquidation of this debt is carried out in accordance with the regulatory documents of the Far Eastern Federal University.

Typical tasks for assessing knowledge, skills, abilities and experience

During the internship, the student must complete an individual task to study individual areas of work or activities of the organization, solve specific problems in the interests of the practice base and FEFU.

Individual practice assignment for pharmaceutical consulting and information:

Task 1.A woman weighing 67 kg, taking 100 mg/day of drug X, is breastfeeding a child weighing 6.7 kg. For mother Cpss = 1 mg/l. 1) Determine what dose of the drug the child receives? 2) Is this treatment compatible with breastfeeding? Assume that for drug X M/P = 1. The child consumes 150 ml/kg of milk daily.

Task 2. Simvastatin is 100% absorbed, but only 5% of the drug reaches the systemic bed because the drug is subject to active first-pass metabolism. Grapefruit juice completely inhibits first pass through interaction with CYP3A4. How much will the AUC increase if simvastatin and grapefruit juice are taken simultaneously?

Task 3.A 65-year-old woman with depression and osteoarthritis was hospitalized 1 month ago for deep vein thrombosis of the left leg. Her pharmacotherapy included

fluoxetine 10 mg daily, warfarin 5 mg daily, and she also took codeine. After starting pharmacotherapy, the patient notes a decrease in the effectiveness of codeine. Tramodol was added to therapy. The patient additionally took indomethacin. Two days ago you added ciprofloxacin to your therapy to treat an exacerbation of chronic pyelonephritis. Today the patient developed bruises on her hands and says she has been having nightmares

Task 4.A 22-year-old woman complains of increased bowel movements up to 4-5 times a day, periodic “twisting” pain around the navel not clearly related to eating and bowel movements, weakness, palpitations, dizziness during physical activity, decreased mood and performance, cramps in the hands and feet The feces are mushy. Feces are abundant, light yellow in color, contain pieces of undigested vegetables, and are difficult to wash off the toilet with cold water. She was ill for 8-9 months, when after an urgent uncomplicated birth, loose stools appeared and the indicated complaints gradually formed. I lost 8 kg. Body temperature is normal throughout the illness. I tried to treat myself: I took furazolidone, smecta, Creon without a clear positive effect. Following a diet for several days in the form of eating a small amount of crackers, strong tea and blueberry jelly leads to a smoother stool and a decrease in the amount of feces. History of frequent “food poisoning”, delayed physical development in childhood, moderate iron deficiency anemia during pregnancy. On examination, the skin and mucous membranes are pale and clean. Underweight (height 160 cm, body weight 52 kg). Dry skin, “bitten” in the corners of the mouth, nails with pronounced transverse striations. There are no wheezes in the lungs. Heart sounds are rhythmic, hour = 90 per minute, blood pressure 90\70 mm. Hg The abdomen is soft, sensitive to palpation in the mesogastrium, rumbling, splashing noise above the cecum. The sizes of the liver and spleen are not changed. In an. blood HB 90 g/l, moderate hypochromia of erythrocytes, leukocyte formula not changed, ESR 12 mm/hour. A biochemical blood test revealed a decrease in total protein to the lower limit of normal, a decrease in serum iron levels, and a decrease in potassium and calcium levels to the lower limit of normal. Urinalysis without pathology. Bacteriological examination of feces revealed no pathogenic flora. The absence of bifidobacteria and an increase in the number of lactose-negative Escherichia coli were noted. Ultrasound of the abdominal organs revealed no pathology. X-ray of the stomach revealed no organic pathology; there was a decrease in the tone of the initial parts of the small intestine.

1. Most likely diagnosis

A. Intestinal dysbiosis

B. Chronic pancreatitis

B. Crohn's disease

D. Common variable immunodeficiency

D. Luteal enteropathy

2. To clarify the diagnosis, first of all,

A. Irrigoscopy

B. Colonoscopy with biopsy of the ileal mucosa

B. Study of blood immunoglobulin levels

D. Duodenoscopy with subbulb biopsy

D. CT scan - examination of the pancreas

3. To eliminate the patient's anemia, it is most advisable to prescribe

A. Ferroplex

B. Sorbitol

B. Do not prescribe iron supplements, but recommend eating apples and pomegranates.

G. Ferrum-lek intravenously

D. Aloe syrup with iron

4. To eliminate hypovitaminosis B1 and B6, it is most advisable to prescribe

A. Vitamin complex "Centram"

B. Tablet forms of vitamins

B1 and B6 for joint use

B. Tablet forms of vitamins B1 and B6 for taking every other day

D. First, prescribe vitamin B1 tablets for 2 weeks, and then vitamin B6

D. Resort to parenteral administration of both vitamins simultaneously

5. When confirming the diagnosis by the method of pathogenetic treatment of the disease, it should be considered

A. Following a special diet

B. Prescription of drugs 5 ASA

B. Replacement administration of immunoglobulin preparations

D. Taking digestive enzymes

D. Prescription of bifidumbacterin and colibacterin after preliminary treatment with bactisubtil

Task 5.A 43-year-old patient complains of constant nagging pain in the right hypochondrium and increasing jaundice. It is known from the anamnesis that earlier an ultrasound scan found stones in the gallbladder. 5 days ago, intense pain arose in the right hypochondrium. She was treated on her own: she took no-shpa, baralgin. The pain has decreased significantly, but pain in the right hypochondrium, nausea, and malaise remain. 3 days ago I noticed jaundice that was growing.

1. Select a situation in which the described symptoms are impossible

A. Choledocholithiasis

B. Development of stenosing papillitis after colic

B. Wedging of a large stone into the neck of the gallbladder

D. Development of pancreatitis with severe swelling of the head of the pancreas

D. Valve stonecholedochus

2. An ultrasound performed on the patient upon presentation revealed the presence of several small (up to 7 mm in diameter) stones in the gallbladder. No stones were found in other parts of the biliary system; dilatation of the common bile duct was noted.

Select the method that is most adequate to clarify the diagnosis in this situation:

A. Hepatoscintigraphy

B. Ultrasound with test breakfast

B. Duodenal sounding

G. ERCP

D. Comparison of data from biochemical blood tests and urine and feces tests for bile pigments.

3. Select the statement regarding the prescription of drugs that dissolve gallstones that is correct in this situation

A. Ursofalk should be prescribed as soon as possible

B. Ursofalk should be prescribed after radiography of the right hypochondrium

B. Ursofalk should be prescribed after intravenous cholecystocholangiography if gallstones float in contrast

G. Ursofalk in this case should be prescribed only in conjunction with antispasmodics

D. The use of Ursofalk in this clinical situation is contraindicated

4. Select the correct statement in this situation about the possibility of cholelithotripsy (CLT)

A. CRT is contraindicated

B. Urgent chemotherapy is indicated

B. CRT is indicated after preliminary treatment with Ursofalk

D. CRT is indicated after endoscopy to exclude duodenal ulcers

D. CRT is indicated if x-ray examination does not reveal the presence of calcium salts in the stones.

Task 6.A young man, 17 years old, 2 weeks after a nasopharyngeal infection developed palpitations, shortness of breath during exercise, and low-grade fever. I went to the doctor. On examination: normal build, clean skin. Lymph nodes are not enlarged. The musculoskeletal system is without features. In the lungs, breathing is vesicular. No

wheezing. BH 18 per minute. The heart is dilated to the left by 1.5 cm. The first sound at the apex is weakened, the systolic murmur does not radiate. A 3rd tone is heard. Heart rate 88 beats per minute The rhythm is correct. Blood pressure 110/70 mm Hg. Liver at the edge of the costal arch. No dysuria. On the ECG: Normal position of the EOS. Presumable diagnosis:

1. Viral myocarditis
2. Neurocirculatory dystonia of cardiac type
3. Acute rheumatic fever
4. Diphtheria
5. None of the above.

During examination, a clinical blood test revealed a slight shift in the leukocyte formula to the left. ESR 18. CRP "+" Antistreptolysin O 1:1250. An echocardiogram shows a slight decrease in myocardial contractility. FV 50%. The valves have not been changed. Impaired diastolic function of the left ventricle. Select the optimal drugs for treatment:

1. Antibiotics a) penicillin series b) tetracyclines, c) cephalosporins, d) fluoroquinolones e) aminoglycosides.

2. Non-steroidal anti-inflammatory drugs: a) aspirin b) voltaren, c) indomethacin, d) ibuprofen, e) any of the above e) are not prescribed.

3. Glucocorticoids in a dose equivalent to prednisolone: a) 10-20 mg b) 20-30 mg c) 40-60 mg d) prescription is not advisable.

Problem 7. Fill out the table "Side effects of NSAIDs":

A drug	Hepatitis toxicity	Nephrotic toxicity	Effect on blood	Effect on the central nervous system	Skin manifestations	Idio Sync Asia
1. Diclofenac 2. Naproxen 3. Piroxicam 4. Indomethacin 5. Salicylates 6. Phenylbutazone 7. Ketoprofen 8. Ibuprofen 9. Meloxicam 10. Nimesulide						

Note: answers are indicated with "+" or "-" signs.

Task 8. Fill out the table "Interaction of NSAIDs":

NSAIDs	Other drugs	Possible effects

Acetylsalicylic acid	Indirect anticoagulants Methotrexate Heparin Oral antidiabetic drugs Glucocorticoids Vitamin C	
Phenylbutazone	Phenylbutazone Glucocorticoids Digoxin Insulin Barbiturates Penicillin Indirect anticoagulants	
Indomethacin	Indomethacin Furosemide Glucocorticoids Propranolol Thiazide diuretics	

Task 9. Fill out the table "Interaction of basic anti-inflammatory drugs with other drugs":

Interacting drugs		The essence and result of interaction
Gold preparations	D-penicillamine NSAIDs Glucocorticoids Immunosuppressants	
Quinoline drugs	NSAIDs Cardiac glycosides Gold preparations D-penicillamine Cimetidine	
Cyclophosphamide Azathioprine Methotrexate	Cytostatics Sulfasalazine Pyrazolone drugs	
D-penicillamine	Glucocorticoids Aluminum, magnesium and iron preparations	
Sulfonamide drugs	Digoxin, folic acid NSAIDs Antibiotics Cholestyramine	

Head of OP Shokur O.A.

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)
Institute of Life Sciences and Biomedicine (School)

Department of Pharmacy and Pharmacology

Full Name

REPORT

Internship. Practice in pharmaceutical consulting and information

specialty 05/33/01 Pharmacy

The author of the work is student gr._____
signature
"_" _____ 202_
Head of practice from FEFU Institute of Housing and Mechanical Engineering

_____
(position, academic title)

_____
(signature) (I.O.F)
"_"_____202_

The report is protected with a rating

_____
(signature) (I.O.F)
"_" 202_

Vladivostok
202_

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)
Institute of Life Sciences and Biomedicine (School)

Department of Pharmacy and Pharmacology

Full Name

DIARY

undergoing practical training
Internship. Practice in pharmaceutical consulting and information
student course

_____

(Full name.)

specialty 05/33/01 Pharmacy

Place of practice_____
_____

Practice time:
Start
_____
ending
_____
Head of practice:
from the university
_____
from the enterprise
_____
M.p.

Vladivostok

202_g.

THE FIRST DAY	
date	
day of the week	
place of work (department)	
content of the work (description of the process)	
compliance with schedule	

grade	
signature of the practice manager from enterprises	
SECOND DAY	
date	
day of the week	
place of work	
content of the work (description of the process)	
compliance with schedule	

grade	
signature of the practice manager from the company	

DAY THREE	
date	
day of the week	
place of work	
content of the work (description of the process)	

compliance with schedule	
grade	
signature of the practice manager from the company	
DAY FOUR	
date	
day of the week	
place of work	
content of the work (description of the process)	

compliance with schedule	
grade	
signature of the practice manager from the company	

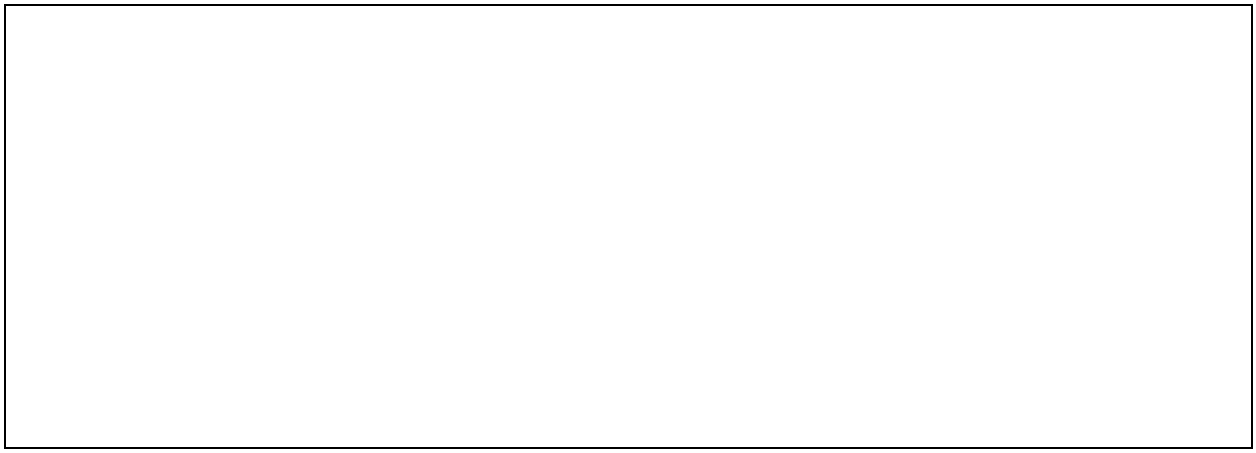
To complete an individual task.

Task 1.
Task 2.
Task 3.

Task 4.
Task 5.

Task 6.
Task 7.
Task 8.

Task 9.
Problem 10.



MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)

INSTITUTE OF LIFE SCIENCES AND BIOMEDICINE (SCHOOL)

I APPROVED
Director of the Institute of Life Sciences and Biomedicine (School)

Yu.S. Khotimchenko
Full name

"06" December 2022

WORK PROGRAM FOR PRODUCTION PRACTICE Production practice. Research work
for specialty 05/33/01 Pharmacy
specialization "Clinical and Experimental Pharmacy (in English)"

Vladivostok
2022

1. OBJECTIVES OF DEVELOPING PRODUCTION PRACTICES

The main goal of “Industrial practice. Research work" is the development of the ability to independently carry out research work related to solving complex professional problems in innovative conditions.

Research work is carried out by the student under the guidance of a supervisor.

The goals of the industrial practice “Research work” are:

- familiarization with methods of conducting research work in accordance with the topic determined by the subject area and objects of research;
- the student obtains practical skills and competencies by type of professional activity;
- development of skills for independently solving production problems and tasks;
- selection or clarification of the topic of research work, collection of materials for research, practical work together with professional developers;
- increasing the competitive potential of students based on the formation of their professional skills;
- adaptation of the student to future places of professional activity.

2. TASKS OF PRODUCTION PRACTICE

The objectives of the practice are:

- study of theoretical and experimental methods for obtaining, processing and storing scientific information using modern information technologies;
- studying the experience of conducting specific scientific research in laboratories of university departments, studying the forms and procedures for compiling reporting scientific and technical documentation and implementing the results of scientific research;
- developing skills in conducting scientific research as an integral process, including skills in analyzing a specific problem situation, formulating a problem and putting forward a hypothesis, developing an experimental plan, conducting an experiment, processing results, formulating conclusions and presenting the results of the work done in the form of scientific reports, abstracts or articles ;
- conducting scientific research in accordance with an individual assignment on a chosen topic;
- selection of material for the preparation of scientific reports, as well as further informed selection of the topic of research work.

3. PLACE OF PRODUCTION PRACTICE IN THE STRUCTURE OF EP

Research work is an integral part of the main professional educational program and is included in block B2 “Practices” of the curriculum - a part formed by participants in educational relations.

4. TYPES, METHODS, PLACE AND TIME OF RESEARCH WORK

Type of practice – Industrial practice.

Type of practice - Research work.

Method of implementation: in-patient/on-site.

The form of practice is concentrated.

In accordance with the schedule of the educational process, practice is implemented in semester A.

The place of practice is the structural divisions of the Far Eastern Federal University (Department of Pharmacy and Pharmacology, laboratories of the Department).

The graduating Department in which the specialty program is implemented determines special requirements for the student’s preparation for the research part of the program.

Special requirements include:

- mastery of modern issues in this field of knowledge;
- knowledge of the history of the development of a specific scientific problem, its role and place in the scientific direction being studied;
- the presence of specific specific knowledge on a scientific problem;
- ability to practically carry out scientific research and experimental work in a particular scientific field;
- ability to work with specific software products and specific Internet resources, etc.

During research work, the student must study:

- patent and literary sources on the topic under development for the purpose of their use when carrying out research work;
- methods of research and experimental work;
- rules for operating research equipment;
- methods of analysis and processing of experimental data;
- physical and mathematical models of processes and phenomena related to the object under study;
- information technologies in scientific research, software products related to the professional field;
- requirements for the preparation of scientific and technical documentation.

The student must complete:

- analysis, systematization and synthesis of scientific and technical information on the research topic;

- theoretical or experimental research within the framework of the assigned tasks, including a mathematical (simulation) experiment;

- analysis of the reliability of the results obtained;

- comparison of the results of research of the development object with domestic and foreign analogues;

- analysis of the scientific and practical significance of the ongoing research, as well as the technical and economic efficiency of the development.

5. STUDENT COMPETENCIES FORMED AS A RESULT OF COMPLETING PRODUCTION PRACTICE

Professional competencies of graduates and indicators of their achievement:

Task type	Code and name of professional competence (result of mastery)	Code and name of the competency achievement indicator
research	PC-1 Able to take part in research in the field of assessing the effectiveness and safety of drugs	PC -1.1 Conducts studies of pharmacological activity and other types of activity of various compounds in laboratory animals
		PC -1.2 Determines the pharmacokinetic parameters of substances in laboratory animals
		PC -1.3 Conducts studies of the bioavailability of substances on various models in vitro and in vivo
		PC -1.5 Conducts the development of methods and pharmacokinetics research at the preclinical and clinical level

Code and name of the competency achievement indicator	Name of the assessment indicator (result of training by practice)
PC -1.1 Conducts studies of pharmacological activity and other types of activity of various compounds in laboratory animals	Knows the theoretical basis for studying the pharmacological activity and other types of activity of various compounds in laboratory animals
	Able to conduct studies of pharmacological activity and other types of activity of various compounds in laboratory animals
	Knows methods for studying the pharmacological activity and other types of activity of various compounds in laboratory animals

PC -1.2 Determines the pharmacokinetic parameters of substances in laboratory animals	Knows the theoretical basis for determining the pharmacokinetic parameters of substances in laboratory animals
	Able to determine the pharmacokinetic parameters of substances in laboratory animals
	Knows methods for determining the pharmacokinetic parameters of substances in laboratory animals
PC -1.3 Conducts studies of the bioavailability of substances on various models in vitro and in vivo	Knows the theoretical basis for studying the bioavailability of substances using various in vitro and in vivo models
	Able to study the bioavailability of substances using various in vitro and in vivo models
	Proficient in methods for studying the bioavailability of substances using various in vitro and in vivo models
PC -1.5 Conducts the development of methods and pharmacokinetics research at the preclinical and clinical level	Knows the theoretical basis for developing methods and studying pharmacokinetics at the preclinical and clinical level
	Able to develop methods and study pharmacokinetics at the preclinical and clinical level
	Knows methods for developing methods and studying pharmacokinetics at the preclinical and clinical level

6. STRUCTURE AND CONTENT OF PRACTICE, INCLUDING PRACTICAL TRAINING

The total labor intensity of the practice is 6 credits, 216 hours.

No.	Stages of practice	Types of work in practice, including practical training and independent work of students	Labor intensity of SR/KSR (in hours)	Current control form
1	Organizational	Safety briefing, receiving directions, individual assignments, programs and guidelines. Acquaintance with the place of internship.	6/2	Interview
2	Basic	Carrying out research work within the framework of the state budgetary research work of the department (collection, analysis of scientific and theoretical material, collection of empirical data, interpretation of experimental and empirical data); carrying out research activities within the framework of grants carried out in the Department; participation in the solution of scientific research work, carried out by the Department under agreements with educational institutions and research teams; participation in the organization and	90/6	Practice diary

		holding scientific, scientific and practical conferences, round tables, discussions; conducting and participating in seminars, master classes, round tables on current issues; participation in research competitions; conducting bibliographic work using modern information and communication technologies.		
3	Experimental	Studying, processing, systematizing, determining the sufficiency and reliability of the results of research material on the chosen topic.	90/6	Practice diary
4	Final	Completion of work on individual assignments; Presentation of the results of the work done in the form of reports prepared in accordance with existing requirements; Determining the results and effectiveness of professional activities in the chosen subject area; Self-analysis of the process of developing professional competencies; Drawing up and defending a report on practice.	12/4	Practice report
		Total:	198/18	

7. EDUCATIONAL AND METHODOLOGICAL SUPPORT OF INDEPENDENT WORK OF STUDENTS IN PRODUCTION PRACTICE

Student independent work (SWS) is one of the forms of practical training and is organized for the purpose of:

- systematization and consolidation of the acquired theoretical knowledge and practical skills of students;
- deepening and expanding theoretical knowledge;
- developing the ability to work with various types of information, the ability to use regulatory, legal, reference documentation and special literature;
- development of students' cognitive abilities;
- formation of such personality qualities as responsibility and organization, independence of thinking, ability for self-development, self-improvement and self-realization.

Educational and methodological support for students' independent work on research work are:

- educational literature on previously mastered specialized disciplines;

- regulatory documents regulating the activities of the enterprise (organization) where the student is undergoing practical training;

- methodological developments for students that determine the order and content of practical training.

SRS can be defined as a purposeful, internally motivated, independent activity structured by the subject himself and adjusted by him in terms of process and result.

Planned results of independent work:

- set and solve theoretical and practical research problems;

– use the methodology of scientific substantiation and solution of complex problems of professional activity, information support of transport science, development of equipment and technology, taking into account social aspects;

– use scientific research methods and tools to improve production processes at industry enterprises.

In the course of independent work, not only the learning material is mastered, but also its expansion, the formation of the ability to work with various types of information, and the development of analytical abilities.

There are five levels of independent work:

1. The first level is the literal and transformative reproduction of information.
2. The second level is independent work based on the model.
3. Third – reconstructive-independent work
4. Fourth – heuristic independent work.
5. Fifth – creative (research) independent work.

To effectively carry out independent work, it is necessary to master educational strategies - a stable set of actions, purposefully organized by the subject to solve various educational tasks.

Educational strategies determine the content and technology for performing independent work and consist of skills that include established methods of processing information, assessing, monitoring and regulating one's own activities.

Key components of instructional strategies:

• long-term educational goals (result image), which determine the organization of educational activities;

• technologies – ways, techniques, methods and forms with the help of which the achievement of educational goals is realized;

• resources that ensure the achievement of educational goals and the management of educational activities.

Tasks for students to perform various types of independent work:

• independent work on mastering new knowledge, consolidating and systematizing acquired knowledge (reading the text of a textbook, primary source, additional literature; drawing up an outline of the text; taking notes of the text; compiling a bibliography; working with reference books; familiarizing with regulatory documents; educational and research work; compiling a list of basic problems related to the topic of an individual practice assignment, etc.);

• independent work of students to develop practical skills (solving variable problems and exercises; designing and modeling different types and components of professional activity; performing calculation and graphic work;

• solving situational production (professional) problems; project development; experimental work; analysis of the results of research performed on the issues under consideration; conducting and presenting a mini-research in the form of a report on the topic, etc.).

8. FORMS OF CERTIFICATION (BASED ON PRACTICE)

Methodological materials defining the assessment procedure

To receive a positive assessment based on the results of the internship, the student must fully complete the internship program, timely complete and submit all necessary reporting documents to the Department.

The results of the work done should be reflected in the practice report. The report is checked and signed by the head of practice from the enterprise, then submitted to the head of practice from the university in the last week of practice in

fixed time. If the place of internship is the FEFU Department, the report is prepared by the student and submitted to the head of the internship from the university.

The final grade (credit) for the internship is given on the basis of all submitted documents, which reveal the regularity of visiting the place of practice, the thoroughness of the report, the student's initiative shown during the internship and the ability for independent professional activity.

The results of the internship are assessed according to the following criteria:

- level of mastery of competencies;
- review of the practice manager from the organization;
- practical results of the work carried out and their significance;
- the quality of the student's answers to questions on the substance of the report.

Based on the results of the practice and the defense of students' reports, the teacher - the head of the practice draws up a summary report.

A credit for practice is equivalent to grades for theoretical training and is taken into account when summing up the overall performance of students. The grade received by students on the test is taken into account when assigning a scholarship.

Students who fail to complete the program without a good reason or receive a negative grade may be expelled from a higher education institution as having academic debt in the manner prescribed by the university charter.

Preparation of a practice report

The internship report is compiled in accordance with the main stage of the internship program and reflects the completion of an individual task.

The volume of the report should be 5-25 pages of typewritten text (excluding attachments). The report is drawn up on A4 paper (210x297 mm) and bound into a single block.

The text of the report is presented on one side of the sheet, in Times New Roman font, size 14, with 1.5 intervals. Each page of the work is designed with the following margins: left - 30 mm; right - 10 mm; top - 20 mm; lower - 20 mm. The paragraph indentation in the text is 1.5 cm.

All pages of the work must have continuous numbering, including appendices. Numbering is done in Arabic numerals, with the page serial number placed in the lower right corner, starting with the table of contents after the title page.

The report must be illustrated with tables, graphs, diagrams, filled-in forms, and drawings. The pages of the report are numbered in Arabic numerals, with continuous numbering throughout the text. The number is placed in the center of the bottom of the sheet (aligned from the center) without a dot at the end of the number. Diagrams, drawings, tables and other illustrative material located on separate sheets are included in the overall page numbering, but are not counted towards the scope of the work. The title page is included in the general page numbering, but the page number is not indicated on the title page. Digital material should be presented in the form of tables. The table should be placed in the report immediately after the text in which it is mentioned for the first time, or on the next page. All tables provided must have links in the text of the report. Tables should be numbered in Arabic numerals and sequentially numbered throughout the text of the report. The number should be placed above the table on the left without a paragraph indent after the word “Table”. Each table must have a title, which is placed on one line with its number separated by a dash. Drawings (drawings, graphs, diagrams, computer printouts, diagrams, photographs) should be placed in the work immediately after the text in which they are mentioned for the first time, or on the next page.

Contents of report sections

Title page (Appendix 1). The report must describe the goals and objectives of the practice and provide a brief description of the place of practice (organization). The main part should contain a description of the history of the creation of the place of practice, the organizational structure of the enterprise, the competitive environment of the enterprise, the scope of activity of the practice object. The following describes the stages of work in accordance with the individual task, and provides proposals for improving and organizing the work of the enterprise. The conclusion reflects the results achieved, an analysis of the problems encountered and options for eliminating them, and one's own assessment of the level of one's professional training based on the results of the practice. The report should reflect the student's opinion on the issues studied during theoretical training, their correspondence to real activities, as well as what special skills and knowledge the student acquired during practice.

Attached to the internship report:

1. An internship diary, certified by the internship supervisor from the host party, including a list and brief description of the daily types of work performed by the student during the internship in accordance with the internship calendar plan (Appendix 2).

2. Characteristics (feedback) of the practice manager from the receiving party.

Criteria for assessing the results of defending a report on practice

When grading when defending a report on practice, the student must demonstrate a high level, advanced level, or threshold level. The main objects for assessing the results of internship:

- student's business activity during practice;
- student's industrial discipline;
- quality of individual task execution;
- preparation of a practice diary;
- quality of execution and execution of the practice report;
- level of responses when protecting the report;
- characteristics and assessment of the student's work by the internship supervisor from the place of internship.

When issuing a score, the following indicators are taken into account:

- depth of disclosure of the chosen research topic;
- scientific novelty and independence of the research;

- compliance of the level of educational and methodological materials prepared by the student on the topic of the training session with the requirements;

- assessment of the methodological level of preparation, organization and conduct of training sessions;

- compliance of practice reporting documents with basic requirements;

- characteristics from the place of internship;

- participation in the final conference;

- opinion of the scientific supervisor.

9. EDUCATIONAL, METHODOLOGICAL AND INFORMATION SUPPORT OF PRODUCTION PRACTICE

Main literature

1. Serov E.N. Research training for masters [Electronic resource]: textbook / E.N. Serov, S.I. Mironov. — Electron. text data. - St. Petersburg: St. Petersburg State University of Architecture and Civil Engineering, EBS ASV, 2016. - 56 p. - 978-5-9227-0621-6. - Access mode:http://www.iprbookshop.ru/66835.html

2. Kudryavtseva, T.A. Research work [Electronic resource]: teaching aid / T.A. Kudryavtseva, L.A. Zabodalova. — Electron. Dan. —

St. Petersburg: NRU ITMO, 2015. - 32 p. - Access mode:https://e.lanbook.com/book/91511

3. Research work [Electronic resource]: workshop/ - Electron. text data.— Stavropol: North Caucasus Federal University, 2016.— 246 pp.— Access mode:http://www.iprbookshop.ru/66064.html

4. Skvortsova L.M. Methodology of scientific research [Electronic resource]: textbook / Skvortsova L.M. - Electronic. text data.— M.: Moscow State University of Civil Engineering, IP Er Media, EBS ASV, 2014.— 79 pp.— Access mode:http://www.iprbookshop.ru/27036.html— EBS “IPRbooks”

additional literature

1. Kentbaeva B.A. Methodology of scientific research [Electronic resource]: textbook / Kentbaeva B.A.—Electron. text data.— Almaty: Nur-Print, 2014.— 209 p.— Access mode:http://www.iprbookshop.ru/69140.html

2. Kravtsova, E. D. Logic and methodology of scientific research [Electronic resource]: textbook. allowance / E. D. Kravtsova, A. N. Gorodishcheva. – Krasnoyarsk: Sib. federal univ., 2014. – 168 p. - ISBN 978-5-7638-2946-4 - Access mode:http://znanium.com/catalog.php?bookinfo=507377

3. Pleteneva T.V., Quality control of medicines [Electronic resource]: textbook / ed. T. V. Pleteneva - M.: GEOTAR-Media, 2014. - 560 p. - ISBN 978-5-9704-2634-0 - Access mode: http://www.studentlibrary.ru/book/ISBN9785970426340.html

4. Kharkevich D.A., Pharmacology [Electronic resource] / Kharkevich D.A. - M.: GEOTAR-Media, 2013. - 760 p. - ISBN 978-5-9704-2427-8 - Access mode:http://www.studentlibrary.ru/book/ISBN9785970424278.html

5. Krasnyuk I.I., Pharmaceutical technology. Technology of dosage forms [Electronic resource]: textbook / I. I. Krasnyuk, G. V. Mikhailova, T. V. Denisova, V. I. Sklyarenko; Ed. I. I. Krasnyuk, G. V. Mikhailova. - M.: GEOTAR-Media, 2013. - 656 p. - ISBN 978-5-9704-2694-4 - Access mode:http://www.studentlibrary.ru/book/ISBN9785970426944.html

Electronic resources and software

1. Federal Electronic Medical Library http://feml.scsml.rssi.ru/feml/
2. Legal information system http://www.consultant.ru/
3. Scientific electronic library eLIBRARY project of the Russian Foundation for Basic Research www.elibrary.ru
4. FEFU Scientific Library https://lib.dvfu.ru
5. Electronic library system Znanium.com
6. List of information technologies and software
7. Microsoft Office Professional Plus 2010; an office suite that includes software for working with various types of documents (texts, spreadsheets, databases, etc.);
8. 7Zip 9.20 - a free file archiver with a high degree of data compression;
9. ABBYY FineReader 11 - a program for optical character recognition;
10. Adobe Acrobat XI Pro – a software package for creating and viewing electronic publications in PDF format;
11. Adobe Photoshop CS6;
12. ESET Endpoint Security - comprehensive protection of workstations based on Windows OS. Virtualization support + new technologies;
13. Google Chrome;
14. LabSolutions LC/GC Workstation software, software for controlling the Shimadzu chromatographic system and processing the results obtained, including a software module for calculating the molecular weight characteristics of polymers;
15. Multifunctional UV Control Software, software for controlling the Shimadzu spectrophotometer and processing the results obtained;

16. LabSolutions IR software for controlling the Fourier IR spectrometer and processing the results obtained, in addition to standard functions, allows for measurements in photometric and kinetic modes. Includes a unique algorithm for searching spectra, as well as a library containing about 12,000 spectra, which greatly facilitates the task of identifying substances.

10. LOGISTICS AND TECHNICAL SUPPORT OF PRODUCTION PRACTICES

Name of equipped premises and premises for independent work	List of main equipment
Auditorium for conducting lectures, seminars and laboratory work 690922, Primorsky Krai, Vladivostok, Russky Island, Saperny Peninsula, Ayaks village, 10, Building 25.1, room. M403	Sets of laboratory furniture (tables and chairs), student board. Multimedia complex: Monoblock Lenovo C360G-i34164G500UDK; Projection screen Projecta Elpro Electrol, 300x173 cm; Multimedia projector, Mitsubishi FD630U, 4000 ANSI Lumen, 1920x1080; Built-in interface with automatic cable retraction system TLS TAM 201 Stan; Document camera Avervision CP355AF; Microphone lavalier UHF radio system Sennheiser EW 122 G3 consisting of a wireless microphone and receiver; Video conferencing codec LifeSizeExpress 220- Codeconly- Non-AES; Network video camera Multipix MP-HD718; Two LCD panels 47", Full HD, LG M4716CCBA; Audio switching and sound amplification subsystem; centralized uninterrupted power supply. The auditorium is also equipped for an open-type pharmacy: counters, display cases (cabinets, racks with samples of pharmaceutical products), a cash register.
Auditorium for conducting lectures, seminars and laboratory work 690922, Primorsky Krai, Vladivostok, Russky Island, Saperny Peninsula, Ayaks village, 10, Building 25.1, room. M420	Sets of educational furniture (tables and chairs), student board. Multimedia complex: Monoblock Lenovo C360G-i34164G500UDK; Projection screen Projecta Elpro Electrol, 300x173 cm; Multimedia projector, Mitsubishi FD630U, 4000 ANSI Lumen, 1920x1080; Built-in interface with automatic cable retraction system TLS TAM 201 Stan; Document camera Avervision CP355AF; Microphone lavalier UHF radio system Sennheiser EW 122 G3 consisting of a wireless microphone and receiver; Video conferencing codec LifeSizeExpress 220- Codeconly- Non-AES; Network video camera Multipix MP-HD718; Two LCD panels 47", Full HD, LG M4716CCBA; Audio switching and sound amplification subsystem; centralized uninterrupted power supply Laboratory equipment: Aquadistiller PE-2205 (5 l/h); analytical scales; laboratory scales Vibra SJ-6200CE (NPV=6200 g/ 0.1g); moisture meter AGS100; dual-beam spectrophotometer UV-1800 manufactured by Shimadzu; magnetic stirrer PE-6100 (10 pcs); magnetic stirrer PE-6110 M with heating (5 pcs); electric heating plate; infrared spectrophotometer IRAffinity-1S with Fourier transform; liquid chromatograph LC-20 Prominence with spectrophotometric and

	refractometric detector; laboratory centrifuge PE-6926 with a 10×5 ml rotor; a set of automatic Ecochem dispensers, a water bath, a drying cabinet, a fume hood, a water purification system. Sets of chemical reagents and laboratory glassware.
Audiences for independent work of students Reading rooms of the FEFU Scientific Library with open access to the collection (building A - level 10)	Educational furniture sets (tables and chairs) Monoblock HP ProOpe 400 All-in-One 19.5 (1600x900), Core i3-4150T, 4GB DDR3-1600 (1x4GB), 1TB HDD 7200 SATA, DVD+/-RW, GigEth, Wi -Fi, VT, usb kbd/mse, Win7Pro (64-bit)+Win8.1Pro (64-bit), 1-1-1 Wty Internet access speed 500 Mbit/sec. Workplaces for people with disabilities are equipped with displays and Braille printers; equipped with: portable devices for reading flat-printed texts, scanning and reading machines, video enlargers with the ability to regulate color spectrums; magnifying electronic magnifiers and ultrasonic markers.
Audience for independent work of students 690922, Primorsky Krai, Vladivostok, Russky Island, Saperny Peninsula, Ayaks village, 10, Building 25.1, room. M621	Sets of educational furniture (tables and chairs), student board. Monoblock Lenovo C360G-i34164G500UDK 19.5" Intel Core i3-4160T 4GB DDR3-1600 SODIMM (1x4GB)500GB Windows Seven Enterprise - 17 pieces; Wired LAN network - Cisco 800 series; wireless LANs for students are provided with a system based on 802.11a/b access points /g/n 2x2 MIMO(2SS).
Auditorium for conducting seminar-type classes and laboratory work 690922, Primorsky Krai, Vladivostok, Russky Island, Saperny Peninsula, Ayaks village, 10, Building 25.1, room. M409	Sets of laboratory furniture (tables, chairs, cabinets for storing equipment, reagents, pharmaceutical and laboratory glassware), student board. Laboratory equipment: water distiller, water bath, laboratory scales, pharmaceutical turntables, dispenser sets, laboratory stirrers, pH meter, suppository form, filtration unit. Sets of pharmaceutical substances, pharmaceutical and chemical glassware.
Auditorium for conducting seminar-type classes and laboratory work 690922, Primorsky Territory, Vladivostok, Russky Island, Saperny Peninsula, Ayaks village, 10, Building L, room. L406	Sets of laboratory furniture (tables, chairs, cabinets for storing equipment, reagents, pharmaceutical and laboratory glassware), student board. Laboratory equipment: water distiller, water bath, laboratory scales, pharmaceutical turntables, dispenser sets, laboratory stirrers, apparatus for producing pharmaceuticals UNIQ -2 with replaceable attachments: granulator, coating kettle, mixer; Laboratory scales AGN100; Magnetic stirrer PE-6100 (5 pcs); Magnetic stirrer PE-6110 M with heating (2 pcs); Electric heating plate; UNIQ-7 rotary tableting press for 7 punches; mold for forming suppositories with 100 cells; device for determining the disintegration of tablets. Sets of pharmaceutical substances, pharmaceutical and chemical glassware.
Laboratory of Pharmacology and Biotesting 690922, Primorsky Krai, Vladivostok, Russky Island, Saperny Peninsula, Ayaks village, 10, Building 25.1, room. M806	Sets of laboratory furniture (tables, chairs, cabinets for storing equipment, reagents, pharmaceutical and laboratory glassware, fume hood) Equipment: Automatic biochemical analyzer Miura 200 with a capacity of 150 samples; Centrifuge 5804R, refrigerated, with A-4-44 swing-bucket rotor and adapters: 8x15 ml, 4; Electric water distiller Liston A1104; Immunological analyzer "Multiskan FC" with accessories; Veterinary hematological analyzer BC-2800 Vet; Boiling bath Baher (BAHER) included: stand for 24 test tubes with a diameter of up to 22 m; Ultra-Turrax T rotary

	homogenizer + dispersing elements S18N-19G-1 pcs; S;Electronic scales ED224S-RCE (NPV=220g d=0.1mg); Magnetic stirrer PE-6110 with heating; Multi-vortex V-32 for intensive mixing of bacterial and yeast cells; Solid state thermostat. Sets of chemical reagents and laboratory glassware.

For persons with disabilities and people with disabilities, the choice of places of practice is consistent with the requirement of their accessibility for these students and the practice is carried out taking into account the characteristics of their psychophysical development, individual capabilities and health status.

11. VALUATION FUNDS

For certification based on the results of the internship, the student must provide a report on the practice with a note from the practice manager, a diary of the internship, with a daily note from the practice manager on the completion of work according to the schedule.

Certification based on the results of practice is carried out in the form of defending a report in the form of a presentation. Reporting form: test with assessment.

During certification, the level of development of the following competencies is assessed:

Code and formulation of competencies	Stages of developing competencies		Criteria	Indicators
PC-1.1. Conducts studies of pharmacological activity and other types of activity of various compounds in laboratory animals	Knows (threshold level)	theoretical basis for studying the pharmacological activity and other types of activity of various compounds in laboratory animals	Great	Formed and systematic knowledge about the theoretical basis for studying the pharmacological activity and other types of activity of various compounds in laboratory animals
			Fine	Formed, but containing separate gaps in knowledge about the theoretical foundations of the study of pharmacological activity and other types of activity of various compounds in laboratory animals
			Satisfy impressive	Incomplete but systematic knowledge of the theoretical basis for studying the pharmacological activity and other activities of various compounds in laboratory animals
			Dissatisfaction impressive	Fragmentary, non-systematic knowledge of the theoretical basis for studying the pharmacological activity and other types of activity of

				various compounds in laboratory animals
	Can (advanced)	conduct studies of pharmacological activity and other types of activity of various compounds in laboratory animals	Great	Able to conduct high-level studies of pharmacological activity and other types of activity of various compounds in laboratory animals
			Fine	Able to conduct studies of pharmacological activity and other types of activity of various compounds on laboratory animals at a sufficient level
			Satisfy impressive	Partially able to conduct studies of pharmacological activity and other types of activity of various compounds in laboratory animals
			Dissatisfaction impressive	Does not know how to study the pharmacological activity and other types of activity of various compounds in laboratory animals
	Proficient (high level)	methods for studying the pharmacological activity and other types of activity of various compounds in laboratory animals	Great	Has a high level of knowledge of methods for studying the pharmacological activity and other types of activity of various compounds in laboratory animals
			Fine	Has a sufficient level of knowledge of methods for studying the pharmacological activity and other types of activity of various compounds in laboratory animals
			Satisfy impressive	Has partial knowledge of methods for studying the pharmacological activity and other types of activity of various compounds in laboratory animals
			Dissatisfaction impressive	Does not know methods for studying pharmacological activity and other types of activity of various compounds in laboratory animals
PC-1.2. Determines the pharmacokinetic parameters of substances in laboratory animals	Knows (threshold level)	theoretical basis for determining the pharmacokinetic parameters of substances in laboratory animals	Great	Formed and systematic knowledge about the theoretical basis for determining the pharmacokinetic parameters of substances in laboratory animals
			Fine	Formed, but containing individual gaps in knowledge about the theoretical basis for determining the pharmacokinetic parameters of substances in laboratory animals
			Satisfy impressive	Incomplete but systematic knowledge of the theoretical basis for determining the pharmacokinetic parameters of substances in laboratory animals
			Dissatisfaction impressive	Fragmentary, non-systematic knowledge of the theoretical basis for determining the pharmacokinetic parameters of substances in laboratory animals

	Can (advanced)	determine the pharmacokinetic parameters of substances in laboratory animals	Great	Able to determine at a high level the pharmacokinetic parameters of substances in laboratory animals
			Fine	Able to sufficiently determine the pharmacokinetic parameters of substances in laboratory animals
			Satisfy impressive	Partially able to determine the pharmacokinetic parameters of substances in laboratory animals
			Dissatisfaction impressive	Cannot determine the pharmacokinetic parameters of substances in laboratory animals
	Proficient (high level)	methods for determining the pharmacokinetic parameters of substances in laboratory animals	Great	Has a high level of knowledge of methods for determining the pharmacokinetic parameters of substances in laboratory animals
			Fine	Has a sufficient level of knowledge of methods for determining the pharmacokinetic parameters of substances in laboratory animals
			Satisfy impressive	Partial knowledge of methods for determining the pharmacokinetic parameters of substances in laboratory animals
			Dissatisfaction impressive	Does not know methods for determining the pharmacokinetic parameters of substances in laboratory animals
PC-1.3. Conducts studies of the bioavailability of substances on various in vitro and in vivo models	Knows (threshold level)	theoretical basis for studying the bioavailability of substances using various in vitro and in vivo models	Great	Formed and systematic knowledge about the theoretical foundations of studying the bioavailability of substances using various in vitro and in vivo models
			Fine	Formed, but containing individual gaps in knowledge about the theoretical foundations of studying the bioavailability of substances using various in vitro and in vivo models
			Satisfy impressive	Incomplete but systematic knowledge of the theoretical basis for studying the bioavailability of substances using various in vitro and in vivo models
			Dissatisfaction impressive	Fragmentary, non-systematic knowledge of the theoretical basis for studying the bioavailability of substances using various in vitro and in vivo models
	Can (advanced)	conduct studies of the bioavailability of substances on various in vitro and in vivo models	Great	Able to conduct high-level studies of the bioavailability of substances using various in vitro and in vivo models
			Fine	Able to conduct studies of the bioavailability of substances on various in vitro and in vivo models at a sufficient level

			Satisfy impressive	Partially knows how to study the bioavailability of substances on various in vitro and in vivo models
			Dissatisfaction impressive	Does not know how to study the bioavailability of substances on various in vitro and in vivo models
	Proficient (high level)	methods for studying the bioavailability of substances using various in vitro and in vivo models	Great	Has a high level of knowledge of methods for studying the bioavailability of substances using various in vitro and in vivo models
			Fine	Has a sufficient level of knowledge of methods for studying the bioavailability of substances using various in vitro and in vivo models
			Satisfy impressive	Partially proficient in methods for studying the bioavailability of substances using various in vitro and in vivo models
			Dissatisfaction impressive	Does not know methods for studying the bioavailability of substances using various in vitro and in vivo models
PC-1.5. Conducts the development of methods and pharmacokinetics research at the preclinical and clinical level	Knows (threshold level)	theoretical basis for developing methods and studying pharmacokinetics at the preclinical and clinical level	Great	Formed and systematic knowledge of the theoretical foundations for developing methods and studying pharmacokinetics at the preclinical and clinical level
			Fine	Formed, but containing individual gaps in knowledge about the theoretical foundations for developing methods and studying pharmacokinetics at the preclinical and clinical level
			Satisfy impressive	Incomplete but systematic knowledge of the theoretical basis for conducting method development and pharmacokinetic research at the preclinical and clinical level
			Dissatisfaction impressive	Fragmentary, non-systematic knowledge of the theoretical basis for developing methods and studying pharmacokinetics at the preclinical and clinical level
	Can (advanced)	develop methods and study pharmacokinetics at the preclinical and clinical level	Great	Ability to develop methods and study pharmacokinetics at a high level at the preclinical and clinical level
			Fine	Able to adequately develop methods and study pharmacokinetics at the preclinical and clinical level
			Satisfy impressive	Partially able to develop methods and study pharmacokinetics at the preclinical and clinical level
			Dissatisfaction impressive	Does not know how to develop methods and study pharmacokinetics at the preclinical and clinical level

	Proficient (high level)	methods for developing methods and studying pharmacokinetics at the preclinical and clinical level	Great	Has a high level of knowledge of methods for developing methods and studying pharmacokinetics at the preclinical and clinical level
			Fine	Has a sufficient level of knowledge of methods for developing methods and studying pharmacokinetics at the preclinical and clinical level
			Satisfy impressive	Has partial knowledge of methods for developing methods and studying pharmacokinetics at the preclinical and clinical level
			Dissatisfaction impressive	Does not know methods for developing methods and studying pharmacokinetics at the preclinical and clinical level

Criteria for grading a student in a practical test

Assessment	Requirements for developed competencies
"Great"	awarded to a student if he has fully completed the practice program, knows how to use theoretical knowledge when completing a practice assignment, copes well with tasks, questions and other types of application of knowledge, answered basic questions during the defense of practice, the answers are logical and complete in the disclosure of the topic, however One or two inaccuracies in the answer are allowed.
"Fine"	awarded to a student if he has fully completed the practice program, knows how to use theoretical knowledge when completing a practice assignment, copes well with tasks, questions and other types of application of knowledge, answered basic questions during the defense of practice, the answers are logical and complete in the disclosure of the topic, however three to four inaccuracies in the answer are allowed.
"satisfactorily"	awarded to a student if he has fully completed the practice program, knows how to use theoretical knowledge when completing a practice assignment, copes well with tasks, questions and other types of application of knowledge, answered basic questions during the defense of practice, did not answer basic questions during the defense of practice .
"unsatisfactory"	assigned to a student who has not completed the practice program, does not know how to use theoretical knowledge when completing a

	practice assignment, cannot cope with tasks, questions and other types of application of knowledge, has not answered basic questions during the defense of practice

A student who fails to complete the internship program for a valid reason is sent to practice again during his free time from class.

A student who fails to complete the internship program without a valid reason or receives an unsatisfactory grade is considered to have academic debt.

The liquidation of this debt is carried out in accordance with the regulatory documents of the Far Eastern Federal University.

Typical tasks for assessing knowledge, skills, abilities and experience

During the internship, the student must complete an individual task to study individual areas of work or activities of the organization, solve specific problems in the interests of the practice base and FEFU.

Individual assignment for research work:

First stage:

familiarization with the tasks and organization of practice, with the rules of the internal work schedule, conducting safety and fire safety briefings;

determining the topic of research work;

drawing up a research plan;

review and theoretical analysis of scientific literature on the research topic;

selection of methods for conducting scientific research;

coordination and adjustment of the research work plan with the supervisor.

Second phase:

conducting empirical research;

processing the received material and formulating conclusions;

registration of research results;

preparation of materials on the topic of research work for presentation at conferences and round tables; developing the skill of compiling thematic lists of references, catalogues, card files and other types of descriptions, classifications and typologies;

sorting and evaluating the material being studied according to the degree of novelty, relevance, specialization and other parameters;

study and analysis of planning for possible expansion of research activities;

analysis and replenishment of information and methodological support by the receiving organization;

comparative analysis of forms and methods of enterprise management;

research on the comparative effectiveness of modern active and interactive teaching methods;

studying the causes and experience of overcoming difficulties and problems that arise in activities.

Questions to defend your practice report:

1. Justify the choice of research material.

2. List the research methods mastered during research work. Justify the need for their use. Explain the operating principle of the equipment.

Head of OP Shokur O.A.

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)
Institute of Life Sciences and Biomedicine (School)

Department of Pharmacy and Pharmacology

Full Name

REPORT

Internship. Research work
according to the basic educational program for training specialists
specialty 05/33/01 Pharmacy

The author of the work is student gr._____
signature
" » 202_ Head of practice from the Institute of Housing and Mechanical Engineering of the Far Eastern Federal University.

_____
(position, academic title)

_____
(signature) (I.O.F)
" » 202_

The report is protected with a rating

_____
(signature) (I.O.F)
" » 202_

Vladivostok
202_

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)
Institute of Life Sciences and Biomedicine (School)

Department of Pharmacy and Pharmacology

Full Name

DIARY

undergoing industrial practice. Research work
student course

_____

(Full name.)

in the main educational program for training specialists in the field of 05/33/01 Pharmacy

Place of practice_____

_____

Practice time:
Start

_____

ending

_____

Head of practice:
from the university

_____

from the enterprise

_____

M.p.

Vladivostok 202_

THE FIRST DAY	
date	
day of the week	
place of work (department)	
content of the work (description of the process)	
compliance with schedule	
grade	
signature of the practice manager from the company	

SECOND DAY	
date	
day of the week	
place of work	
content of the work (description of the process)	
compliance with schedule	
grade	
signature of the practice manager from the company	

DAY …….	
date	
day of the week	
place of work	
content of the work (description of the process)	
compliance with schedule	
grade	
signature of the practice manager from the company	

Appendix 3

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)
Institute of Life Sciences and Biomedicine (School)

Department of Pharmacy and Pharmacology

I CONFIRM:
Head of OP
_____
_____FULL NAME.
"____" _____20__

INDIVIDUAL TASK

By _____
(type of practice)

student of _____ group _____
(FULL NAMEstudent)

Educational program _____

Base (place, organization) of practice_____
_____
_

Duration of practice from _____20___ to _____ 20___

Generalized formulation of the task	

Task schedule

Name of tasks (activities) that make up the task	Date of completion of the task (activity)
1.	
2.	
3.	

Head of practice _____ _____

signature full name, position

Appendix 4

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)
Institute of Life Sciences and Biomedicine (School)

Department of Pharmacy and Pharmacology

DIRECTION
for _____ practice

student of a specialty course_____
Last Name First Name Group

sent to _____
name of the base organization

address _____

Order on referral for educational practice dated No.
for _____ internship
in the field of study _____
for a period of
since **_____** ***20___*** to _____ 20___ (continuous/discrete)

Head of Practice

M.P. _____ _____ _____
(position, academic title) (signature) (I.O.F)

Notes on completion and dates of practice

Business name	Arrival and departure notes	Signature, decryption of signature, seal
Name of the enterprise, organization in accordance with the agreement	Arrived __.__.20__	
	Dropped out on __.__.20__	

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)

INSTITUTE OF LIFE SCIENCES AND BIOMEDICINE (SCHOOLS)

I APPROVED
Director of the Institute of Life Sciences and Biomedicine (School)

_____ Yu.S. Khotimchenko
Full name

"06" December 2022

WORK PROGRAM FOR PRODUCTION PRACTICE Production practice.
Undergraduate practice
Specialty: 05/33/01 Pharmacy
Specialization "Clinical and Experimental Pharmacy (in English)"

Vladivostok
2022

1. OBJECTIVES OF DEVELOPING PRODUCTION PRACTICES

The goals of pre-graduation practice are: to develop students' skills in independent research work and to create a theoretical and experimental basis for completing their final qualifying work and defending it.

2. TASKS OF PRODUCTION PRACTICE:

The objectives of pre-graduate practice are:

1. Acquisition of skills, abilities, knowledge of planning, preparation, organization and implementation of research work.
2. Training in modern methods of biochemical research, which are necessary to carry out scientific work.
3. Acquiring skills in working with scientific literature.
4. Selection of statistical processing methods and presentation of the results obtained.
5. Analysis of the results obtained.
6. Forming the skill of discussing, interpreting and presenting the results obtained.

3. PLACE OF PRE-GRADUATE PRACTICE IN THE STRUCTURE OF EP

Pre-diploma practice is carried out at the end of the 10th semester and belongs to the cycle of professional disciplines in the specialty of medical biochemistry of higher professional medical education.

4. TYPES, METHODS, PLACE AND TIME OF PRE-GRADUATE PRACTICE

Type of industrial practice – Industrial practice

Type of practice – Pre-graduate practice

The method of conducting practice is in-patient/on-site. Concentrated.

Time of practice – A semester

Place of practice –Research Institute of the Far Eastern Branch of the Russian Academy of Sciences, research laboratories of scientific institutes,federal state autonomous educational institution of higher education "Far Eastern Federal University", pharmacy institutions (Monastyrev.rf, LLC "NefRos", LLC "City United Social Pharmacy", Limited Liability Company "Latona").

5. STUDENT COMPETENCIES FORMED AS A RESULT OF COMPLETING PRODUCTION PRACTICE

Professional competencies of graduates and indicators of their achievement:

Type of professional activity tasks:	Code and name of professional competence	Code and name of the indicator of achievement of universal competence	Learning results by disciplines (modules), practices
research	PC-1 Able to take part in research in the field of assessing the effectiveness and safety of drugs	PC-1.1 Conducts studies of pharmacological activity and other types of activity of various compounds in laboratory animals	Knows the theoretical basis for studying the pharmacological activity and other types of activity of various compounds in laboratory animals Able to conduct studies of pharmacological activity and other types of activity of various compounds in laboratory animals Knows methods for studying the pharmacological activity and other types of activity of various compounds in laboratory animals
		PC-1.2 Determines the pharmacokinetic parameters of substances in laboratory animals	Knows the theoretical basis for determining the pharmacokinetic parameters of substances in laboratory animals Able to determine the pharmacokinetic parameters of substances in laboratory animals Knows methods for determining the pharmacokinetic parameters of substances in laboratory animals
		PC-1.3 Conducts studies of the bioavailability of substances on various models in vitro and in vivo	Knows the theoretical basis for studying the bioavailability of substances using various in vitro and in vivo models Able to study the bioavailability of substances using various in vitro and in vivo models Proficient in methods for studying the bioavailability of substances using various in vitro and in vivo models

		PC-1.5 Conducts the development of methods and pharmacokinetics research at the preclinical and clinical level	Knows the theoretical basis for developing methods and studying pharmacokinetics at the preclinical and clinical level Able to develop methods and study pharmacokinetics at the preclinical and clinical level Knows methods for developing methods and studying pharmacokinetics at the preclinical and clinical level
industrial	PC-2 Able to take part in the selection, justification of the optimal technological process and its implementation in the production of medicines for medical use	PC-2.1 Develops technological documentation for the industrial production of medicines, including biotechnological drugs	Knows the theoretical foundations of developing technological documentation for the industrial production of medicines Able to develop technological documentation for industrial production of medicines Knows methods of developing technological documentation for industrial production of medicines
		PC-2.2 Maintains the technological process during the industrial production of medicines, including biotechnological drugs	Knows the theoretical foundations of the technological process in the industrial production of medicines Able to carry out the technological process in the industrial production of medicines Knows the methods of conducting the technological process in the industrial production of medicines
		PC-2.3 Monitors the technological process during the industrial production of medicines,	Knows the theoretical foundations of process control in the industrial production of medicines

		including biotechnological drugs	Able to monitor the technological process in the industrial production of medicines Knows methods of monitoring the technological process in the industrial production of medicines
control and permitting	PK-3 Able to carry out control (supervision) activities over the activities of legal entities and individuals holding a licensefor pharmaceutical activities, to comply with mandatory requirements	PC-3.1 Conducts an examination of licensing documents for compliance with mandatory requirements and conditions for carrying out pharmaceutical activities	Knows the theoretical basis for conducting an examination of licensing documents for compliance with mandatory requirements and conditions for carrying out pharmaceutical activities Able to conduct an examination of licensing documents for compliance with mandatory requirements and conditions for carrying out pharmaceutical activities Knows methods of conducting examination of licensing documents for compliance with mandatory requirements and conditions for carrying out pharmaceutical activities
		PC-3.2 Participates in the examination of the compliance of facilities and employees with licensing requirements and conditions for carrying out pharmaceutical activities	Knows the theoretical foundations of examining the compliance of facilities and workers with licensing requirements and conditions for carrying out pharmaceutical activities Able to conduct an examination of the compliance of facilities and employees with licensing requirements and conditions for carrying out pharmaceutical activities Proficient in methods of assessing the compliance of facilities and employees with licensing requirements and conditions for carrying

			out pharmaceutical activities
	PC-4 Capable of participating in quality assurance activitiesmedicines in industrial production	PC-4.1 Conducts sampling at various stages of the technological cycle	Knows the theoretical basis of sampling at various stages of the technological cycle Able to carry out sampling at various stages of the technological cycle Knows sampling methods at various stages of the technological cycle
		PC-4.2 Develops regulatory documents to ensure the quality of medicines in industrial production	Knows the theoretical basis for the development of regulatory documents to ensure the quality of medicines in industrial production Able to develop regulatory documents to ensure the quality of medicines in industrial production Knows methods of developing regulatory documents to ensure the quality of medicines in industrial production
		PC-4.3 Compiles reports on activities to ensure the quality of medicines during industrial production	Knows the theoretical basis for drawing up reports on activities to ensure the quality of medicines in industrial production Able to draw up reports on activities to ensure the quality of medicines in industrial production Knows methods of drawing up reports on activities to ensure the quality of medicines in industrial production
pharmaceutical	PK-5 Able to produce medicines and take part in the production technology of finished productsmedicines	PC-5.1 Carry out measures to prepare the workplace, technological equipment, medicinal and auxiliary substances for the manufacture of medicinal products in accordance with recipes and (or) requirements	Knows the theoretical foundations of preparing a workplace, technological equipment, medicinal and auxiliary substances for the manufacture of medicinal products in accordance with recipes and (or) requirements Able to carry out measures to prepare the workplace, technological equipment, medicinal and auxiliary substances for

			the manufacture of medicinal products in accordance with recipes and (or) requirements Knows methods of preparing a workplace, technological equipment, medicinal and auxiliary substances for the manufacture of medicinal products in accordance with recipes and (or) requirements
		PC-5.2 Manufactures medicinal products, including in-pharmacy procurement and serial production, in accordance with established rules and taking into account the compatibility of medicinal and excipients, controlling quality at all stages of the technological process	Knows the theoretical foundations of the manufacture of medicinal products, including carrying out in-pharmacy procurement and serial production, in accordance with established rules and taking into account the compatibility of medicinal and excipients, controlling quality at all stages of the technological process Able to manufacture medicinal products, including in-pharmacy procurement and serial production, in accordance with established rules and taking into account the compatibility of medicinal and excipients, controlling quality at all stages of the technological process Knows the methods of manufacturing medicinal products, including carrying out in-pharmacy procurement and serial production, 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-5.3 Packages, labels and (or) prepares manufactured medicinal products for release	Knows the theoretical foundations of packaging, labeling and (or) registration of

			manufactured medicinal products for release Is able to package, label and (or) prepare manufactured medicinal products for release. Knows the methods of packaging, labeling and (or) registration of manufactured medicinal products for release
		PC-5.4 Registers data on the manufacture of medicinal products in the prescribed manner, including keeping substantive and quantitative records of groups of medicinal products and other substances subject to such registration	Knows the theoretical basis for registering data on the manufacture of medicinal products in the prescribed manner, including keeping substantive and quantitative records of groups of medicinal products and other substances subject to such registration Able to register data on the manufacture of medicinal products in the prescribed manner, including keeping subject-to-quantitative records of groups of medicinal products and other substances subject to such registration Knows methods of registering data on the manufacture of medicinal products in the prescribed manner, including keeping subject-to-quantitative records of groups of medicinal products and other substances subject to such registration
	PK-6 Able to solve professional problems when dispensing and selling medicines and other pharmaceutical products through pharmaceutical and medical organizations	PC-6.1 Conducts pharmaceutical examination of recipes and invoice requirements, as well as their registration and taxation in the prescribed manner	Knows the theoretical foundations of pharmaceutical examination of prescriptions and invoice requirements, as well as their registration and taxation in the prescribed manner Able to conduct pharmaceutical examination of recipes and invoice requirements,

			as well as their registration and taxation in the prescribed manner Knows the methods of pharmaceutical examination of recipes and invoice requirements, as well as their registration and taxation in the prescribed manner
		PC-6.2 Sells and dispenses medicines for medical use and other pharmaceutical products to individuals, and also releases them to departments of medical organizations, monitoring compliance with the procedure for dispensing medicines for medical use and other pharmaceutical products, providing pharmaceutical consultation and providing pharmaceutical information	Knows the theoretical basis for the sale and dispensing of medicinal products for medical use and other pharmaceutical products to individuals, as well as their dispensing to departments of medical organizations, monitoring compliance with the procedure for dispensing medicinal products for medical use and other pharmaceutical products, providing pharmaceutical consultation and providing pharmaceutical information Able to sell and dispense medicinal products for medical use and other pharmaceutical products to individuals, and also dispenses them to departments of medical organizations, monitoring compliance with the procedure for dispensing medicinal products for medical use and other pharmaceutical products, providing pharmaceutical consultation and providing pharmaceutical information Knows methods of selling and dispensing medicines for medical use and other pharmaceutical products to individuals, as well as dispensing them to departments of medical organizations, monitoring compliance with the procedure for dispensing medicines for medical use and other pharmaceutical

			products, providing pharmaceutical consultation and providing pharmaceutical information
		PC-6.3 Carry out office work for maintaining cash, organizational, administrative, reporting documents for retail sales	Knows the theoretical foundations of office work for maintaining cash, organizational, administrative, and reporting documents for retail sales Able to carry out office work on maintaining cash, organizational, administrative, and reporting documents for retail sales Proficient in office management methods for maintaining cash, organizational, administrative, and reporting documents for retail sales
		PC-6.4 Carry out office work for maintaining organizational, administrative, payment reporting documents for wholesale sales	Knows the theoretical foundations of record keeping, organizational, administrative, payment reporting documents for wholesale sales Able to carry out office work on maintaining organizational, administrative, payment reporting documents for wholesale sales Proficient in office management methods for maintaining, organizational, administrative, payment reporting documents for wholesale sales
		PC-6.5 Carries out pre-sale preparation, organizes and displays medicines and pharmaceutical products in the sales area and (or) showcases of departments of a pharmacy organization	Knows the theoretical foundations of pre-sale preparation, organizes and displays medicines and pharmaceutical products in the sales area and (or) showcases of departments of a pharmacy organization Knows how to carry out pre-sale preparation, organizes and displays medicines and

			pharmaceutical products in the sales area and (or) showcases of departments of a pharmacy organization Knows the methods of pre-sale preparation, organizes and displays medicines and pharmaceutical products in the sales area and (or) showcases of departments of a pharmacy organization
	PK-7 Able to provide pharmaceutical information and consultation during the dispensing and sale of drugs for medical use and other pharmaceutical products	PC-7.1 Provides information and consulting assistance to visitors of a pharmacy organization when choosing medications and other pharmaceutical products, as well as on issues of their rational use, taking into account the biopharmaceutical features of dosage forms	Knows the theoretical foundations of information and consulting assistance to visitors of a pharmacy organization when choosing medications and other pharmaceutical products, as well as on issues of their rational use, taking into account the biopharmaceutical features of dosage forms Able to provide information and consulting assistance to visitors of a pharmacy organization when choosing medications and other pharmaceutical products, as well as on issues of their rational use, taking into account the biopharmaceutical features of dosage forms Knows methods of information and consulting assistance to visitors of a pharmacy organization when choosing medications and other pharmaceutical products, as well as on issues of their rational use, taking into account the biopharmaceutical features of dosage forms
		PC-7.2 Informs medical workers about medications, their synonyms and analogues, possible side effects and interactions, taking into	Knows the theoretical basis of informing medical workers about drugs, their synonyms and analogues, possible side effects and interactions,

		account the biopharmaceutical features of dosage forms	taking into account the biopharmaceutical features of dosage forms Able to inform medical professionals about medications, their synonyms and analogues, possible side effects and interactions, taking into account the biopharmaceutical features of dosage forms Knows methods of informing medical workers about medications, their synonyms and analogues, possible side effects and interactions, taking into account the biopharmaceutical features of dosage forms
		PC-7.3 Makes a decision on replacing a prescribed medicinal product with synonymous or similar drugs in the prescribed manner based on information about groups of medicinal products and synonyms within one international nonproprietary name and their prices, taking into account the biopharmaceutical features of dosage forms	Knows the theoretical basis for making a decision on replacing a prescribed drug with synonymous or similar drugs in the prescribed manner based on information about groups of drugs and synonyms within one international nonproprietary name and their prices, taking into account the biopharmaceutical features of dosage forms Able to make a decision on replacing a prescribed drug with synonymous or similar drugs in the prescribed manner based on information about groups of drugs and synonyms within one international nonproprietary name and their prices, taking into account the biopharmaceutical features of dosage forms Knows methods for making decisions on replacing a prescribed drug with synonymous or similar drugs in the prescribed manner based

			on information about groups of drugs and synonyms within one international nonproprietary name and their prices, taking into account the biopharmaceutical features of dosage forms
expert-analytical	PK-8 Able to participate in monitoring the quality, effectiveness and safety of medicines and medicinal plant materials	PC-8.1 Conducts pharmaceutical analysis of pharmaceutical substances, excipients and drugs for medical use of factory production in accordance with quality standards	Knows the theoretical foundations of pharmaceutical analysis Able to conduct pharmaceutical analysis of pharmaceutical substances, excipients and drugs for medical use of factory production in accordance with quality standards Proficient in pharmaceutical analysis methods
		PC-8.2 Monitors the preparation of reagents and titrated solutions	Knows the theoretical principles of preparing reagents and titrated solutions Able to control the preparation of reagents and titrated solutions Knows methods of monitoring the preparation of reagents and titrated solutions
		PC-8.3 Standardizes prepared titrated solutions	Knows the theoretical foundations of standardization Able to standardize prepared titrated solutions Knows methods of standardization of titrated solutions
		PC-8.4 Conducts pharmacognostic analysis of medicinal plant raw materials and medicinal herbal preparations	Knows the theoretical foundations of pharmacognostic analysis of medicinal plant raw materials and medicinal herbal preparations Able to conduct pharmacognostic analysis of medicinal plant raw materials and medicinal herbal preparations Proficient in the method of pharmacognostic analysis of medicinal plant raw materials and

			medicinal herbal preparations
		PC-8.5 Informs, in the manner established by law, about the non-compliance of a medicinal product for medical use with established requirements or about the inconsistency of data on the effectiveness and safety of the medicinal product with the data on the medicinal product contained in the instructions for its use	Knows the procedure established by law for reporting non-conformity of a medicinal product Able to inform about the non-compliance of a medicinal product for medical use with established requirements or the discrepancy between the data on the effectiveness and safety of the medicinal product and the data on the medicinal product contained in the instructions for its use Knows methods of informing about the non-compliance of a medicinal product for medical use with established requirements or the discrepancy between data on the effectiveness and safety of the medicinal product and the data on the medicinal product contained in the instructions for its use
organizational and managerial	PK-9 Able to take part in planning and organizing resource provision for a pharmaceutical organization	PC-9.1 Determines the economic indicators of inventories of medicines and other pharmaceutical products	Knows the economic indicators of inventories of medicines and other pharmaceutical products Able to determine economic indicators of inventories of medicines and other pharmaceutical products Knows methods for determining economic indicators of inventories of medicines and other pharmaceutical products
		PC-9.2 Selects optimal suppliers and organizes procurement processes based on the results of a market study of suppliers of medicines for medical use and other pharmaceutical products	Knows the theoretical basis for selecting optimal suppliers and organizing procurement processes based on the results of a market study of suppliers of medicines for medical use and other pharmaceutical products Able to select optimal suppliers and organize

			procurement processes based on the results of market research of suppliers of medicines for medical use and other pharmaceutical products Knows methods for selecting optimal suppliers and organizing procurement processes based on the results of a market study of suppliers of medicines for medical use and other pharmaceutical products
		PC-9.3 Monitors the execution of contracts for the supply of medicines for medical use and other pharmaceutical products	Knows the theoretical basis for monitoring the execution of contracts for the supply of medicines for medical use and other pharmaceutical products Able to monitor the execution of contracts for the supply of medicines for medical use and other pharmaceutical products Knows methods of monitoring the execution of contracts for the supply of medicines for medical use and other pharmaceutical products
		PC-9.4 Conducts acceptance control of incoming medicines and other pharmaceutical products, checking and completing accompanying documents in the prescribed manner	Knows the theoretical basis of acceptance control of incoming medicines and other pharmaceutical products Able to carry out acceptance control of incoming medicines and other pharmaceutical products, checking and completing accompanying documents in the prescribed manner Knows methods of acceptance control of incoming medicines and other pharmaceutical products, checking and preparing accompanying documents in the prescribed manner
		PC-9.5 Conducts withdrawal from circulation of medicines and pharmaceutical	Knows the theoretical basis for the withdrawal from circulation of medicines and

		products that have become unusable, expired, falsified, counterfeit and substandard products	pharmaceutical products that have become unusable, expired, falsified, counterfeit and substandard products Able to remove from circulation medicines and pharmaceutical products that have become unusable, expired, falsified, counterfeit and substandard products Knows methods of removing from circulation medicines and pharmaceutical products that have become unusable, expired, falsified, counterfeit and substandard products
		PC-9.6 Carry out subject-quantitative accounting of medicines in the prescribed manner	Knows the theoretical foundations of subject-quantitative accounting of medicines in the prescribed manner Able to carry out subject-quantitative accounting of medicines in the prescribed manner Knows methods of subject-quantitative accounting of medicines in the prescribed manner
		PC-9.7 Organizes control over the availability and storage conditions of medicines for medical use and other pharmaceutical products	Knows the theoretical basis for monitoring the availability and storage conditions of medicines for medical use and other pharmaceutical products Able to organize control over the availability and storage conditions of medicines for medical use and other pharmaceutical products Knows methods of monitoring the availability and storage conditions of medicines for medical use and other pharmaceutical products

6. STRUCTURE AND CONTENT OF PRE-GRADUATE PRACTICE

The total labor intensity of industrial practice is 3 credit units, 108 hours.

No.	Sections (stages) of practice	Types of work in practice	Labor intensity (in hours)	Forms of current control
1	Preparatory stage	Attend the orientation meeting, receive the program and practice diary. Collection of necessary documents.Instruction on the rules of compliance with the sanitary-epidemiological regime and safety precautions Organizational meeting with representatives of the administration and specialists of the institution. Familiarization with the internal rules of the institution. Planning of the sequence and timing of work on the preparation of the project. Determination of methods for analyzing primary results.	12	Filling out the practice diary Individual plan for the implementation of research and development work. Providing the purpose and objectives of the planned research.
2	Production stage	**Methodical work:**work with modern literary sources regarding the problems of scientific work. Selection of laboratory research methods. Statistical analysis of own research materials, graphical display of statistical data. Use of information and communication technologies in work. **Research work:**study and analysis of scientific and methodological literature (articles, monographs, theses, etc.). Preparation of chapters 1, 2. Description of the research results.	54	Filling out the practice diary Presentation of a version of the "Introduction" chapter. Presentation of statistical tables. A written report on the number of sources examined. Written presentation of chapters 1, 2, 3 “Literature review”, “Organization and methods of research”, “Research results”.

		Analysis and synthesis, interpretation of the results of the research.		
3)	Final stage	**Research**: Editing, summarizing research results. Preparation of reporting documentation on practice, defense of the report on practice.	28	Written report on the practice. Providing chapters of the WRC in electronic form.
4)	Test		14	Test with grade
	TOTAL		108 hours	

7. EDUCATIONAL AND METHODOLOGICAL SUPPORT OF INDEPENDENT WORK OF STUDENTS IN PRE-GRADUATE PRACTICE

"Internship. Pre-graduate practice" is a special type of training directly related to further professional activities.

Before undergoing practical training, the student receives an individual assignment from the internship supervisor from the university, the content and scope of which are discussed with the internship supervisor.

Based on the results of the practice, the student draws up a report on the completion of the practice, after which he receives a test with a grade.

The practice report must contain the following elements:

− title page (Appendix 3);

− assignment and practice schedule (Appendix 1);

− a document confirming the fact of internship;

− a description drawn up by the head of the practice from the organization or structural unit, if the practice is carried out on the basis of FEFU;

− content;

− introduction (brief description of the practice and its main stages);

− the main part about the activities during the internship;

− completed individual task;

− conclusion;

− information sources;

The report is prepared in accordance with the “Requirements for the preparation of written work performed by FEFU students.”

Approximate structure of the main part of the report:

1. General information about the laboratory and its brief description (history, list of structural divisions indicating their purpose; description of the functions of the laboratory, research programs, description of development directions).

2. Descriptiontechnical means and methods of work, work on experimental installations, preparation of equipment and research objects.

3. Description of the results obtained with their visual demonstration (photos, graphs, etc.) and the necessary explanation.

4. Discussion of the results obtained with other relevant research in the field.

5. Conclusions and/or conclusion reflecting the essence and value of the work done.

In agreement with the internship supervisor from the university and depending on the location of this type of internship, the structure of the report or its individual parts may change.

After completing the internship and completing the report in accordance with the requirements, the student submits his report for defense to the supervisor from the university. Based on the results of the defense, a test is given with a grade (excellent, good, satisfactory, unsatisfactory):

“Excellent” – the necessary practical skills and professional competencies provided for by the internship program are fully developed, tasks are completed, the quality of their implementation is assessed with a number of points close to the maximum.

“Good” - the necessary practical skills and professional competencies provided for by the practical training program are fully developed, the tasks are completed, the quality of performance of none of them is rated with a minimum number of points, some types of tasks were completed with errors or not thoroughly enough.

“Satisfactory” – the necessary practical skills and professional competencies are basically formed, the gaps are not significant, some of the completed tasks contain errors.

“Unsatisfactory” - the necessary practical skills and professional competencies provided for by the practical training program have not been developed, all completed training assignments contain gross errors, additional independent work on the report materials will not lead to any significant improvement in the quality of assignments.

8. CERTIFICATION FORMS (BASED ON PRACTICE)

Reporting form – test with assessment

Form of certification based on the results of practice - defense of the report

For certification based on the results of the internship, the student must provide a report on the practice with a note from the practice manager, a diary of the internship, with a daily note from the practice manager on the completion of work according to the schedule.

Certification based on the results of practice is carried out in the form of defending a report in the form of a presentation. Reporting form: test with assessment.

Criteria for grading a student in a practical test

Assessment	Requirements for developed competencies
"Great"	awarded to a student if he has fully completed the practice program, knows how to use theoretical knowledge when completing a

	practice assignment, copes well with tasks, questions and other types of application of knowledge, answered basic questions during the defense of practice, the answers are logical and complete in the disclosure of the topic, however One or two inaccuracies in the answer are allowed.
"Fine"	awarded to a student if he has fully completed the practice program, knows how to use theoretical knowledge when completing a practice assignment, copes well with tasks, questions and other types of application of knowledge, answered basic questions during the defense of practice, the answers are logical and complete in the disclosure of the topic, however three to four inaccuracies in the answer are allowed.
"satisfactorily"	awarded to a student if he has fully completed the practice program, knows how to use theoretical knowledge when completing a practice assignment, copes well with tasks, questions and other types of application of knowledge, answered basic questions during the defense of practice, did not answer basic questions during the defense of practice .
"unsatisfactory"	assigned to a student who has not completed the practice program, does not know how to use theoretical knowledge when completing a practice assignment, cannot cope with tasks, questions and other types of application of knowledge, has not answered basic questions during the defense of practice

9. EDUCATIONAL, METHODOLOGICAL AND INFORMATION SUPPORT OF PRODUCTION PRACTICE

Main literature

1. Serov E.N. Research training for masters [Electronic resource]: textbook / E.N. Serov, S.I. Mironov. — Electron. text data. - St. Petersburg: St. Petersburg State University of Architecture and Civil Engineering, EBS ASV, 2016. - 56 p. - 978-5-9227-0621-6. - Access mode:http://www.iprbookshop.ru/66835.html

2. Kudryavtseva, T.A. Research work [Electronic resource]: teaching aid / T.A. Kudryavtseva, L.A. Zabodalova. — Electron. Dan. —

St. Petersburg: NRU ITMO, 2015. - 32 p. - Access mode:https://e.lanbook.com/book/91511

3. Research work [Electronic resource]: workshop/ - Electron. text data.— Stavropol: North Caucasus Federal University, 2016.— 246 pp.— Access mode:http://www.iprbookshop.ru/66064.html

4. Skvortsova L.M. Methodology of scientific research [Electronic resource]: textbook / Skvortsova L.M. - Electronic. text data.— M.: Moscow State University of Civil Engineering, IP Er Media, EBS ASV, 2014.— 79 pp.— Access mode:http://www.iprbookshop.ru/27036.html— EBS “IPRbooks”

additional literature

1. Kentbaeva B.A. Methodology of scientific research [Electronic resource]: textbook / Kentbaeva B.A.—Electron. text data.— Almaty: Nur-Print, 2014.— 209 p.— Access mode:http://www.iprbookshop.ru/69140.html

2. Kravtsova, E. D. Logic and methodology of scientific research [Electronic resource]: textbook. allowance / E. D. Kravtsova, A. N. Gorodishcheva. – Krasnoyarsk: Sib. federal univ., 2014. – 168 p. - ISBN 978-5-7638-2946-4 - Access mode:http://znanium.com/catalog.php?bookinfo=507377

3. Pleteneva T.V., Quality control of medicines [Electronic resource]: textbook / ed. T. V. Pleteneva - M.: GEOTAR-Media, 2014. - 560 p. - ISBN 978-5-9704-2634-0 - Access mode: http://www.studentlibrary.ru/book/ISBN9785970426340.html

4. Kharkevich D.A., Pharmacology [Electronic resource] / Kharkevich D.A. - M.: GEOTAR-Media, 2013. - 760 p. - ISBN 978-5-9704-2427-8 - Access mode:http://www.studentlibrary.ru/book/ISBN9785970424278.html

5. Krasnyuk I.I., Pharmaceutical technology. Technology of dosage forms [Electronic resource]: textbook / I. I. Krasnyuk, G. V. Mikhailova, T. V. Denisova, V. I. Sklyarenko; Ed. I. I. Krasnyuk, G. V. Mikhailova. - M.: GEOTAR-Media, 2013. - 656 p. - ISBN 978-5-9704-2694-4 - Access mode:http://www.studentlibrary.ru/book/ISBN9785970426944.html

Electronic resources and software

1. Federal Electronic Medical Library http://feml.scsml.rssi.ru/feml/
2. Legal information system http://www.consultant.ru/
3. Scientific electronic library eLIBRARY project of the Russian Foundation for Basic Research www.elibrary.ru
4. FEFU Scientific Library https://lib.dvfu.ru
5. Electronic library system Znanium.com
6. List of information technologies and software
7. Microsoft Office Professional Plus 2010; an office suite that includes software for working with various types of documents (texts, spreadsheets, databases, etc.);
8. 7Zip 9.20 - a free file archiver with a high degree of data compression;
9. ABBYY FineReader 11 - a program for optical character recognition;

10. Adobe Acrobat XI Pro – a software package for creating and viewing electronic publications in PDF format;

11. Adobe Photoshop CS6;

12. ESET Endpoint Security - comprehensive protection of workstations based on Windows OS. Virtualization support + new technologies;

13. Google Chrome;

14. LabSolutions LC/GC Workstation software, software for controlling the Shimadzu chromatographic system and processing the results obtained, including a software module for calculating the molecular weight characteristics of polymers;

15. Multifunctional UV Control Software, software for controlling the Shimadzu spectrophotometer and processing the results obtained;

16. LabSolutions IR software for controlling the Fourier IR spectrometer and processing the results obtained, in addition to standard functions, allows for measurements in photometric and kinetic modes. Includes a unique algorithm for searching spectra, as well as a library containing about 12,000 spectra, which greatly facilitates the task of identifying substances.

10. LOGISTICS AND TECHNICAL SUPPORT OF PRODUCTION PRACTICES

Name of equipped premises and premises for independent work	List of main equipment
Auditorium for conducting lectures, seminars and laboratory work 690922, Primorsky Krai, Vladivostok, Russky Island, Saperny Peninsula, Ayaks village, 10, Building 25.1, room. M403	Sets of laboratory furniture (tables and chairs), student board. Multimedia complex: Monoblock Lenovo C360G-i34164G500UDK; Projection screen Projecta Elpro Electrol, 300x173 cm; Multimedia projector, Mitsubishi FD630U, 4000 ANSI Lumen, 1920x1080; Built-in interface with automatic cable retraction system TLS TAM 201 Stan; Document camera Avervision CP355AF; Microphone lavalier UHF radio system Sennheiser EW 122 G3 consisting of a wireless microphone and receiver; Video conferencing codec LifeSizeExpress 220- Codeconly- Non-AES; Network video camera Multipix MP-HD718; Two LCD panels 47", Full HD, LG M4716CCBA; Audio switching and sound amplification subsystem; centralized uninterrupted power supply. The auditorium is also equipped for an open-type pharmacy: counters, display cases (cabinets, racks with samples of pharmaceutical products), a cash register.
Auditorium for conducting lectures, seminars and laboratory work 690922, Primorsky Krai, Vladivostok, Russky Island, Saperny Peninsula, Ayaks village, 10, Building 25.1, room. M420	Sets of educational furniture (tables and chairs), student board. Multimedia complex: Monoblock Lenovo C360G-i34164G500UDK; Projection screen Projecta Elpro Electrol, 300x173 cm; Multimedia projector, Mitsubishi FD630U, 4000 ANSI Lumen, 1920x1080; Built-in interface with automatic cable retraction system TLS TAM 201 Stan; Document

	camera Avervision CP355AF; Microphone lavalier UHF radio system Sennheiser EW 122 G3 consisting of a wireless microphone and receiver; Video conferencing codec LifeSizeExpress 220- Codeconly-Non-AES; Network video camera Multipix MP-HD718; Two LCD panels 47", Full HD, LG M4716CCBA; Audio switching and sound amplification subsystem; centralized uninterrupted power supply Laboratory equipment: Aquadistiller PE-2205 (5 l/h); analytical scales; laboratory scales Vibra SJ-6200CE (NPV=6200 g/ 0.1g); moisture meter AGS100; dual-beam spectrophotometer UV-1800 manufactured by Shimadzu; magnetic stirrer PE-6100 (10 pcs); magnetic stirrer PE-6110 M with heating (5 pcs); electric heating plate; infrared spectrophotometer IRAffinity-1S with Fourier transform; liquid chromatograph LC-20 Prominence with spectrophotometric and refractometric detector; laboratory centrifuge PE-6926 with a 10×5 ml rotor; a set of automatic Ecochem dispensers, a water bath, a drying cabinet, a fume hood, a water purification system. Sets of chemical reagents and laboratory glassware.
Audiences for independent work of students Reading rooms of the FEFU Scientific Library with open access to the collection (building A - level 10)	Educational furniture sets (tables and chairs) Monoblock HP ProOpe 400 All-in-One 19.5 (1600x900), Core i3-4150T, 4GB DDR3-1600 (1x4GB), 1TB HDD 7200 SATA, DVD+/-RW, GigEth, Wi -Fi, VT, usb kbd/mse, Win7Pro (64-bit)+Win8.1Pro (64-bit), 1-1-1 Wty Internet access speed 500 Mbit/sec. Workplaces for people with disabilities are equipped with displays and Braille printers; equipped with: portable devices for reading flat-printed texts, scanning and reading machines, video enlargers with the ability to regulate color spectrums; magnifying electronic magnifiers and ultrasonic markers.
Audience for independent work of students 690922, Primorsky Krai, Vladivostok, Russky Island, Saperny Peninsula, Ayaks village, 10, Building 25.1, room. M621	Sets of educational furniture (tables and chairs), student board. Monoblock Lenovo C360G-i34164G500UDK 19.5" Intel Core i3-4160T 4GB DDR3-1600 SODIMM (1x4GB)500GB Windows Seven Enterprise - 17 pieces; Wired LAN network - Cisco 800 series; wireless LANs for students are provided with a system based on 802.11a/b access points /g/n 2x2 MIMO(2SS).
Auditorium for conducting seminar-type classes and laboratory work 690922, Primorsky Krai, Vladivostok, Russky Island, Saperny Peninsula, Ayaks village, 10, Building 25.1, room. M409	Sets of laboratory furniture (tables, chairs, cabinets for storing equipment, reagents, pharmaceutical and laboratory glassware), student board. Laboratory equipment: water distiller, water bath, laboratory scales, pharmaceutical turntables, dispenser sets, laboratory stirrers, pH meter, suppository form, filtration unit. Sets of pharmaceutical substances, pharmaceutical and chemical glassware.
Auditorium for conducting seminar-type classes and laboratory work	Sets of laboratory furniture (tables, chairs, cabinets for storing equipment, reagents, pharmaceutical and

690922, Primorsky Territory, Vladivostok, Russky Island, Saperny Peninsula, Ayaks village, 10, Building L, room. L406	laboratory glassware), student board. Laboratory equipment: water distiller, water bath, laboratory scales, pharmaceutical turntables, dispenser sets, laboratory stirrers, apparatus for producing pharmaceuticals UNIQ -2 with replaceable attachments: granulator, coating kettle, mixer; Laboratory scales AGN100; Magnetic stirrer PE-6100 (5 pcs); Magnetic stirrer PE-6110 M with heating (2 pcs); Electric heating plate; UNIQ-7 rotary tableting press for 7 punches; mold for forming suppositories with 100 cells; device for determining the disintegration of tablets. Sets of pharmaceutical substances, pharmaceutical and chemical glassware.
Laboratory of Pharmacology and Biotesting 690922, Primorsky Krai, Vladivostok, Russky Island, Saperny Peninsula, Ayaks village, 10, Building 25.1, room. M806	Sets of laboratory furniture (tables, chairs, cabinets for storing equipment, reagents, pharmaceutical and laboratory glassware, fume hood) Equipment: Automatic biochemical analyzer Miura 200 with a capacity of 150 samples; Centrifuge 5804R, refrigerated, with A-4-44 swing-bucket rotor and adapters: 8x15 ml, 4; Electric water distiller Liston A1104; Immunological analyzer "Multiskan FC" with accessories; Veterinary hematological analyzer BC-2800 Vet; Boiling bath Baher (BAHER) included: stand for 24 test tubes with a diameter of up to 22 m; Ultra-Turrax T rotary homogenizer + dispersing elements S18N-19G-1 pcs; S;Electronic scales ED224S-RCE (NPV=220g d=0.1mg); Magnetic stirrer PE-6110 with heating; Multi-vortex V-32 for intensive mixing of bacterial and yeast cells; Solid state thermostat. Sets of chemical reagents and laboratory glassware.

For persons with disabilities and people with disabilities, the choice of places of practice is consistent with the requirement of their accessibility for these students and the practice is carried out taking into account the characteristics of their psychophysical development, individual capabilities and health status.

11. VALUATION FUNDS

Codes of formed competencies	Main indicators for assessing results	Assessment Tools
PC-1.1. Conducts studies of pharmacological activity and other types of activity of various compounds in laboratory animals	Knows theoretical fundamentalsstudying the pharmacological activity and other activities of various compounds in laboratory animals	Report
	Canconduct studies of pharmacological activity and other types of activity of various compounds in laboratory animals	
	Knows methodsstudying the pharmacological activity and	

	other activities of various compounds in laboratory animals	
PC-1.2. Determines the pharmacokinetic parameters of substances in laboratory animals	Knows theoretical fundamentalsdetermination of pharmacokinetic parameters of substances in laboratory animals	Report
	Candetermine the pharmacokinetic parameters of substances in laboratory animals	
	Knows methodsdetermination of pharmacokinetic parameters of substances in laboratory animals	
PC-1.3. Conducts studies of the bioavailability of substances on various in vitro and in vivo models	Knows theoretical fundamentalsstudying the bioavailability of substances in various in vitro and in vivo models	Report
	Canconduct studies of the bioavailability of substances on various in vitro and in vivo models	
	Knows methodsstudying the bioavailability of substances in various in vitro and in vivo models	
PC-1.5. Conducts the development of methods and pharmacokinetics research at the preclinical and clinical level	Knows theoretical fundamentalscarrying out the development of methods and pharmacokinetics research at the preclinical and clinical level	Report
	Candevelop methods and study pharmacokinetics at the preclinical and clinical level	
	Knows methodscarrying out the development of methods and pharmacokinetics research at the preclinical and clinical level	
PC-2.1. Develops technological documentation for industrial production of medicines	Knows the theoretical foundations of developing technological documentation for the industrial production of medicines	Report
	Can developtechnological documentation for industrial production of medicines	
	Knows development methodstechnological documentation for industrial production of medicines	
PC-2.2. Carries out the technological process in the industrial production of medicines	Knows theoretical fundamentalsconducting the technological process in the industrial production of medicines	Report

	Can implementtechnological process in the industrial production of medicines	
	Knows methodsconducting the technological process in the industrial production of medicines	
PC-2.3. Monitors the technological process during the industrial production of medicines	Knows theoretical fundamentalsprocess control in the industrial production of medicines	Report
	Can implementprocess control in the industrial production of medicines	
	Knows implementation methodsprocess control in the industrial production of medicines	
PC-3.1. Conducts an examination of licensing documents for compliance with mandatory requirements and conditions for carrying out pharmaceutical activities	Knows theoretical fundamentalsconducting an examination of licensing documents for compliance with mandatory requirements and conditions for carrying out pharmaceutical activities	Report
	Cancarry out an examination of licensing documents for compliance with mandatory requirements and conditions for carrying out pharmaceutical activities	
	Knows methodsconducting an examination of licensing documents for compliance with mandatory requirements and conditions for carrying out pharmaceutical activities	
PC-3.2. Participates in the examination of the compliance of facilities and employees with licensing requirements and conditions for carrying out pharmaceutical activities	Knows the theoretical foundations of examining the compliance of facilities and workers with licensing requirements and conditions for carrying out pharmaceutical activities	Report
	Can carry outexamination of the compliance of facilities and employees with licensing requirements and conditions for carrying out pharmaceutical activities	
	Proficient in methods of assessing the compliance of facilities and employees with licensing requirements and conditions for carrying out pharmaceutical activities	

PC-4.1. Conducts sampling at various stages of the technological cycle	Knows theoretical fundamentalssampling at various stages of the technological cycle	Report
	Cancarry out sampling at various stages of the technological cycle	
	Knows methodssampling at various stages of the technological cycle	
PC-4.2. Develops regulatory documents to ensure the quality of medicines in industrial production	Knows the theoretical foundations of pdevelopment of regulatory documents to ensure the quality of medicines in industrial production	Report
	Can do pdevelop regulatory documents to ensure the quality of medicines in industrial production	
	Proficient in methodsdevelopment of regulatory documents to ensure the quality of medicines in industrial production	
PC-4.3. Prepares reports on activities to ensure the quality of medicines during industrial production	Knows theoretical fundamentalscompiling reports on activities to ensure the quality of medicines in industrial production	Report
	Can composereports on activities to ensure the quality of medicines in industrial production	
	Knows methodscompiling reports on activities to ensure the quality of medicines in industrial production	
PC-5.1 Carry out measures to prepare the workplace, technological equipment, medicinal and auxiliary substances for the manufacture of medicinal products in accordance with recipes and (or) requirements	Knows theoretical fundamentalspreparing the workplace, technological equipment, medicinal and auxiliary substances for the manufacture of medicinal products in accordance with recipes and (or) requirements	Report
	Cancarry out measures to prepare the workplace, technological equipment, medicinal and auxiliary substances for the manufacture of medicinal products in accordance with recipes and (or) requirements	
	Knows methodspreparing the workplace, technological equipment, medicinal and auxiliary substances for the manufacture of medicinal	

	products in accordance with recipes and (or) requirements	
PC-5.2. Manufactures medicinal products, including in-pharmacy procurement and serial production, in accordance with established rules and taking into account the compatibility of medicinal and excipients, controlling quality at all stages of the technological process	Knows the theoretical foundations of the manufacture of medicinal products, including carrying out in-pharmacy procurement and serial production, in accordance with established rules and taking into account the compatibility of medicinal and excipients, controlling quality at all stages of the technological process	Report
	Able to manufacture medicinal products, including in-pharmacy procurement and serial production, in accordance with established rules and taking into account the compatibility of medicinal and excipients, controlling quality at all stages of the technological process	
	Knows the methods of manufacturing medicinal products, including carrying out in-pharmacy procurement and serial production, 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-5.3. Packages, labels and (or) prepares manufactured medicinal products for release	Knows theoretical fundamentalspackaging, labeling and (or) registration of manufactured medicinal products for release	Report
	Can dopack, label and (or) register manufactured medicinal products for release	
	Knows methodspackaging, labeling and (or) registration of manufactured medicinal products for release	
PC-5.4. Registers data on the manufacture of medicinal products in the prescribed manner, including keeping subject-to-quantitative records of groups of medicinal products and other substances subject to such registration	Knows the theoretical foundations of pregistration of data on the manufacture of medicinal products in the prescribed manner, including maintaining subject-quantitative records of groups of medicinal products and other substances subject to such registration	Report
	Canregister data on the manufacture of medicinal products in the prescribed manner, including keeping	

	subject-to-quantitative records of groups of medicinal products and other substances subject to such registration	
	Proficient in methodsregistration of data on the manufacture of medicinal products in the prescribed manner, including maintaining subject-quantitative records of groups of medicinal products and other substances subject to such registration	
PC-6.1. Conducts pharmaceutical examination of recipes and invoice requirements, as well as their registration and taxation in the prescribed manner	Knows theoretical fundamentalspharmaceutical examination of recipes and invoice requirements, as well as their registration and taxation in the prescribed manner	Report
	Can doconduct pharmaceutical examination of recipes and invoice requirements, as well as their registration and taxation in the prescribed manner	
	Knows methodspharmaceutical examination of recipes and invoice requirements, as well as their registration and taxation in the prescribed manner	
PC-6.2. Sells and dispenses medicinal products for medical use and other pharmaceutical products to individuals, as well as dispenses them to departments of medical organizations, monitoring compliance with the procedure for dispensing medicinal products for medical use and other pharmaceutical products, providing pharmaceutical consultation and providing pharmaceutical information	Knows theoretical fundamentalssales and dispensing of medicinal products for medical use and other pharmaceutical products to individuals, as well as their dispensing to divisions of medical organizations, monitoring compliance with the procedure for dispensing medicinal products for medical use and other pharmaceutical products with pharmaceutical consulting and provision of pharmaceutical information	Report
	Cansell and dispense medicinal products for medical use and other pharmaceutical products to individuals, and also release them to departments of medical organizations, monitoring compliance with the procedure for dispensing medicinal products for medical use and other pharmaceutical products, providing pharmaceutical consultation and providing pharmaceutical information	

	Knows methodssales and dispensing of medicinal products for medical use and other pharmaceutical products to individuals, as well as their dispensing to divisions of medical organizations, monitoring compliance with the procedure for dispensing medicinal products for medical use and other pharmaceutical products with pharmaceutical consulting and provision of pharmaceutical information	
PC-6.3. Carries out office work for maintaining cash, organizational, administrative, and reporting documents for retail sales	Knows theoretical fundamentalsoffice work for maintaining cash, organizational, administrative, reporting documents for retail sales	Report
	Cancarry out office work on maintaining cash, organizational, administrative, reporting documents for retail sales	
	Knows methodsoffice work for maintaining cash, organizational, administrative, reporting documents for retail sales	
PC-6.4. Carries out office work on maintaining organizational, administrative, payment reporting documents for wholesale sales	Knows theoretical fundamentalsrecords management, organizational, administrative, payment reporting documents for wholesale sales	Report
	Cancarry out office work on maintaining organizational, administrative, payment reporting documents for wholesale sales	
	Knows methodsrecords management, organizational, administrative, payment reporting documents for wholesale sales	
PC-6.5. Carries out pre-sale preparation, organizes and displays medicines and pharmaceutical products in the sales area and (or) showcases of departments of the pharmacy organization	Knows theoretical fundamentalspre-sale preparation, organizes and displays medicines and pharmaceutical products in the sales area and (or) showcases of departments of the pharmacy organization	
	Cancarry out pre-sale preparation, organize and carry out the display of medicines and pharmaceutical products in the sales area and (or) showcases of	

	departments of the pharmacy organization	
	Knows methodspre-sale preparation, organizes and displays medicines and pharmaceutical products in the sales area and (or) showcases of departments of the pharmacy organization	
PC-7.1. Provides information and consulting assistance to visitors of the pharmacy organization when choosing medications and other pharmaceutical products, as well as on issues of their rational use, taking into account the biopharmaceutical features of dosage forms	Knows theoretical fundamentalsinformation and consulting assistance to visitors of a pharmacy organization when choosing medications and other pharmaceutical products, as well as on issues of their rational use, taking into account the biopharmaceutical features of dosage forms	Report
	Canprovide information and consulting assistance to visitors of a pharmacy organization when choosing medications and other pharmaceutical products, as well as on issues of their rational use, taking into account the biopharmaceutical features of dosage forms	
	Knows methodsinformation and consulting assistance to visitors of a pharmacy organization when choosing medications and other pharmaceutical products, as well as on issues of their rational use, taking into account the biopharmaceutical features of dosage forms	
PC-7.2. Informs medical workers about medications, their synonyms and analogues, possible side effects and interactions, taking into account the biopharmaceutical features of dosage forms	Knows theoretical fundamentalsinforming medical workers about medications, their synonyms and analogues, possible side effects and interactions, taking into account the biopharmaceutical features of dosage forms	Report
	Caninform medical workers about medications, their synonyms and analogues, possible side effects and interactions, taking into account the biopharmaceutical features of dosage forms	
	Knows methodsinforming medical workers about medications, their synonyms and analogues, possible side effects and interactions, taking into	

	account the biopharmaceutical features of dosage forms	
PC-7.3. Makes a decision on replacing a prescribed medicinal product with synonymous or similar drugs in the prescribed manner based on information about groups of medicinal products and synonyms within one international nonproprietary name and their prices, taking into account the biopharmaceutical features of dosage forms	Knows theoretical fundamentalsmaking a decision to replace a prescribed medicinal product with synonymous or similar drugs in the prescribed manner based on information about groups of medicinal products and synonyms within one international nonproprietary name and their prices, taking into account the biopharmaceutical features of dosage forms	Report
	Canmake a decision on replacing a prescribed drug with synonymous or similar drugs in the prescribed manner based on information about groups of drugs and synonyms within one international nonproprietary name and their prices, taking into account the biopharmaceutical features of dosage forms	
	Knows methodsmaking a decision to replace a prescribed medicinal product with synonymous or similar drugs in the prescribed manner based on information about groups of medicinal products and synonyms within one international nonproprietary name and their prices, taking into account the biopharmaceutical features of dosage forms	
PC-8.1. Conducts pharmaceutical analysis of pharmaceutical substances, excipients and drugs for medical use of factory production in accordance with quality standards	Knows the theoretical foundations of pharmaceutical analysis	Report
	Can carry outpharmaceutical analysis of pharmaceutical substances, excipients and drugs for medical use of factory production in accordance with quality standards	
	Proficient in pharmaceutical analysis methods	
PC-8.2. Monitors the preparation of reagents and titrated solutions	Knows theoretical fundamentalspreparation of reagents and titrated solutions	Report
	Able to controlpreparation of reagents and titrated solutions	

	Knows methodscontrol over the preparation of reagents and titrated solutions	
PC-8.3. Standardizes prepared titrated solutions	Knows the theoretical foundations of standardization	Report
	Able to standardizeprepared titrated solutions	
	Knows methodsstandardization of titrated solutions	
PC-8.4. Conducts pharmacognostic analysis of medicinal plant raw materials and medicinal herbal preparations	Knows theoretical fundamentalspharmacognostic analysis of medicinal plant raw materials and medicinal herbal preparations	Report
	Can carry outpharmacognostic analysis of medicinal plant raw materials and medicinal herbal preparations	
	Masters the methodpharmacognostic analysis of medicinal plant raw materials and medicinal herbal preparations	
PC-8.5. Informs in the manner established by law about the non-compliance of a medicinal product for medical use with established requirements or about the discrepancy between data on the effectiveness and safety of the medicinal product and the data on the medicinal product contained in the instructions for its use	Knowsthe procedure established by law for reporting non-conformity of a medicinal product	Report
	Knows how to informon the non-compliance of a medicinal product for medical use with established requirements or on the discrepancy between the data on the effectiveness and safety of the medicinal product and the data on the medicinal product contained in the instructions for its use	
	Knows methods of informingon the non-compliance of a medicinal product for medical use with established requirements or on the discrepancy between the data on the effectiveness and safety of the medicinal product and the data on the medicinal product contained in the instructions for its use	
PC-9.1. Determines the economic indicators of inventories of medicines and other pharmaceutical products	Knowseconomic indicators of inventories of medicines and other pharmaceutical products	Report
	Candetermine the economic indicators of inventories of	

	medicines and other pharmaceutical products	
	Knows methods ofdetermination of economic indicators of inventories of medicines and other pharmaceutical products	
PC-9.2. Selects optimal suppliers and organizes procurement processes based on the results of market research of suppliers of medicines for medical use and other pharmaceutical products	Knows theoretical fundamentalsselecting optimal suppliers and organizing procurement processes based on the results of a market study of suppliers of medicines for medical use and other pharmaceutical products	Report
	Able to select optimal suppliers and organize procurement processes based on the results of market research of suppliers of medicines for medical use and other pharmaceutical products	
	Knows methodsselecting optimal suppliers and organizing procurement processes based on the results of a market study of suppliers of medicines for medical use and other pharmaceutical products	
PC-9.3. Monitors the execution of contracts for the supply of medicines for medical use and other pharmaceutical products	Knows the theoretical basis for monitoring the execution of contracts for the supply of medicines for medical use and other pharmaceutical products	Report
	Able to monitor the execution of contracts for the supply of medicines for medical use and other pharmaceutical products	
	Knows methods of monitoring the execution of contracts for the supply of medicines for medical use and other pharmaceutical products	
PC-9.4. Conducts acceptance control of incoming medicines and other pharmaceutical products, checking and completing accompanying documents in the prescribed manner	Knows theoretical fundamentalsacceptance control of incoming medicines and other pharmaceutical products	Report
	Cancarry out acceptance control of incoming medicines and other pharmaceutical products, checking and completing accompanying documents in the prescribed manner	
	Knows methodsacceptance control of incoming medicines and other pharmaceutical products, checking and completing accompanying	

	documents in the prescribed manner	
PC-9.5. Conducts withdrawal from circulation of medicines and pharmaceutical products that have become unusable, expired, falsified, counterfeit and substandard products	Knows theoretical fundamentalswithdrawal from circulation of medicines and pharmaceutical products that have become unusable, expired, falsified, counterfeit and substandard products	Report
	Cancarry out the withdrawal from circulation of medicines and pharmaceutical products that have become unusable, expired, falsified, counterfeit and substandard products	
	Knows methodswithdrawal from circulation of medicines and pharmaceutical products that have become unusable, expired, falsified, counterfeit and substandard products	
PC-9.6. Carries out subject-quantitative accounting of medicines in the prescribed manner	Knows theoretical fundamentalssubject-quantitative accounting of medicines in the prescribed manner	Report
	Cancarry out subject-quantitative accounting of medicines in the prescribed manner	
	Knows methodssubject-quantitative accounting of medicines in the prescribed manner	
PC-9.7. Organizes control over the availability and storage conditions of medicines for medical use and other pharmaceutical products	Knows theoretical fundamentalscontrol over the availability and storage conditions of medicines for medical use and other pharmaceutical products	Report
	Able to organize control over the availability and storage conditions of medicines for medical use and other pharmaceutical products	
	Knows methodscontrol over the availability and storage conditions of medicines for medical use and other pharmaceutical products	

REPORTING DOCUMENTATION ON PRACTICE AND SUMMARY OF PRACTICE RESULTS

All student work must be recorded daily in the Practice Diary (Appendix 1), which is signed by the immediate supervisor of the practice.

The “practice diary” is prepared in a folder on A4 sheets and consists of the

following sections:

- a brief description of the institution (practice base) in which the student worked (plan and layout of the premises, their purpose, availability of equipment, flow diagram of the material being studied, the main list of research methods used in the work);
- daily records about the nature and volume of work performed, which reflect everything that the student independently did, observed, and took part in.

The student must provide an analysis and assessment of the technology used from the point of view of progressiveness and reflect this in the report with appropriate motivations. Description of the main activities that, in the student's opinion, should be carried out to improve labor safety in the laboratory; quality control methods; Providing the laboratory with consumable reagents and reagent kits.

Develop a scheme for setting up and conducting an experiment to control the quality of laboratory research, analyze the results obtained and formulate a conclusion.

At the end of the internship, the student-intern submits the reporting documentation ("Internship Diary" and "Summary Report on Internship") to the person responsible for the internship at the department.

The structure of the report on pre-graduation practice includes the main types of activities of the student in practice (see appendix), including the number of all types of tasks (Table 2), the trainee's diary, and when completing an internship in third-party organizations, an additional voucher with a mark on the dates of the internship is submitted.

The report on pre-graduation practice is prepared with a detailed description of the following sections (for comments, see the appendix).

1) Individual work plan for the internship period.

2) Organizational work.

3) Methodological work.

4) Research work (summary tables and graphs of research results, their brief description, layout of the research project).

5) Applications (used questionnaires, survey cards, testing protocols, video and photographic materials on electronic media, etc.).

6) Trainee's diary.

The report itself is presented in printed and electronic form, with electronic presentations on digital media.

To prepare a report, the student is allocated 2-3 days in the practice calendar.

At the department meeting, the student's report is heard, the results and

results of the internship are approved, with a review and rating for the student intern being compiled.

Current monitoring of knowledge and skills acquired as a result of internship is carried out through the use of test questions, demonstration of the implementation of laboratory diagnostic procedures, sanitary and epidemiological measures and solving proposed situational problems.

The result of pre-diploma practice is a test with an assessment, which is submitted to the department to a commission appointed by the director of the department.

Based on the exam results, the student is given a final mark, which takes into account:

- compliance student production disciplines (terms of laboratory internship, volume of work performed work);
- theoretical preparedness;
- degree of mastery of practical skills;
- compliance with the rules of medical ethics and deontology;
- preparation of reporting documentation;
- participation V educational and research And research work (UIRS);
- characteristics of the base manager.

The final grade, taking into account current academic performance and the exam grade, is indicated in the grade book.

Information about the results of the internship (examination reports) is submitted in a timely manner to the person responsible for the internship at the graduating department - no later than the beginning of the academic year.

Evaluation of the students' internship results is taken into account when considering the issue of awarding a scholarship based on the results of the next examination session.

A student who does not complete the internship program within the established time frame for a valid reason (illness, child care, family circumstances) is sent to practice during the next semester according to an individual plan.

A student who has not completed the internship program, received negative feedback on the work and does not have an internship credit, upon the recommendation (conclusion) of the graduating department, may be nominated by the head of the department to the Academic Council for expulsion for academic failure.

Head of OP Shokur O.A.

Application 1

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)
Institute of Life Sciences and Biomedicine (School)

Department of Pharmacy and Pharmacology

I CONFIRM:
Head of OP
_____
_____FULL NAME.
"____" _____20__

INDIVIDUAL TASK

By _____
(type of practice)

student of _____ group _____
(FULL NAMEstudent)

Educational program _____

Base (place, organization) of practice_____
_____
_

Duration of practice from _____20___ to _____ 20___

Generalized formulation of the task	

Task schedule

Name of tasks (activities) that make up the task	Date of completion of the task (activity)
1.	
2.	
3.	

Head of practice _____ _____

signature full name, position

APPENDIX 2

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)
Institute of Life Sciences and Biomedicine (School)

Department of Pharmacy and Pharmacology

DIARY

according to _____

practice

student _____

group_____

program_____

Place of practice_____

Duration of internship:_____weeks_____

Head of practice from FEFU

_____

Head of practice from a specialized organization

_____

1. Student work schedule

No.	Name of works	Calendar dates		Last name of the practice manager
		Start	ending	

2. Student's work diary

date	Summary of the trainee's work	Signature head

3. Results of report protection

The report is protected by "____" _____ 20___

With a rating of _____

Head of OP _____ AND ABOUT. Surname

Appendix 3

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)
Institute of Life Sciences and Biomedicine (School)

Department of Pharmacy and Pharmacology

The report is protected with a rating of
_____
"_____"_____20__ g

Supervisor
educational program
_____ AND ABOUT.
Surname

REPORT
about completing pre-graduation internship

_____
(full name of the profile organization)

Student of group _____ _____ (_____)
Signature Full name
Head of Practice
from the specialized organization _____ (_____)
Signature Full name

Head of Practice
from FEFU _____ (_____)
Signature Full name

Appendix 4

Internship referral form

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"Far Eastern Federal University"
(FEFU)
Institute of Life Sciences and Biomedicine (School)

Department of Pharmacy and Pharmacology

DIRECTION

for _____ practice

student of a specialty course

Last Name First Name Group _____
(Full Name)
sent to _____
name of the base organization

address _____

Order on assignment to industrial practice from No. 1
for _____ internship
in the field of study _____
for a period of
since _____ 20___ to _____ 20___ (continuous/discrete)

Head of Practice

M.P. _____ _____ _____
(position, academic title) (signature) (I.O.F)

Notes on completion and dates of practice

Business name	Arrival and departure notes	Signature, decryption of signature, seal
Name of the enterprise, organization in accordance with the agreement	Arrived __.__.20__	
	Dropped out on __.__.20__	