

МИНОБРНАУКИ РОССИИ

**Федеральное государственное бюджетное образовательное
учреждение высшего образования "Пермский
государственный национальный исследовательский
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Кафедра фармакологии и фармации

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Программа учебной практики

PHARMACEUTICAL PROPAEDEUTICAL PRACTICE

Код УМК 93092

Утверждено
Протокол №6
от «23» марта 2020 г.

Пермь, 2020

1. Вид практики, способ и форма проведения практики

Вид практики **учебная**

Тип практики **практика по получению первичных профессиональных умений и навыков, в том числе первичных умений и навыков научно-исследовательской деятельности**

Способ проведения практики **стационарная, выездная**

Форма (формы) проведения практики **дискретная**

2. Место практики в структуре образовательной программы

Учебная практика « Pharmaceutical Propaedeutical Practice » входит в Блок « С.2 » образовательной программы по направлениям подготовки (специальностям):

Специальность: **33.05.01** Фармация

направленность Программа широкого профиля (для иностранных граждан)

Цель практики :

The purpose of pharmaceutical propaedeutical practice is to provide students with primary professional knowledge; familiarization of students with the work of pharmacies of various organizational and legal forms in the field of production, commercial, economic and legal and information activities.

Задачи практики :

Practice objectives:

To prepare the student for practical activities in pharmacist positions in pharmacies and other structures that have the right to engage in pharmaceutical activities, to lay the foundations of knowledge for further creative development;

teach students the principles of storing medicines and medical products in a pharmacy;

to teach to observe the sanitary regime in the assistant rooms of pharmacies, in the aseptic unit; the rules for the processing of pharmaceutical inventory and tableware;

teach the rules of window dressing in a pharmacy.

3. Перечень планируемых результатов обучения

В результате прохождения практики **Pharmaceutical Propaedeutical Practice** у обучающегося должны быть сформированы следующие компетенции:

33.05.01 Фармация (направленность : Программа широкого профиля (для иностранных граждан))

ПК.16 способность к участию в организации деятельности фармацевтических организаций

4. Содержание и объем практики, формы отчетности

Pharmaceutical propaedeutical practice gives a systematic understanding of the methods of work and the principles of organizing pharmaceutical business at its various stages.

Направления подготовки	33.05.01 Фармация (направленность: Программа широкого профиля (для иностранных граждан))
форма обучения	очная
№№ триместров, выделенных для прохождения практики	6
Объем практики (з.е.)	3
Объем практики (ак.час.)	108
Форма отчетности	Экзамен (6 триместр)

Примерный график прохождения практики

Количество часов	Содержание работ	Место проведения
	Tasks and functions of pharmacies. Device and equipment of pharmacies, industrial premises, their purpose and interconnection. States pharmacies. Health and safety in the pharmacy	
8	Requirements for the structure of the pharmacy. Its main functions.	Pharmacies in Perm, Department of chemistry, Perm state University
	Requirements for personal hygiene, professional hygiene of employees, rules for cleaning industrial premises. Sanitary measures carried out in a pharmacy to comply with the sanitary regime.	
8	Requirements for the degree of cleanliness in pharmacy premises.	Pharmacies in Perm, Department of chemistry, Perm state University
	Sanitary requirements for the manufacture of drugs in a pharmacy; processing, washing and drying of pharmaceutical ware; receiving and storing distilled water and water for injection	
9	Requirements for the manufacturing process of drugs in a pharmacy. Keeping the drug manufacturing process clean.	Pharmacies in Perm, Department of chemistry, Perm state University
	Acquaintance with the organization of work of the prescription-production department for the manufacture of dosage forms: tasks, staff, organization of workplaces.	
9	Prescription department of the pharmacy. Requirements for him.	Pharmacies in Perm, Department of chemistry, Perm state University
	Familiarity with the equipment. Processing, washing, drying and sterilizing dishes. Familiar with the device weights and weights. Mastering the weighing technique. Powder weighing and packing. Packing of powders of intra pharmaceutical prep	
10	Familiarization with pharmacy equipment.	Pharmacies in Perm, Department of chemistry, Perm state University
	Measuring liquid preparations, filtering, filtering, capping and dispensing liquid medicines. Packing liquid drugs intra pharmaceutical preparations using dispensers	

Количество часов	Содержание работ	Место проведения
9	The manufacture of liquid dosage forms. Requirements for him.	Pharmacies in Perm, Department of chemistry, Perm state University
Acquaintance with the aseptic conditions of the preparation of ophthalmic and injection drugs (in the case of the presence of an aseptic unit in the pharmacy), with the equipment for filtering and sterilization. Packing eye drops		
9	Production of sterile dosage forms in a pharmacy. Requirements for it.	Pharmacies in Perm, Department of chemistry, Perm state University
The principles of storage in the pharmacy of medicines with regard to toxicological and pharmacological groups, physico-chemical properties, storage method, shelf life.		
9	Storage conditions in the pharmacy of drugs of various groups.	Pharmacies in Perm, Department of chemistry, Perm state University
Storage in the pharmacy of medicinal plant materials, rubber products, dressings. Participation in the acceptance of goods received from the supplier, placement in storage places		
9	Storage in a pharmacy of other pharmaceutical items.	Pharmacies in Perm, Department of chemistry, Perm state University
Acquaintance with the organization of the work of the departments of over-the-counter supply and finished medicinal products: tasks, staff, organization of workplaces. Window dressing, advertising		
9	Over-the-counter drug delivery. Organization and structure of the department.	Pharmacies in Perm, Department of chemistry, Perm state University
Familiarity with the range of medicines and medical products. Participation in the sale of goods from the department of non-prescription leave.		
10	The nomenclature of the over-the-counter department.	Pharmacies in Perm, Department of chemistry, Perm state University
Report design		
9	The structure and nature of filling the diary of a practice report.	Pharmacies in Perm, Department of chemistry, Perm state University

5. Перечень учебной литературы, необходимой для проведения практики

Основная

1. Richard S. Larson Bioinformatics and Drug Discovery. Humana Press, 2006. Online ISBN 978-1-59259-964-6. Текст электронный // : <https://link.springer.com/book/10.1385/1592599648#toc>
<https://link.springer.com/book/10.1385/1592599648>
2. Zaheer-Ud-Din Babar. Pharmacy Practice Research Methods / Zaheer-Ud-Din Babar // Publisher Name: Springer, Singapore. — 2020. — 265 p. — ISBN 978-981-15-2993-1. — [Электронный ресурс].
<https://link.springer.com/book/10.1007/978-981-15-2993-1>
3. Yvonne Bouwman-Boer, V'lain Fenton-May, Paul Le Brun Practical Pharmaceutics. An International Guideline for the Preparation, Care and Use of Medicinal Products. KNMP and Springer International Publishing Switzerland 2015. Online ISBN 978-3-319-15814-3. Текст электронный // :
<https://link.springer.com/book/10.1007/978-3-319-15814-3> <https://link.springer.com/book/10.1007/978-3-319-15814-3>

Дополнительная

1. Marianthi G. Ierapetritou, Rohit Ramachandran Process Simulation and Data Modeling in Solid Oral Drug Development and Manufacture. Springer Science+Business Media, New York, 2016. Online ISBN978-1-4939-2996-2. Текст электронный // : <https://link.springer.com/book/10.1007/978-1-4939-2996-2#toc>
<https://link.springer.com/book/10.1007/978-1-4939-2996-2>

6. Перечень ресурсов сети «Интернет», требуемых для проведения практики

Для проведения практики использование ресурсов сети «Интернет» не предусмотрено.

7. Перечень информационных технологий, используемых при проведении практики

Образовательный процесс по практике **Pharmaceutical Propaedeutical Practice** предполагает использование следующего программного обеспечения и информационных справочных систем:

Presentation materials (slides on the topics of lecture and practical classes).
On-line access to the Electronic Library System (EDS).
Access to the university's electronic educational information environment;
Testing.

The list of necessary licensed and (or) free software:

1. Office suite of applications "LibreOffice".
2. An application that allows you to view and play media content of PDF files "Adobe Acrobat Reader DC".
3. Programs, demonstrations of video materials (player) "WindowsMediaPlayer".
4. The program for viewing Internet content (browser) "Google Chrome".

При освоении материала и выполнения заданий по дисциплине рекомендуется использование материалов, размещенных в Личных кабинетах обучающихся ЕТИС ПГНИУ (**student.psu.ru**).

При организации дистанционной работы и проведении занятий в режиме онлайн могут использоваться:

система видеоконференцсвязи на основе платформы BigBlueButton (<https://bigbluebutton.org/>).
система LMS Moodle (<http://e-learn.psu.ru/>), которая поддерживает возможность использования текстовых материалов и презентаций, аудио- и видеоконтент, а так же тесты, проверяемые задания, задания для совместной работы.
система тестирования Indigo (<https://indigotech.ru/>).

8. Описание материально-технической базы, необходимой для проведения практики

1. Lecture classes - An audience equipped with presentation equipment (projector, screen, computer / laptop) with appropriate software.
2. Seminar-type classes (seminars, workshops) - An audience equipped with presentation equipment (projector, screen, computer / laptop) with the appropriate software, chalk (s) or marker board.
3. Laboratory classes - Laboratory of Pharmaceutical Technology, equipped with specialized equipment. The composition of the equipment is defined in the passport of the laboratory.
4. Independent work - An audience for independent work, equipped with computer equipment with the ability to connect to the Internet, provided with access to the electronic information and educational environment of the university.

Premises of the Scientific Library of PSU.

Помещения научной библиотеки ПГНИУ для обеспечения самостоятельной работы обучающихся:

1. Научно-библиографический отдел, корп.1, ауд. 142. Оборудован 3 персональными компьютера с доступом к локальной и глобальной компьютерным сетям.
2. Читальный зал гуманитарной литературы, корп. 2, ауд. 418. Оборудован 7 персональными компьютерами с доступом к локальной и глобальной компьютерным сетям.

3. Читальный зал естественной литературы, корп.6, ауд. 107а. Оборудован 5 персональными компьютерами с доступом к локальной и глобальной компьютерным сетям.

4. Отдел иностранной литературы, корп.2 ауд. 207. Оборудован 1 персональным компьютером с доступом к локальной и глобальной компьютерным сетям.

5. Библиотека юридического факультета, корп.9, ауд. 4. Оборудована 11 персональными компьютерами с доступом к локальной и глобальной компьютерным сетям.

6. Читальный зал географического факультета, корп.8, ауд. 419. Оборудован 6 персональными компьютерами с доступом к локальной и глобальной компьютерным сетям.

Все компьютеры, установленные в помещениях научной библиотеки, оснащены следующим программным обеспечением:

Операционная система ALT Linux;

Офисный пакет Libreoffice.

Справочно-правовая система «КонсультантПлюс»

9. Методические указания для обучающихся по освоению дисциплины

The reporting document is a practice diary, which the student makes together with the supervisor from the base, guided by the practice program. Every day, one hour of student working time is given to the design of the diary. Carrying out certain types of work of propaedeutic practice listed above, the student should be guided by the following tasks and brief recommendations for their implementation, namely:

1. Get acquainted with safety in the pharmacy.

2. Acquaint with the premises of the pharmacy and their purpose, paying attention, first of all, to the prescription-production department (assistant, defector, material and other rooms). In the assistant room, you need to pay attention to the design of shtangles with drugs of various groups (List A and B), their storage, location on the turntables, the organization of work on the packaging, quality control of drugs. In the diary to make a brief summary on this item;

3. Acquaint with the ways of promotion of prescriptions in the pharmacy from their receipt to the issuance of the prepared drug, paying attention to the forms of the forms, the correctness of the design of the recipes (order No. 110);

4. Learn how to handle, wash, dry, sterilize dishes, sealing and auxiliary material. Before performing these types of work, it is necessary to familiarize yourself with the instructions, guidelines and orders (No. 214, 309). The diary should describe the methods of processing the dishes used in this pharmacy, indicate the capacity of the bottles, shtangles used in the pharmacy, their coloring, list the closures, give a list of devices and devices used for washing, drying devices);

5. To get acquainted with the apparatus for obtaining purified water and water for injection, the conditions for their production, collection, storage, organization of the supply of purified water to workplaces. In the diary, indicate the types of devices and draw a diagram of the device of one of the distillers;

6. Familiarize yourself with the device devices used to dispense substances by weight and mark it in the diary;

7. To learn how to weigh on hand and other types of scales dry, liquid, thick and viscous-plastic substances. The diary should briefly describe the actions you performed;

8. Learn how to form suppositories of the masses prepared by the pharmacist (if there are suppositories in the pharmacy). It is necessary to learn how to wrap candles in paper, to pack them in paper boxes. The diary should briefly describe the actions you performed;

9. Learn how to measure liquid medicines and auxiliary substances with the help of a pharmacy burette, a pharmaceutical pipette, measuring cylinders and other measuring devices. At the same time, you should familiarize yourself with the device of pharmaceutical burettes (with a two-way valve, with a diaphragm valve), a burette installation, and a pharmaceutical pipette. The diary should give a list of all types of dispensers and draw a diagram of the pharmaceutical burette, pharmaceutical pipette and liquid dispenser;

10. Learn how to make the right choice of bottles in terms of volume and color in accordance with the volume of the medicinal product and the properties of medicinal substances, select corks, arrange the bottles for tempering, seal with metal caps for running-in (in case of manufacturing medicines under aseptic conditions);
11. To get acquainted with the organization of aseptic conditions in which eye, injectable and antibiotic preparations are made. The diary should list those devices and devices that are used in the pharmacy for sterilization, filtration, quality control of drugs manufactured under aseptic conditions;
12. To take a personal part in the packaging and packing of drugs for intra-pharmaceutical preparations, learn how to correctly prepare them, depending on their purpose, with the main labels. In the diary should stick all the samples used in the pharmacy labels.

For students with disabilities and persons with disabilities on the basis of their written application, the organization of practice is implemented taking into account the peculiarities of psychophysical development, individual capabilities and health of students. This ensures compliance with the following General requirements: the use of special technical means of training

collective and individual use, providing the services of an assistant, providing such a student with the necessary technical assistance, providing convenient access to the buildings and premises where practices are held, other conditions without which it is impossible or difficult to pass the practice. The choice of places of practice for the disabled and persons with disabilities is made taking into account the requirements of accessibility for students and recommendations of medical and social expertise reflected in the individual rehabilitation program of the disabled person. At the direction of the disabled person or person with disabilities in the organization, to the enterprise industry internship supervisor negotiates with the company the terms of its passage and activities taking into account the recommendations of the medico-social assessment and individual program of rehabilitation of the disabled. To master the theoretical part of the practice, disabled people and persons with disabilities are given the opportunity to use electronic technologies, remote mastering of the material by providing tasks and their control over the Internet, as well as individual consultations using both e-mail and visual communication using "Skype". When performing the experimental part of the practice, additional means of protection are provided as necessary, individual assistance of educational and support personnel is provided, as well as other measures taking into account the nosologies of the disease of students. The format of the protection of practice reports for persons with disabilities and persons with disabilities is established taking into account their individual psychophysical characteristics (orally, in writing, using electronic or other technical means). In the course of protection of the report on practice the students with disabilities has the right to use technical means necessary for it. For the visually impaired, a portable video magnifier can be provided, it is possible to use your own devices. For deaf and hard of hearing students can be presented sound amplifying equipment, it is possible to use equipment for individual use. At the request of a students with disabilities in the process of protection of the report on practice, the presence of an assistant can be provided, providing the student with the necessary technical assistance, taking into account his individual characteristics. If necessary, persons with disabilities and persons with disabilities may be given additional time to prepare responses when defending practice reports.

During the period of restrictive measures that impede the conduct of educational practices in the educational process in the usual manner (self-isolation mode, quarantine, observation), the educational institution establishes a special distance learning mode for the implementation of the educational practice "Pharmaceutical propaedeutic practice".

The main objective of educational practice in this case is to obtain professional skills provided by remote technologies: mastering the material by submitting assignments and controlling them via Internet resources, individual consultations using both e-mail and visual communication based on online platforms that provide text, voice and video communications over the Internet.

The reporting document is a practice diary, which the student makes together with the supervisor from the base, guided by the practice program. Every day, one hour of student working time is given to the design of the diary. Carrying out certain types of work of propaedeutic practice listed above, the student should be guided by the

following tasks and brief recommendations for their implementation, namely:

1. Get acquainted with safety in the pharmacy.
2. Acquaint with the premises of the pharmacy and their purpose, paying attention, first of all, to the prescription-production department (assistant, defector, material and other rooms). In the assistant room, you need to pay attention to the design of shtangles with drugs of various groups (List A and B), their storage, location on the turntables, the organization of work on the packaging, quality control of drugs. In the diary to make a brief summary on this item;
3. Acquaint with the staff of the pharmacy, paying attention to the name of positions, the main functions of employees;
4. Acquaint with the ways of promotion of prescriptions in the pharmacy from their receipt to the issuance of the prepared drug, paying attention to the forms of the forms, the correctness of the design of the recipes (order No. 110);
5. Learn how to handle, wash, dry, sterilize dishes, capping and auxiliary material. Before performing these types of work, it is necessary to familiarize yourself with the instructions, guidelines and orders (No. 214, 309). The diary should describe the methods of processing the dishes used in this pharmacy, indicate the capacity of the bottles, shtangles used in the pharmacy, their coloring, list the closures, give a list of devices and devices used for washing, drying devices);
6. Acquaint with the apparatus for obtaining purified water and water for injection, the conditions for their production, collection, storage, organization of the supply of purified water to workplaces. In the diary, indicate the types of devices and draw a diagram of the device of one of the distillers;
7. Familiarize yourself with the device devices used to dispense substances by weight and mark it in the diary;
8. To learn how to weigh on hand and other types of scales dry, liquid, thick and viscous-plastic substances. When performing this section, you should focus on the weighing of powders, proper selection of packaging and labeling. It should be noted that viscous liquids (fatty, mineral oils, glycerin, etc.) are weighed using prescription scales into pre-sterilized wide-necked flasks, and viscous plastic masses (thick extracts, petroleum jelly, lanolin, etc.) into paper capsules (from filter, waxed or parchment paper). The diary should briefly describe the actions you performed;
9. Learn how to form suppositories of the masses prepared by the pharmacist (if there are suppositories in the pharmacy). At the same time, one should learn to roll out the suppository block from the mass, divide it into doses, and form candles from each dose. If possible, it is necessary to become familiar with the preparation of suppositories by pouring into forms, and at the final stages to take part in this work. It is necessary to learn how to wrap candles in paper, to pack them in paper boxes. The diary should briefly describe the actions you performed;
10. Learn how to measure liquid medicines and excipients with the help of a pharmacy burette, a pharmaceutical pipette, measuring cylinders and other measuring devices. At the same time, you should familiarize yourself with the device of pharmaceutical burettes (with a two-way valve, with a diaphragm valve), a burette installation, and a pharmaceutical pipette. You should also take part in the packaging of liquid medicines with liquid dispensers. At the same time it is necessary to familiarize yourself with the types of dispensers available in the pharmacy, the principles of their work. The diary should provide a list of all types of dispensers and draw diagrams of a pharmaceutical burette, a pharmaceutical pipette and a liquid dispenser;
11. Learn how to make the right choice of bottles in terms of volume and color in accordance with the volume of the medicinal product and the properties of medicinal substances, select corks, arrange the bottles for tempering, seal with metal caps for running-in (in the case of manufacturing drugs under aseptic conditions);
12. To familiarize with the organization of aseptic conditions in which eye, injection preparations and preparations with antibiotics are made. It is necessary to pay attention to the premises in which these medicines are manufactured, what sanitary regime, methods of disinfecting air, utensils, auxiliary materials, and personal hygiene of personnel working in these conditions. The diary should list those devices and devices that are used in the pharmacy for sterilization, filtration, quality control of drugs manufactured under aseptic conditions;

13. To take a personal part in the packaging and packing of drugs for intra-pharmaceutical preparations, learn how to correctly prepare them depending on their purpose with the main labels (“Outer”, “Inner”, “Eye drops”, etc.) and additional (taking into account the properties of medicinal substances state of aggregation, etc.). In the diary should stick all the samples used in the pharmacy labels.

Фонды оценочных средств для проведения промежуточной аттестации

Планируемые результаты обучения по дисциплине для формирования компетенции и критерии их оценивания

Компетенция	Планируемые результаты обучения	Критерии оценивания результатов обучения
<p>ПК.16 способность к участию в организации деятельности фармацевтических организаций</p>	<p>Know the basics of the organization and functioning of the pharmacy organization, the sanitary regime of the pharmacy. To be able to work with small-scale mechanization tools, regulatory documents. Own: initial skills in the manufacture of dosage forms in a pharmacy, skills in using regulatory documents.</p>	<p style="text-align: center;">Неудовлетворительно</p> <p>The knowledge is unsystematic, fragmentary. The report made gross, fundamental errors. Difficulties and errors are not resolved after leading questions of the teacher. Untimely execution of the report (or its absence).</p> <p style="text-align: center;">Удовлетворительно</p> <p>Knowledge of the main provisions of the program. The report is not complete, without justification and explanation. Significant difficulties in theoretical issues relating to the periods considered by the subject. Errors are eliminated by additional questions of the teacher.</p> <p style="text-align: center;">Хорошо</p> <p>Full knowledge of the training material provided for by the program, the successful completion of all tasks provided by the forms of current control. The report is substantiated, reasoned. Minor errors, inaccuracies, which are corrected after the comments of the teacher.</p> <p style="text-align: center;">Отлично</p> <p>Comprehensive in-depth knowledge after practice. The report is substantiated, reasoned.</p>

Оценочные средства

Вид мероприятия промежуточной аттестации : Экзамен

Способ проведения мероприятия промежуточной аттестации : Защищаемое контрольное мероприятие

Продолжительность проведения мероприятия промежуточной аттестации :
время отводимое на доклад 5

Показатели оценивания

The student did not appear for practice or did not issue a practice diary and did not write a report.	Неудовлетворительно
The practice diary and the report on it is not designed in accordance with the	Удовлетворительно

criteria; when defending a job, the student does not answer the questions asked or refuses oral protection.	Удовлетворительно
The practice diary and the report on it is designed in accordance with the criteria, but when protecting work, the student does not answer all the questions asked.	Хорошо
The practice diary and the report on it is designed in accordance with the criteria; when defending a job, the student answers all the questions asked.	Отлично