

Catalog of elective disciplines for the 2023-2024

1. **Department of Pharmacognosy**
2. **Level of training:** scientific and pedagogical doctorate
3. **Specialty:** 8D110400 «Pharmacy»
4. **Year of study:** 1
5. **The name of the elective discipline:** "Good practice of cultivation and collection (GACP) of medicinal plants"
6. **Number of credits:** 3
7. **Goals:**

to promote the development of ideas about the conditions of plant growth, different types of environmental factors, the principles of the allocation of ecological groups of plants and the ability of plants to form community regimes, the development of plant assessment skills in relation to growing conditions.

8. **Tasks:**

- formation of doctoral students' mastery of environmental research skills and their application in practice, development.
- introduction of resource-saving and low-waste technologies;
- replacement of scarce natural resources with alternative and use of secondary raw materials;
- to develop a methodological approach and a system of indicators for assessing the quality of the natural environment;
- the ability to develop and apply technologies for rational use of natural resources and environmental protection, to forecast man-made impacts, to know the regulatory legal acts regulating the legal relations of resource use in nature conservation and to be able to apply them in practice.

9. **Justification of the choice of discipline:**

In recent years, many works have appeared on the human impact on the environment. More and more often they began to write about the conflict of man with nature, about the violation of the ecological balance in nature by man, and even about the onset of a global ecological catastrophe in the near future. Many Western scientists believe that the ecological crisis is a direct consequence of the ever-increasing growth of the national population and the strengthening of human industrial activity in the era of the technological revolution. In our country, the restoration of forests is carried out not only by forestry, but also by public organizations.

10. **Learning outcomes (competencies):**

Knowledge (cognitive sphere)	Skills and abilities (psychomotor sphere)	Personal and professional competence (relationships)
<p>-Demonstrates the knowledge to investigate the importance of the ecological component in ensuring the sustainable development of socio-ecological and economic systems and the quality of the medicinal plant environment. To reveal the system of ecological and economic interests of preserving the systemic integrity of the medicinal plant environment.</p> <p>-Demonstrates knowledge of the technique and technology of computer collection, cultivation, storage and processing of information used for professional</p>	<p>-Observes an environmental measure when collecting medicinal plant raw materials.</p> <p>-Carries out the acceptance of LRS and selection for analysis in accordance with the NTD, carry out static processing and registration of the results of commodity analysis.</p> <p>-Determines the quality, carries out the procurement of LRS in accordance with the fundamentals of the legal system and legislation of Kazakhstan in the field of healthcare, international</p>	<p>- Knows the environmental aspects of obtaining toxic substances from the LRS, numerical indicators that regulate the quality of the LRS, and their methods of determination, improvement of existing methods of analysis, development of business plans, the main directions of scientific research in the field of LR.</p> <p>-Solves situational tasks, adhering to the legislation of the Republic of Kazakhstan in the field of healthcare,</p>

<p>activities in the field of standardization.</p> <p>-Knows the general concept of work safety in chemical testing laboratories, standardization, standards, laws used in standardization, medicinal plants, medicinal plant raw materials.</p> <p>-Knows the phytochemical analysis of medicinal raw materials of plant and animal origin. Knows how to form the skills and abilities necessary for the implementation of the professional activity of a doctoral student.</p>	<p>standards, and other regulatory and technical documentation.</p> <p>-Demonstrates knowledge of the legislation of the Republic of Kazakhstan in the field of healthcare, international standards, their structure and other regulatory and technical documentation regulating quality, procurement rules, acceptance, requirements for the terms and conditions of storage of medicinal plant raw materials, the basics of the legal system of Kazakhstan, etc.</p> <p>-Demonstrates knowledge of the basic necessary scientific, educational and professional literature for a future specialist, suitable for working with medicinal plants used in phytotherapy.</p>	<p>international standards, their structure and other regulatory and technical documentation regulating quality, procurement rules, acceptance, requirements for the terms and conditions of storage of medicinal plant raw materials, the basics of the legal system of Kazakhstan, etc.</p>
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11. Литература:

Основная

1. Самылина, И. А. Фармакогнозия. Атлас. В 3 т. Т. 1. Общая часть. Термины и техника микроскопического анализа в фармакогнозии [Текст] : учеб. пособие / И. А. Самылина, О. Г. Аносова. - ; Рек. УМО по мед. и фарм. образованию вузов России. - М. : ГЭОТАР - Медиа, 2010. - 192 с. : ил.
2. Самылина, И. А. Фармакогнозия. Атлас. В 3 т. Т. 2. Лекарственное растительное сырье. Анатомо-диагностические признаки фармакопейного и нефармакопейного лекарственного растительного сырья [Текст] : учеб. пособие / И. А. Самылина, О. Г. Аносова. - ; Рек. УМО по мед. и фарм. образованию вузов России. - М. : ГЭОТАР - Медиа, 2010. - 384 с. : ил
3. Самылина, И. А. Фармакогнозия. Атлас. В 3 т. Т. 2. Лекарственное растительное сырье. Анатомо-диагностические признаки фармакопейного и нефармакопейного лекарственного растительного сырья [Текст] : учеб. пособие / И. А. Самылина, О. Г. Аносова. - ; Рек. УМО по мед. и фарм. образованию вузов России. - М. : ГЭОТАР - Медиа, 2010. - 384 с. : ил
4. Самылина, И. А. Атлас лекарственных растений и сырья [Текст] : учеб. пособие по фармакогнозии / И. А. Самылина, А. А. Сорокина. - М. : Авторская Академия : Товарищество науч. изд. КМК, 2008. - 318 с

Дополнительная:

1. Руководство к практическим занятиям по фармакогнозии (под ред. И.А.Самылиной и А.А.Сорокиной), Москва, 2007, «МИА», 671 с.
 2. Руководство к практическим занятиям по фармакогнозии. Анализ фасованной продукции (под ред. И.А.Самылиной), Москва, 2008, «МИА», 288с.
 3. Самылина И.А., Сорокина А.А. Атлас лекарственных растений и сырья. М., «Авторская академия», 2008, 318с.
 4. Практикум по фармакогнозии (под редакцией В.Н.Ковалева). Харьков, 2004, 512 стр
- Электронные источники:

1. Самылина, И. А. Фармакогнозия. Атлас. В 3 т. Т.1 [Электронный ресурс] : учебник / И. А. Самылина, О. Г. Аносова. - Электрон. текстовые дан. (71,6 Мб). - М. : Изд. группа "ГЭОТАР-Медиа", 2012. - эл. опт. диск (CD-ROM)
2. Самылина, И. А. Фармакогнозия. Атлас. В 3 т. Т. 2 [Электронный ресурс] : учебник / И. А. Самылина, О. Г. Аносова. - Электрон. текстовые дан. (101 Мб). - М. : Изд. группа "ГЭОТАР-Медиа", 2012. - эл. опт. диск (CD-ROM)
3. Самылина, И. А. Фармакогнозия : Атлас. В 3 т. Т. 3. [Электронный ресурс] : учебник / И. А. Самылина, О. Г. Аносова. - Электрон. текстовые дан. (142 Мб). - М. : Изд. группа "ГЭОТАР-Медиа", 2012. - эл. опт. диск (CD-ROM)
4. Фармакогнозия. Атлас: учебное пособие: в 3-х томах. - М. : ГЭОТАР-Медиа, 2010. - Т. 1. - 192 с. : ил. ЭБС/<http://www.studmedlib.ru/>

1. Department: organization and management of the pharmaceutical business

2. Level of education: scientific and pedagogical PhD programme

3. Specialty: D140-Pharmacy

4. Course: 1

5. Name of the elective discipline: The concept of marketing research in pharmacy

6. Number of credits: 4 credits

7. Purpose: To acquire professional competencies necessary for the systematic search, collection, analysis, interpretation and presentation of results in the process of research work.

8. Tasks:

- to study the place of marketing research in the field of drug circulation;
- to acquire systematic knowledge of doctoral students about the methodology of marketing research;
- to teach how to carry out pharmaceutical market research;
- to acquire practical skills in determining the competitiveness of pharmaceutical organizations;
- to teach how to use information based on IT-technologies in the field of professional activity.

9. Rationale for the choice of discipline:

The development of the sphere of drug circulation in a market economy involves the use of marketing research methods to study the behavior of consumers, intermediaries, suppliers, competitors, and, in general, the entire market situation. In order to strengthen competitive advantages, pharmaceutical market participants cannot do without objective information and analytical materials obtained as a result of marketing research. In this regard, marketing research is necessary for the successful operation of any enterprise, since the use of their results will reduce the degree of inevitable risk, reasonably develop corporate (portfolio, growth, competitive), functional and instrumental strategies.

10. Learning outcomes (competencies)

Knowledge (cognitive sphere)	Skills and abilities (psychomotor sphere)	Personal and professional competencies (relationships)
demonstrates a systematic understanding of conceptual approaches to marketing research based on the International and European Codes of Marketing Research , the importance of marketing research and information support of marketing in the field of medicines circulation.	<ul style="list-style-type: none"> • plans marketing research of the pharmaceutical market, determining the sample size and justifying the choice of marketing research methods, developing the design of a drug consumer research based on the differentiation of the marketing environment; • determines the market capacity of medicines and medical devices, types of segmentation based on the study of the 	<ul style="list-style-type: none"> • possesses the skills of public speaking with the presentation of their own judgments, analysis and synthesis of information, building partnerships, trusting relationships with colleagues and healthcare workers, demonstrating multiculturalism and openness in work; • engages in professional growth by demonstrating

	<p>marketing environment of the enterprise and the pharmaceutical market using modern methods of marketing analysis, arguing own conclusions, evaluating and interpreting the results of scientific research, explaining the observed facts and phenomena, their cause-and-effect relationships, presenting and publishing the results of scientific research, introducing scientific achievements in the pharmaceutical industry;</p> <ul style="list-style-type: none"> • conducts a critical analysis and evaluation of marketing information, demand, competitors and competitiveness of a pharmaceutical and pharmacy enterprise, choosing methods for predicting the need for certain groups of medicines, methods for studying the range of pharmaceutical products. 	<p>introspection skills, teaching experience at the higher education level, searching information in databases for writing research papers, developing ideas, systematizing and interpreting scientific research results based on critical thinking.</p>
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11. Literature

Main:

1. Arystanov, Zh. M. Management and marketing in pharmacy: study guide / Zh. M. Arystanov, A. T. Tokseitova. - Almaty: Evero, 2016. - 532 p.
2. Shertaeva, K. D. Pharmaceutical marketing: textbook / K. D. Shertaeva; Ministry of Health of the Republic of Kazakhstan; Rep. center of innovative technologies med. education; SKPhA. - Shymkent: B. i., 2012. - 152 p.

Additional:

1. Management and economics of pharmacy: textbook / ed. I.A. Narkevich. – M.: GEOTAR-Media, 2017. – 928 p.

Electronic resources:

1. Shertaeva, K. D. Pharmaceutical marketing [Electronic resource]: okulyk / K. D. Shertaeva, K. Zh. Mamytbaeva; MHS of RK. OKMPhA. - Electron. text data. - Shymkent, 2016. - el. opt. disk (CD-ROM) (1.17Mb).
EMCD is posted on the educational portal ukma . kz
2. Electronic library "Student's consultant". Access link: <http://www.studmedlib.ru> , LOGIN ibragim123, PASSWORD Libukma123
3. Website of the Library and Information Center of the Academy lib.ukma.kz
4. SKMA Media Library <https://media.skma.edu.kz/>
5. Digital library "Aknurpress" www.aknurpress.kz register and enter the promo code SDH-28
6. SKMA Repository <http://lib.ukma.kz/repository/>
7. [Republican Interuniversity Electronic Library http://rmebrk.kz/](http://rmebrk.kz/)
8. [base of normative legal acts " Law " https://zan.kz/ru](https://zan.kz/ru)
9. Paragraph [Medicinehttps://online.zakon.kz/Medicine/](https://online.zakon.kz/Medicine/)
10. Code of the Republic of Kazakhstan dated July 7, 2020 No. 360-VI "On the health of the people and the healthcare system" (with amendments and additions). Ch. 2, art. 10; ch. 5, paragraph 3; ch. 27.28; https://online.zakon.kz/document/?doc_id=34464437

1. **Department:** organization and management of pharmaceutical business
2. **Level of education:** scientific and pedagogical PhD programme
3. **Specialty:** D 140-Pharmacy
4. **Course:** 1
5. **Name of the elective discipline:** Management bases of good practices in pharmacy
6. **Number of credits:** 3 credits
7. **Purpose:** Formation of professional and communication competencies for the application of the basic principles, categories, methods and tools of quality management in modern pharmaceutical organizations in the market.
8. **Tasks:**

- to form systemic knowledge on the development of documentation for the organization's quality management system in accordance with the requirements of ISO 9000 standards when building a system and preparing an enterprise for certification;
- to acquire skills in applying international standards in the process of creating and certifying a quality management system at a pharmaceutical enterprise;
- to study the methodology for creating quality management systems in pharmaceutical enterprises;
- to acquire systemic knowledge on audit and certification issues based on the requirements of the current legislation in the field of quality;
- to teach how to apply quality management methods in the process of performing technological operations;
- to teach how to use information based on IT technologies in the field of professional activity.

9. Rationale for the choice of discipline:

Currently, the implementation of quality systems based on international GxP standards in pharmacy is becoming an urgent need. It should be noted that without ensuring a stable quality that meets the requirements of consumers, it is impossible to rationally integrate the national economy into the world economy and take a worthy place in it.

A modern pharmaceutical organization must create an effective management system that will contribute to the quality implementation of all processes, which in turn will ensure the achievement of a quality result. Thus, quality management is aimed not only at the sphere of quality management in the organization, it covers the entire management system of the company, based on a systematic approach to managing all types of activities. In this regard, the study of the discipline "Organizational Foundations of Good Practices in Pharmacy (GxP)" takes on special significance.

10. Learning outcomes (competencies)

Knowledge (cognitive sphere)	Skills and abilities (psychomotor sphere)	Personal and professional competencies (relationships)
<ul style="list-style-type: none"> • of the main provisions of the modern concept of quality management, the mechanism of classical and modern methods and tools of quality management, the relationship between the concepts of Good Pharmaceutical Practices (GxP) and their role in 	<ul style="list-style-type: none"> • manages quality at pharmaceutical production enterprises, in pharmacy organizations, integrating quality management with scientific management schools, quality management strategy into the overall strategic management system of the enterprise, applying the concept of Total Quality Management (<ul style="list-style-type: none"> • possesses the skills of public speaking with the presentation of their own judgments, analysis and synthesis of information based on partnership, trusting relationships with colleagues and healthcare workers, demonstrating multiculturalism and openness in work;

<p>quality assurance at all stages of the drug life cycle.</p>	<p>TQM) as an effective way of business management;</p> <ul style="list-style-type: none"> analyzes the quality indicators of pharmaceutical products, the relationship of product quality indicators, assessing the risks for the quality of medicines, justifying the choice of quality management methods, developing standards for operating procedures and implementing organizational and technical solutions aimed at improving quality and productivity; organizes work in entities that carry out pharmaceutical activities based on the rules of good pharmaceutical practices, managing inventory based on a process approach , creating conditions for storage, transportation and quality control of medicines and medical devices, and arguing their own choice of a method and quality management tools in accordance with legal fundamentals of quality regulation. 	<ul style="list-style-type: none"> engages in professional growth by demonstrating introspection skills, experience in teaching at the higher education level, searching for information in databases, organizing information and using it in writing scientific papers, to solve specific professional problems using scientific research methods, developing ideas based on critical thinking .
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11. Literature

Main:

1. Management and economics of pharmacy [Text]: textbook / ed. I. A. Narkevich. - M.: GEOTAR - Media, 2017. - 928 p.
2. Arystanov, Zh. M. Management and economics of pharmacy textbook - Almaty: Evero, 2015
3. Management and economics of pharmacy: textbook / ed. V. L. Bagirova. - M. , 2008

Additional:

1. Collection of Legislative and regulatory legal acts regulating pharmaceutical activities in the Republic of Kazakhstan: collection / comp. B.K. Makhatov . - Shymkent: Zhasulan, 2017. - 380 p.
2. [Collection of legislative and regulatory legal acts regulating pharmaceutical activities in the Republic of Kazakhstan: collection / composition. B. K. Makhatov \[etc.\]. - Shymkent: Zhasulan, 2017. - 327 pages. S](#)
3. Arystanov, Zh. M. Organization of pharmaceutical activity: textbook. allowance. - Almaty: Evero, 2015. - 608 p.

Electronic resources:

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3. Website of the Library and Information Center of the Academy lib.ukma.kz
4. SKMA Media Library <https://media.skma.edu.kz/>
5. Digital library "Aknurpress" www.aknurpress.kz register and enter the promo code SDH-28
6. [SKMA repository http://lib.ukma.kz/repository/](http://lib.ukma.kz/repository/)

7. [Republican Interuniversity Electronic Library http://rmebrk.kz/](http://rmebrk.kz/)
8. [base of normative legal acts " Law " https://zan.kz/ru](https://zan.kz/ru)
9. Paragraph [Medicine](#)
10. Code of the Republic of Kazakhstan dated July 7, 2020 No. 360-VI "On the health of the people and the healthcare system" (with amendments and additions). Ch. 2, art. 10; ch. 5, paragraph 3; ch. 27.28; https://online.zakon.kz/document/?doc_id=34464437
11. Acting order Minister of Health of the Republic of Kazakhstan dated February 4, 2021 No. MH RK-15. "On Approval of Good Pharmaceutical Practices" <https://adilet.zan.kz/rus/docs/V2100022167#z13>
12. Order of the Minister of Health of the Republic of Kazakhstan dated February 16, 2021 No. MH RK-19 "On approval of the rules for the storage and transportation of medicines and medical devices" <https://adilet.zan.kz/rus/docs/V2100022230#z7>
13. Order of the Minister of Health of the Republic of Kazakhstan dated September 17, 2020 No. MH RK-104/2020. On approval of the Rules for the wholesale and retail sale of medicines and medical devices. <https://adilet.zan.kz/rus/docs/V2000021229#z129>

1. Department: organization and management of the pharmaceutical business

2. Level of education: scientific and pedagogical PhD programme

3. Educational programme: D140-Pharmacy

4. Course: 1

5. Name of the elective discipline: The concept of marketing research in pharmacy

6. Number of credits: 4 credits

7. Purpose: To acquire professional competencies necessary for the systematic search, collection, analysis, interpretation and presentation of results in the process of research work.

8. The content of the discipline: in order to obtain competitive advantages, participants in the pharmaceutical market need objective information and analytical materials obtained as a result of marketing research. In this regard, marketing research is necessary for the successful operation of any enterprise, since the use of their results will reduce the degree of inevitable risk, reasonably develop corporate (portfolio, growth, competitive), functional and instrumental strategies.

9. Tasks:

- to study the place of marketing research in the field of drug circulation;
- to acquire systematic knowledge of doctoral students about the methodology of marketing research;
- to teach how to carry out pharmaceutical market research;
- to acquire practical skills in determining the competitiveness of pharmaceutical organizations;
- to teach how to use information based on IT-technologies in the field of professional activity.

10. Rationale for the choice of discipline:

The development of the sphere of drug circulation in a market economy involves the use of marketing research methods to study the behavior of consumers, intermediaries, suppliers, competitors, and, in general, the entire market situation. In order to strengthen competitive advantages, pharmaceutical market participants cannot do without objective information and analytical materials obtained as a result of marketing research. In this regard, marketing research is necessary for the successful operation of any enterprise, since the use of their results will reduce the degree of inevitable risk, reasonably develop corporate (portfolio, growth, competitive), functional and instrumental strategies.

11. Learning outcomes (competencies)

Knowledge (cognitive sphere)	Skills and abilities (psychomotor sphere)	Personal and professional competencies (relationships)
demonstrates a systematic understanding of conceptual approaches to marketing research based on the International and	<ul style="list-style-type: none"> • plans marketing research of the pharmaceutical market, determining the sample size and justifying the choice of marketing research methods, 	<ul style="list-style-type: none"> • possesses the skills of public speaking with the presentation of their own judgments, analysis and synthesis of information,

<p>European Codes of Marketing Research , the importance of marketing research and information support of marketing in the field of medicines circulation.</p>	<p>developing the design of a drug consumer research based on the differentiation of the marketing environment;</p> <ul style="list-style-type: none"> • determines the market capacity of medicines and medical devices, types of segmentation based on the study of the marketing environment of the enterprise and the pharmaceutical market using modern methods of marketing analysis, arguing own conclusions, evaluating and interpreting the results of scientific research, explaining the observed facts and phenomena, their cause-and-effect relationships, presenting and publishing the results of scientific research, introducing scientific achievements in the pharmaceutical industry; • conducts a critical analysis and evaluation of marketing information, demand, competitors and competitiveness of a pharmaceutical and pharmacy enterprise, choosing methods for predicting the need for certain groups of medicines, methods for studying the range of pharmaceutical products. 	<p>building partnerships, trusting relationships with colleagues and healthcare workers, demonstrating multiculturalism and openness in work;</p> <ul style="list-style-type: none"> • engages in professional growth by demonstrating introspection skills, teaching experience at the higher education level, searching information in databases for writing research papers, developing ideas, systematizing and interpreting scientific research results based on critical thinking.
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12. Prerequisites: management and marketing in pharmaceutical companies.

13. Postrequisites: scientific research.

14. Literature

Main:

3. Arystanov, Zh. M. Management and marketing in pharmacy: study guide / Zh. M. Arystanov, A. T. Tokseitova. - Almaty: Evero, 2016. - 532 p.
4. Shertaeva, K. D. Pharmaceutical marketing: textbook / K. D. Shertaeva; Ministry of Health of the Republic of Kazakhstan; Rep. center of innovative technologies med. education; SKPhA. - Shymkent: B. i., 2012. - 152 p.

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11. Shertaeva, K. D. Pharmaceutical marketing [Electronic resource]: okulyk / K. D. Shertaeva, K. Zh. Mamytbaeva; MHS of RK. OKMPhA. - Electron. text data. - Shymkent, 2016. - el. opt. disk (CD-ROM) (1.17Mb).
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17. [Republican Interuniversity Electronic Library http://rmebrk.kz/](http://rmebrk.kz/)
18. [base of normative legal acts " Law " https://zan.kz/ru](https://zan.kz/ru)
19. Paragraph [Medicinehttps://online.zakon.kz/Medicine/](https://online.zakon.kz/Medicine/)
20. Code of the Republic of Kazakhstan dated July 7, 2020 No. 360-VI "On the health of the people and the healthcare system" (with amendments and additions). Ch. 2, art. 10; ch. 5, paragraph 3; ch. 27.28; https://online.zakon.kz/document/?doc_id=34464437

1. Department: organization and management of pharmaceutical business

2. Level of education: scientific and pedagogical PhD programme

3. Educational programme: D 140-Pharmacy

4. Course: 1

5. Name of the elective discipline: Management bases of good practices in pharmacy

6. Number of credits: 3 credits

7. Purpose: Formation of professional and communication competencies for the application of the basic principles, categories, methods and tools of quality management in modern pharmaceutical organizations in the market.

8. The content of the discipline: a good practice management system is designed to ensure the proper quality of medicines through strict adherence to standards at every stage of their life cycle. The rules of Good Pharmaceutical Practices are based on the process approach, which includes: classification of processes; determination of the sequence, interconnection, interaction of processes; definition of criteria and methods for evaluating the functioning of processes; description of processes; process analysis and improvement

9. Tasks:

- to form systemic knowledge on the development of documentation for the organization's quality management system in accordance with the requirements of ISO 9000 standards when building a system and preparing an enterprise for certification;
- to acquire skills in applying international standards in the process of creating and certifying a quality management system at a pharmaceutical enterprise;
- to study the methodology for creating quality management systems in pharmaceutical enterprises;
- to acquire systemic knowledge on audit and certification issues based on the requirements of the current legislation in the field of quality;
- to teach how to apply quality management methods in the process of performing technological operations;
- to teach how to use information based on IT technologies in the field of professional activity.

10. Rationale for the choice of discipline:

Currently, the implementation of quality systems based on international GxP standards in pharmacy is becoming an urgent need. It should be noted that without ensuring a stable quality that meets the requirements of consumers, it is impossible to rationally integrate the national economy into the world economy and take a worthy place in it.

A modern pharmaceutical organization must create an effective management system that will contribute to the quality implementation of all processes, which in turn will ensure the achievement of a quality result. Thus, quality management is aimed not only at the sphere of quality management in the organization, it covers the entire management system of the company, based on a systematic approach to managing all types of activities. In this regard, the study of the discipline "Organizational Foundations of Good Practices in Pharmacy (GxP)" takes on special significance.

11. Learning outcomes (competencies)

Knowledge (cognitive sphere)	Skills and abilities (psychomotor sphere)	Personal and professional competencies (relationships)
<ul style="list-style-type: none"> of the main provisions of the modern concept of quality management, the mechanism of classical and modern methods and tools of quality management, the relationship between the concepts of Good Pharmaceutical Practices (GxP) and their role in quality assurance at all stages of the drug life cycle. 	<ul style="list-style-type: none"> manages quality at pharmaceutical production enterprises, in pharmacy organizations, integrating quality management with scientific management schools, quality management strategy into the overall strategic management system of the enterprise, applying the concept of Total Quality Management (TQM) as an effective way of business management; analyzes the quality indicators of pharmaceutical products, the relationship of product quality indicators, assessing the risks for the quality of medicines, justifying the choice of quality management methods, developing standards for operating procedures and implementing organizational and technical solutions aimed at improving quality and productivity; organizes work in entities that carry out pharmaceutical activities based on the rules of good pharmaceutical practices, managing inventory based on a process approach , creating conditions for storage, transportation and quality control of medicines and medical devices, and arguing their own choice of a method and quality management tools in accordance with legal fundamentals of quality regulation. 	<ul style="list-style-type: none"> possesses the skills of public speaking with the presentation of their own judgments, analysis and synthesis of information based on partnership, trusting relationships with colleagues and healthcare workers, demonstrating multiculturalism and openness in work; engages in professional growth by demonstrating introspection skills, experience in teaching at the higher education level, searching for information in databases, organizing information and using it in writing scientific papers, to solve specific professional problems using scientific research methods, developing ideas based on critical thinking .

12. Prerequisites: the concept of marketing research in pharmacy.

13. Postrequisites: professional life.

14. Literature

Main:

- Management and economics of pharmacy [Text]: textbook / ed. I. A. Narkevich. - M.: GEOTAR - Media, 2017. - 928 p.
- Arystanov, Zh. M. Management and economics of pharmacy textbook - Almaty: Evero, 2015
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6. Arystanov, Zh. M. Organization of pharmaceutical activity: textbook. allowance. - Almaty: Evero, 2015. - 608 p.

Electronic resources:

14. EMCD is posted on the educational portal ukma . kz
15. Electronic library "Student's consultant". Access link: <http://www.studmedlib.ru> , LOGIN ibragim123, PASSWORD Libukma123
16. Website of the Library and Information Center of the Academy lib.ukma.kz
17. SKMA Media Library <https://media.skma.edu.kz/>
18. Digital library "Aknurpress" www.aknurpress.kz register and enter the promo code SDH-28
19. [SKMA repository http://lib.ukma.kz/repository/](http://lib.ukma.kz/repository/)
20. [Republican Interuniversity Electronic Library http://rmebrk.kz/](http://rmebrk.kz/)
21. [base of normative legal acts " Law " https://zan.kz/ru](https://zan.kz/ru)
22. Paragraph [Medicine](#)
23. Code of the Republic of Kazakhstan dated July 7, 2020 No. 360-VI "On the health of the people and the healthcare system" (with amendments and additions). Ch. 2, art. 10; ch. 5, paragraph 3; ch. 27.28; https://online.zakon.kz/document/?doc_id=34464437
24. Acting order Minister of Health of the Republic of Kazakhstan dated February 4, 2021 No. MH RK-15. "On Approval of Good Pharmaceutical Practices" <https://adilet.zan.kz/rus/docs/V2100022167#z13>
25. Order of the Minister of Health of the Republic of Kazakhstan dated February 16, 2021 No. MH RK-19 "On approval of the rules for the storage and transportation of medicines and medical devices" <https://adilet.zan.kz/rus/docs/V2100022230#z7>
26. Order of the Minister of Health of the Republic of Kazakhstan dated September 17, 2020 No. MH RK-104/2020. On approval of the Rules for the wholesale and retail sale of medicines and medical devices. <https://adilet.zan.kz/rus/docs/V2000021229#z129>

1. **Department of Pharmacognosy**

2. **Level of training:** scientific and pedagogical doctorate

3. **Specialty:** 8D110400 «Pharmacy»

4. **Year of study:** 1

5. **The name of the elective discipline:** "Good practice of cultivation and collection (GACP) of medicinal plants"

6. **Number of credits:** 3

7. **Objectives:** to familiarize doctoral students with topical issues of physico-chemical and morphological-anatomical methods, organization of procurement of medicinal plant raw materials, chemical composition and classification of medicinal plants, the basics of rational nature management, methods of procurement process of medicinal plant raw materials and its standardization, as well as with the main directions of scientific research in the field of medicinal plants.

8. **Tasks:**

- formation of competencies for conducting experimental research and processing the results obtained;
- to teach students to independently interpret the results of morphological, anatomical and phytochemical studies of MPM;
- to master the methods of morphological and anatomical analysis, modern physico-chemical methods used in the standardization of MPM, animal and mineral products;
- development of methods for the determination of biologically active substances in the MPM.

9. **Justification of the choice of discipline:**

The main purpose of studying the discipline "Modern physico-chemical and morphological-anatomical methods used in the standardization of medicinal plant raw materials" is the formation of doctoral students' professional competencies in the field of determining the authenticity, purity and goodness of medicinal plant raw materials (MPM). The main objects of study of this discipline are medicinal plants and medicinal plant raw materials, products of animal and mineral origin, as well as objects of dissertation research of doctoral students studying under the educational program Pharmaceutical Chemistry, pharmacognosy.

10. Learning outcomes (competencies):

Knowledge (cognitive sphere)	Skills and abilities (psychomotor sphere)	Personal and professional competence (relationships)
<p>-Demonstrates knowledge of the basic concepts of the peculiarities of phytochemical analysis of medicinal raw materials of plant and animal origin of the subject and its significance for the practical activities of a pharmacy specialist. It knows how to determine humidity, ash content, characteristic numerical indicators of medicinal plant raw materials (in fats — acid number, iodine number, etc.).</p> <p>-Demonstrates knowledge of the legislation of the Republic of Kazakhstan in the field of healthcare, international standards, their structure and other regulatory and technical documentation regulating quality, procurement rules, acceptance, requirements for the terms and conditions of storage of medicinal plant raw materials, the basics of the legal system of Kazakhstan, etc.</p> <p>-Knows the general concept of work safety in chemical testing laboratories, standardization, standards, laws used in standardization, medicinal plants, medicinal plant raw materials. Knows how to conduct phytochemical analysis of medicinal raw materials of plant and animal origin. Knows how to form the skills and abilities necessary for the implementation of the professional activity of a doctoral student.</p>	<p>- Complies with environmental measures when collecting medicinal plant raw materials. Carries out the acceptance of LRS and selection for analysis in accordance with the NTD, carry out static processing and registration of the results of commodity analysis.</p> <p>- Determines the quality, carries out the procurement of LRS in accordance with the fundamentals of the legal system and legislation of Kazakhstan in the field of healthcare, international standards, and other regulatory and technical documentation.</p> <p>- Demonstrates knowledge of the legislation of the Republic of Kazakhstan in the field of healthcare, international standards, their structure and other regulatory and technical documentation regulating quality, procurement rules, acceptance, requirements for the terms and conditions of storage of medicinal plant raw materials, the basics of the legal system of Kazakhstan, etc.</p> <p>-Demonstrates knowledge of the basic necessary scientific, educational and professional literature for a future specialist, suitable for working with medicinal plants used in phytotherapy.</p> <p>-Solves situational tasks, adhering to the legislation of</p>	<p>- Demonstrates knowledge of the legislation of the Republic of Kazakhstan in the field of healthcare, international standards, their structure and other regulatory and technical documentation regulating quality, procurement rules, acceptance, requirements for the terms and conditions of storage of medicinal plant raw materials, the basics of the legal system of Kazakhstan, etc.</p> <p>- Searches and processes information about medicinal plant raw materials for consulting doctors, pharmacists, the public on their procurement, use and storage;</p> <p>- Transfers to students their own knowledge and skills in working with information (educational, reference, scientific)</p> <p>- to conduct a comparative analysis of medicinal plants and their use in medicine;</p> <p>- - conduct a comparative analysis on poisonous plants used by the people as a medicinal product</p>

	<p>the Republic of Kazakhstan in the field of healthcare, international standards, their structure and other regulatory and technical documentation regulating quality, procurement rules, acceptance, requirements for the terms and conditions of storage of medicinal plant raw materials, the basics of the legal system of Kazakhstan, etc.</p>	
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10. Литература:

Основная

1. Самылина, И. А. Фармакогнозия. Атлас. В 3 т. Т. 1. Общая часть. Термины и техника микроскопического анализа в фармакогнозии [Текст] : учеб. пособие / И. А. Самылина, О. Г. Аносова. - ; Рек. УМО по мед. и фарм. образованию вузов России. - М. : ГЭОТАР - Медиа, 2010. - 192 с. : ил.
2. Самылина, И. А. Фармакогнозия. Атлас. В 3 т. Т. 2. Лекарственное растительное сырье. Анатомо-диагностические признаки фармакопейного и нефармакопейного лекарственного растительного сырья [Текст] : учеб. пособие / И. А. Самылина, О. Г. Аносова. - ; Рек. УМО по мед. и фарм. образованию вузов России. - М. : ГЭОТАР - Медиа, 2010. - 384 с. : ил
3. Самылина, И. А. Фармакогнозия. Атлас. В 3 т. Т. 2. Лекарственное растительное сырье. Анатомо-диагностические признаки фармакопейного и нефармакопейного лекарственного растительного сырья [Текст] : учеб. пособие / И. А. Самылина, О. Г. Аносова. - ; Рек. УМО по мед. и фарм. образованию вузов России. - М. : ГЭОТАР - Медиа, 2010. - 384 с. : ил
4. Самылина, И. А. Атлас лекарственных растений и сырья [Текст] : учеб. пособие по фармакогнозии / И. А. Самылина, А. А. Сорокина. - М. : Авторская Академия : Товарищество науч. изд. КМК, 2008. - 318 с
5. Машковский, М. Д. Лекарственные средства [Текст] : пособие для врачей / М. Д. Машковский. - 16-е изд., перераб. и доп. - М. : Новая волна, 2012. - 1216 с

Дополнительные:

1. Қазақстан Республикасының мемлекеттік фармакопеясы. Т. 1 [Мәтін] : монография / ред. А.О. Төлегенова ; ҚР денсаулық сақтау министрлігі. - 1-ші бас. - Алматы : Жібекжолы, 2008. - 592 бет. с
2. Қазақстан Республикасының мемлекеттік фармакопеясы. 2 т. [Мәтін] : монография / ҚР Республикасының денсаулық сақтау министрлігі ; ред. А.О. Төлегенова. - 1-ші бас. - Алматы : Жібекжолы, 2009. - 792 бет с
3. Қазақстан Республикасының мемлекеттік фармакопеясы. Т. 3 [Мәтін] : монография / ҚР денсаулық сақтау министрлігі. - 1-бас. ; ҚР Денсаулық сақтау министрінің бұйрығымен бекіт. - Алматы : Жібек жолы, 2014. - 864 бет. с
4. Государственная фармакопея Республики Казахстан. Т. 1 [Текст] : монография / ред. А. У. Тулегенова; М-во здравоохранения РК. - 1-е изд. - Алматы : Жибекжолы, 2008. - 592 с
5. Государственная фармакопея Республики Казахстан. Т. 2 [Текст] : монография / под ред. А. У. Тулегеновой ; М-во здравоохранения РК. - 1-е изд. - Алматы : Жибекжолы, 2009. - 804 с
6. Государственная фармакопея Республики Казахстан. Т. 3 [Текст] : монография / М-во здравоохранения РК. - 3-е изд. ; Утв. приказом М-ва здравоохранения РК. - Алматы : Изд. дом "Жибекжолы", 2014. - 872 с
7. Государственная Фармакопея СССР. Вып. 1. Общие методы анализа [Текст] : учебник / М-во здравоохранения СССР. - 11-е изд., доп. - М. : Медицина, 1987. - 336 с. : ил

8. Государственная Фармакопея СССР. Вып. 2. Общие методы анализа. Лекарственное растительное сырье [Текст] : учебник / М-во здравоохранения СССР. - 11-е изд., доп. - М. : Медицина, 1989. - 400 с. : ил
9. Лекарственные растения, растительное сырье и некоторые продукты переработки сырья животного происхождения. Ч. 1. Лекарственные растения и лекарственное растительное сырье содержащие углеводы, жиры и жироподобные вещества, витамины, терпеноиды [Текст] : учеб.-методическое пособие по фармакогнозии / Д. М. Джангозина [др.]. - 2-е изд., доп. - Алматы : Эверо, 2014. - 208 с
10. Лекарственные растения, лекарственное растительное сырье и некоторые продукты переработки сырья животного происхождения. Ч. 2. Лекарственные растения и лекарственное растительное сырье, содержащие сердечные гликозиды, сапонины, алколоиды [Текст] : учеб. - методическое пособие по фармакогнозии / Д. М. Джангозина [и др.]. - 2-е изд., доп. - Алматы : Эверо, 2014. - 194 с

Электронные:

1. Фармакогнозия. Гербарий лекарственных растений [Электронный ресурс] : учеб. пособие / И. А. Самылина [и др.]. - Электрон. текстовые дан. (40,5 Мб). - М. : ГЭОТАР - Медиа, 2012. - эл. опт. диск (CD-ROM). - (Электронное изд.)
2. Самылина, И. А. Фармакогнозия. Атлас. В 3 т. Т. 2. Лекарственное растительное сырье. Анатомо-диагностические признаки фармакопейного и нефармакопейного лекарственного растительного сырья [Текст] : учеб. пособие / И. А. Самылина, О. Г. Аносова. - ; Рек. УМО по мед. и фарм. образованию вузов России. - М. : ГЭОТАР - Медиа, 2010. - 384 с. : ил
3. Самылина, И. А. Фармакогнозия. Атлас. В 3 т. Т. 2 [Электронный ресурс] : учебник / И. А. Самылина, О. Г. Аносова. - Электрон. текстовые дан. (101 Мб). - М. : Изд. группа "ГЭОТАР-Медиа", 2012. - эл. опт. диск (CD-ROM). - (Электронный учебник)
4. Самылина, И. А. Фармакогнозия. Атлас. В 3 т. Т. 3. [Электронный ресурс] : учебник / И. А. Самылина, О. Г. Аносова. - Электрон. текстовые дан. (142 Мб). - М. : Изд. группа "ГЭОТАР-Медиа", 2012. - эл. опт. диск (CD-ROM). - (Электронный учебник)
5. Фармакогнозия. Атлас: учебное пособие: в 3-х томах. - М. : ГЭОТАР-Медиа, 2010. - Т. 1. - 192 с. :ил. ЭБС/<http://www.studmedlib.ru/>

Catalog of elective disciplines for the 2023-2024 academic year

1. **The Department:** Biology and Biochemistry
2. **Program:** Doctorate
3. **Specialty:** Medicine
4. **Year:** 1
5. **Name of the elective disciplines:** Modern methods and principles of scientific research
6. **Number of academic credits:** 4
7. **Goal:**
 - development of doctoral students' knowledge and skills of independent planning, conducting and evaluating the results of scientific research.
 - clearly and clearly apply the acquired communication skills for the implementation of the dissertation research (substantiation of the topic of the dissertation, its design, publication, dissemination of research results) with specialists and non-specialists;
 - knowledge of the methods and means used in scientific research can significantly facilitate the scientific training of a doctoral student, initiate his ability for further independent continuation of education.
8. **Objectives:**
 - To give doctoral students stable ideas, knowledge, skills and abilities in the disciplines that determine the direction (profile) of training doctoral students;
 - To study the real place of the disciplines that determine the direction (profile) of doctoral students'

training in the modern practice of making managerial and clinical decisions, as well as in the process of implementing research and practical programs;

- To give doctoral students an understanding of the possibilities of using the tools of disciplines that determine the direction (profile) of doctoral students' training, in solving complex interdisciplinary, inter-sectoral problems in the field of professional activity;
- To provide doctoral students with fundamental knowledge at the intersection of sciences, guaranteeing them professional mobility in the real developing world.

9. Justification of the choice of discipline:

- Solve research problems, relying on the principles of civilized, culturological and informational approaches to the analysis of the studied processes;
- Set goals and formulate tasks related to the implementation of professional functions.
- Make management decisions in the framework of their professional activities based on the principles of evidence-based medicine;
- Possess the principles and modern methods of operations management in various fields of activity;
- Forecast the results of your professional activity; control the work process and objectively evaluate its results;
- Solve complex interdisciplinary, intersectoral problems in the field of professional activity.

10. Learning outcomes (competencies)

№	Knowledge (cognitive sphere)	Skills and skills (psychomotor sphere)	Personal and professional competencies (relationships)
	<p>Fundamentals of national and international law in the field of scientific research: QPBR, GLP, GLP, GCLP, etc.</p> <p>Scientific research in medicine.</p> <p>Scientific and research programs by funding sources.</p> <p>Search and attraction of grants.</p> <p>Key components and stages of scientific research.</p> <p>Classification of research in public health.</p> <p>Qualitative Research in Public Health.</p> <p>Panel studies and trend studies in public health.</p> <p>The reasons for the unreliability of the research results: systematic and random errors. Unfair research practice.</p>	<p>Science is focused on understanding the essence of objects and processes.</p> <p>Science operates with specific methods and forms, research tools.</p> <p>Scientific knowledge is characterized by planning, consistency, logical organization, and the validity of research results. Science has specific ways to substantiate the truth of knowledge.</p> <p>Scientific research in medicine, as in the field of other sciences, can only be carried out by people who are honest and principled, truly devoted to the cause they serve. Such an act of a scientific supervisor is also immoral when he agrees or insists on the fact that in a scientific publication (monograph, article, abstracts, reports, etc.), in the part where the name of the true author of the scientific work appears, the names of false co-authors are put next there are individuals who did not participate in the scientific research.</p> <p>Industry and business often participate in government funding for research projects.</p> <p>Also, the municipality is a significant structure in the financing of scientific research, participating openly in financing regional development projects.</p>	<p>Able to present their own judgments and critically analyze the results of educational experiments.</p> <p>Able to defend their own judgments in practical exercises, at meetings of the student circle, student scientific conferences, etc.</p> <p>When planning and conducting training experiments, he is able to explain the observed facts and phenomena, their causal relationships.</p> <p>Able to work in a team, to make a collective decision.</p> <p>Able to transfer to students, teachers, examiners the knowledge gained in the process of</p>

<p>Recommendations for writing an article. Critical analysis of scientific articles in biomedicine.</p>	<p>These Rules for the submission of applications for attraction of related grants determine the procedure for submission of applications for attraction of related grants by central state bodies, taking into account applications from local representative and executive bodies to the central authorized body for state planning. Choosing a research topic. Definition of the object and subject of research. Defining goals and objectives. Wording of the title of the work. Development of a hypothesis. Drawing up a research plan. Working with literature. Selection of research methods. The organization of the conditions of the study. Conducting research (collecting material). Processing of research results. The formulation of conclusions. The design of the work. Cross-sectional studies. Cohort studies. Case-control studies. Experimental research. Environmental (correlation) studies. Qualitative research in medicine. Panel studies and trend studies in medicine. Systematic review and meta-analysis. Definition, scope, types of cohort study. Definition, types of systematic errors, types of random errors, their impact on the result, ways to minimize errors. The main criteria for writing a scientific article, work plan, structure, recommendations for the presentation of the material, the choice of a scientific journal. Work with research checklists of various designs in biomedicine.</p>	<p>studying the discipline.</p>
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11. Prerequisites:

12. Post requisites:

13.Literature:

- Койков, В. В. Надлежащая практика научных исследований: Избранные вопросы методологии биомедицинских исследований и исследований в медицинском образовании : исследование / В. В. Койков, Г. А. Дербисалина. - Караганда : АҚНҰР, 2014. - 140 с.
- Спандияров, Е. Основы научных исследований и инновации : практическое пособие / Е. Спандияров ; М-во образования и науки РК. - Алматы : Эверо, 2013. - 136 с.
- Принципы планирования и проведения исследований в сестринском деле : учебное пособие / Г. А. Дербисалина - Караганда : АҚНҰР, 2020.
- Мейіргер ісіндегі зерттеулерді жоспарлау және жүргізу принциптері : оқу құралы / Г. Ә. Дербисалина - Қарағанды : АҚНҰР, 2020. - 150 б.
- А.С. Кадыров, И.А. Кадырова, Ж.Ж.Жунусбекова Ғылыми зерттеулер негіздері:оқу құралы. "АҚНҰР" 2017 (ЭБ)

8. Department of Pharmacognosy

9. Level of training: scientific and pedagogical doctorate

10. **Specialty:** 8D10140 «Pharmacy»

11. **Year of study:** 1

12. **The name of the elective discipline:** "Good practice of cultivation and collection (GACP) of medicinal plants"

13. **Number of credits:** 3

14. **Goals:**

to promote the development of ideas about the conditions of plant growth, different types of environmental factors, the principles of the allocation of ecological groups of plants and the ability of plants to form community regimes, the development of plant assessment skills in relation to growing conditions.

8. **Tasks:**

- formation of doctoral students' mastery of environmental research skills and their application in practice, development.
- introduction of resource-saving and low-waste technologies;
- replacement of scarce natural resources with alternative and use of secondary raw materials;
- to develop a methodological approach and a system of indicators for assessing the quality of the natural environment;
- the ability to develop and apply technologies for rational use of natural resources and environmental protection, to forecast man-made impacts, to know the regulatory legal acts regulating the legal relations of resource use in nature conservation and to be able to apply them in practice.

9. **Justification of the choice of discipline:**

In recent years, many works have appeared on the human impact on the environment. More and more often they began to write about the conflict of man with nature, about the violation of the ecological balance in nature by man, and even about the onset of a global ecological catastrophe in the near future. Many Western scientists believe that the ecological crisis is a direct consequence of the ever-increasing growth of the national population and the strengthening of human industrial activity in the era of the technological revolution. In our country, the restoration of forests is carried out not only by forestry, but also by public organizations.

10. **Learning outcomes (competencies):**

Knowledge (cognitive sphere)	Skills and abilities (psychomotor sphere)	Personal and professional competence (relationships)
<p>-Demonstrates the knowledge to investigate the importance of the ecological component in ensuring the sustainable development of socio-ecological and economic systems and the quality of the medicinal plant environment. To reveal the system of ecological and economic interests of preserving the systemic integrity of the medicinal plant environment.</p> <p>-Demonstrates knowledge of the technique and technology of computer collection, cultivation, storage and processing of information used for professional activities in the field of standardization.</p> <p>-Knows the general concept of work safety in chemical testing laboratories, standardization,</p>	<p>-Observes an environmental measure when collecting medicinal plant raw materials.</p> <p>-Carries out the acceptance of LRS and selection for analysis in accordance with the NTD, carry out static processing and registration of the results of commodity analysis.</p> <p>-Determines the quality, carries out the procurement of LRS in accordance with the fundamentals of the legal system and legislation of Kazakhstan in the field of healthcare, international standards, and other regulatory and technical documentation.</p>	<p>- Knows the environmental aspects of obtaining toxic substances from the LRS, numerical indicators that regulate the quality of the LRS, and their methods of determination, improvement of existing methods of analysis, development of business plans, the main directions of scientific research in the field of LR.</p> <p>-Solves situational tasks, adhering to the legislation of the Republic of Kazakhstan in the field of healthcare, international standards, their structure and other regulatory and technical documentation regulating quality, procurement rules,</p>

<p>standards, laws used in standardization, medicinal plants, medicinal plant raw materials.</p> <p>-Knows the phytochemical analysis of medicinal raw materials of plant and animal origin. Knows how to form the skills and abilities necessary for the implementation of the professional activity of a doctoral student.</p>	<p>-Demonstrates knowledge of the legislation of the Republic of Kazakhstan in the field of healthcare, international standards, their structure and other regulatory and technical documentation regulating quality, procurement rules, acceptance, requirements for the terms and conditions of storage of medicinal plant raw materials, the basics of the legal system of Kazakhstan, etc.</p> <p>-Demonstrates knowledge of the basic necessary scientific, educational and professional literature for a future specialist, suitable for working with medicinal plants used in phytotherapy.</p>	<p>acceptance, requirements for the terms and conditions of storage of medicinal plant raw materials, the basics of the legal system of Kazakhstan, etc.</p>
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11. Литература:

Основная

5. Самылина, И. А. Фармакогнозия. Атлас. В 3 т. Т. 1. Общая часть. Термины и техника микроскопического анализа в фармакогнозии [Текст] : учеб. пособие / И. А. Самылина, О. Г. Аносова. - ; Рек. УМО по мед. и фарм. образованию вузов России. - М. : ГЭОТАР - Медиа, 2010. - 192 с. : ил.
6. Самылина, И. А. Фармакогнозия. Атлас. В 3 т. Т. 2. Лекарственное растительное сырье. Анатомо-диагностические признаки фармакопейного и нефармакопейного лекарственного растительного сырья [Текст] : учеб. пособие / И. А. Самылина, О. Г. Аносова. - ; Рек. УМО по мед. и фарм. образованию вузов России. - М. : ГЭОТАР - Медиа, 2010. - 384 с. : ил
7. Самылина, И. А. Фармакогнозия. Атлас. В 3 т. Т. 2. Лекарственное растительное сырье. Анатомо-диагностические признаки фармакопейного и нефармакопейного лекарственного растительного сырья [Текст] : учеб. пособие / И. А. Самылина, О. Г. Аносова. - ; Рек. УМО по мед. и фарм. образованию вузов России. - М. : ГЭОТАР - Медиа, 2010. - 384 с. : ил
8. Самылина, И. А. Атлас лекарственных растений и сырья [Текст] : учеб. пособие по фармакогнозии / И. А. Самылина, А. А. Сорокина. - М. : Авторская Академия : Товарищество науч. изд. КМК, 2008. - 318 с

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