

Catalog of elective subjects

1. Department of Pharmacology, Pharmacotherapy and Clinical Pharmacology
2. Level of training: Master's degree
3. Educational program: "**Pharmacy**", **specialized direction**
4. Course: 1
5. Name of the elective discipline: **Clinical and pharmacological characteristics of individual groups and drugs and the formula system.**
6. Number of credits: 10
7. Objective: To develop skills in therapy taking into account the clinical and economic effectiveness of medicines in specific clinical situations, taking into account polymorbidity in accordance with the main protocols and orders of the Ministry of Health of the Republic of Kazakhstan, the basics of the formulary system for the rational use of medicines.
8. Content of the discipline: Principles of pharmacotherapy of certain diseases. Rational choice of medicines, taking into account their effectiveness and safety. Rules for providing medicines to medical organizations. The formula system. Development of a drug form. Need analysis.
9. Tasks:
 - teach them to evaluate the prescription of medicines, taking into account the clinical and pharmacological characteristics and individual characteristics of the patient;
 - teach you how to make the optimal choice and replacement of a drug, if necessary, in order to improve the rationality of pharmacotherapy.
10. Justification of the choice of discipline: Development of the clinical pharmacy service. The need for in-depth training on the rational use of medicines, the development of drug formulae in medical organizations.
11. Learning outcomes:

LO1	Demonstrates knowledge and skills of rational use of medicines of certain groups (pharmacokinetic, pharmacodynamic parameters, indications and contraindications for use, undesirable drug reactions, dosage regimen, application features depending on the condition and age of the patient).
LO2	is able to effectively interact with all stakeholders on the rational use of medicines and on the development of a drug form (patients, doctors, specialists of the laboratory service, epidemiology service, public health, regulatory authorities, etc.), providing advice, expert function, organizational activities
LO3	able to assess risks and use the most effective medicines in accordance with the requirements of the Legislation of the Russian Federation. with evidence-based practice to ensure a high level of safety and quality of medical care
LO4	RO4 is able to act within the legal and organizational framework of the healthcare system of the Republic of Kazakhstan in the development, approval and promotion of the drug form
LO5	is able to analyze the consumption of medicines, analyze the effectiveness and safety of pharmacotherapy, propose and make decisions on drug provision, promotion of new technologies in the pharmaceutical industry therapy sessions.
LO6	is able to learn independently and train other members of the professional team, actively participate in discussions, conferences and other forms of continuous professional development.

12. Prerequisites: none

13. Post-requirements: professional development.

14. Literature:

1. Kalieva Sh. S. Clinical pharmacology and rational pharmacotherapy. Volume 1: textbook / Sh. S. Kalieva, N. A. Minakova . . Almaty : Evero Publ., 2016, 460 p.
2. Kalieva, Sh. S. Clinical pharmacology and rational pharmacotherapy. Volume 2: textbook / Sh. S. Kalieva, N. A. Simokhina. Almaty: Evero Publ., 2016, 288 p.
3. Құлмағамбетов И. Р. Клиникалық фармакология. 1-бөлім : оқу құралы / И. Р. Құлмағамбетов. - Almaty : New book, 2022. - 320 bet. s. (Code 615.03 / К 74-913249).
4. Құлмағамбетов И. Р. Клиникалық фармакология. 2-бөлім : оқу құралы / И. Р. Құлмағамбетов. - Almaty : New book, 2022. - 376 bet. p. (Code 615.03 / К 74-858117)
5. Рахимов, Қ. Д. Клиникалық фармакология: оқу құралы. - Almaty: ЖШС "Zhaniya-Polygraph Housing and Communal Services, 2013. - 406 bet. s
6. Ormanov, N. J. Pharmacotherapy of diseases of the digestive system [Text]: N. J. Ormanov, T. N. Ormanov, G. ZhСадырханова. Sadyrkhanova; Textbook approved by CMS SKSFA. - Shymkent: SKGFA, 2013. - 200 p.
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8. Кардиологиялық фармакотерапия [Мәтін] : оқулық / Н. Ж. Орманов [ж/б] ; ҚР денсаулық сақтау және әлеуметтік даму министрлігі. ОҚМФА. - Shymkent : ОКМФА, 2015. - 216 bet s
9. Орманов , Н. Ж. Ревматологиялық фармакотерапия [Мәтін] : оқу құралы / Н. Ж. Орманов . - Almaty: ESPI, 2021. - 180 bet.
10. Rational pharmacotherapy in oncology [Text]: ruk. for practicing doctors / ed. by M. I. Davydov, V. A. Gorbunov, Moscow: GEOTAR-Media, 2015, 844 p. (Series of manuals for practicing doctors).
11. Kliniko-farmak. approaches to perioperative antithrombotic therapy Dyusembayeva N. K., 2016 <https://www.aknurpress.kz/reader/web/1560>

Ағылшын тілінде

1. Katzung , Bertram G. Basic and Clinical Pharmacology [Text] : textbook / Katzung Bertram G. - 14 nd ed. - [S. l.] : McGrawHilleducation, 2018.-1250 p.
2. Goodman end Gilman's A. The Pharmacological Basis of Therapeutics [Text]: textbook/ Goodman & Gilman's A.; editor L. L. Brunton . - 13 nd ed. - New York: McGraw-Hill Education, 2018.-1419 p.

Қосымша әдебиеттер

1. Pharmacology: nuskaulyk = Pharmacology : manual / G.. M.. Pichkhadze [Т.В.]. - М.: "Litterra", 2017. - 640 bet
2. Mashkovsky M. D. Medicinal products. 16. - building. pererab., add. iispr. M. Novayavolna. 2017. - 1216c.
3. Микробқа қарсы дәрілердің фармакологиясы: оқу құралы / Т. А. Муминов [ж/б.]; қаз. тіл. ауд. Н. М. Малдыбаева. - Almaty: Letter Print. Kazakhstan, 2016. - 552 bet. p..
4. Pharmacology of antimicrobial agents: textbook. posobie / Т. А. Muminov. - Almaty: Letter Print. Kazakhstan, 2016. - 784s.
5. Zhaugasheva, S. K. Pharmacological glossary/ S. K. Zhaugasheva, N. T. Dildabekova, Rashid. Sajid = Pharmacologiyalyk glossary / sozdik = PHARMACOLOGIC GLOSSARY: sovar. - 2nd ed.; Approved by I rec. to the ed. Academic Council of KSMU. - Almaty: Evero, 2013. - 132 p.
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Electronic publications:

1. Petrov, V. I. Clinical pharmacology and pharmacotherapy in real medical practice master class [Electronic resource]: textbook / V. I. Petrov. - Electron. tekstovye dan. (63,5 MB). - M.: Publishing group "GEOTAR-Media", 2011. - 880 p. e. opt. disk (CD-ROM).
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4. Kalieva Sh. S., Minakova N. A. Clinical pharmacology and rational pharmacotherapy. Volume 1-Textbook. – Эверо, 2020. https://www.elib.kz/ru/search/read_book/835/.
5. Kalieva Sh. S., Simokhina N. A. Clinical pharmacology and rational pharmacotherapy volume 2 / Kalieva Sh. S., Simokhina N. A., 2020. - 289 p. <https://www.elib.kz/ru>
6. Kalieva Sh. S. Clinical pharmacology and rational pharmacotherapy in gastroenterology / Kalieva Sh. S., 2020. - 401 p. <https://www.elib.kz/ru>

1. Department of Pharmacology, Pharmacotherapy and Clinical Pharmacology

2. Level of training: Master's degree

3. Educational program: "Pharmacy", specialized direction

4. Course: 1

5. Name of the elective discipline: Assessment of the use of medicines and clinical and pharmacological expertise

6. Number of credits: 5

7. Objective: To develop skills in assessing the rational use of medicines and medicines based on the Order of the Minister of Health of the Republic of Kazakhstan dated November 3, 2020 No. KR DSM-179/2020. On approval of the rules for evaluating the rational use of medicines

8. Content of the discipline: Concepts of clinical and economic expertise. Economic assessment of the quality of medical care. Methodology of evidence-based medicine in evaluating the effectiveness and safety of medical technologies. Quality management of medical care and the role of clinical and economic analysis. Methods of pharmacoeconomic analysis VEN-ABC analysis, "disease cost" analysis, cost minimization, "cost-effectiveness" analysis. Assessment of the quality of life in clinical and economic expertise. Polypragmasy. Monitoring the effectiveness of pharmacotherapy.

9. Tasks:

- teach the skills of evaluating the rational use of medicines and conducting a pharmacological examination of pharmacotherapy.
- Develop skills in assessing the rational use of medicines based on the methodological recommendations of the National Center for Health Care

10. Justification for the choice of the discipline: Functioning of the pharmacovigilance system in medical and pharmaceutical organizations based on the decree of the Acting Minister of Health of the Republic of Kazakhstan dated February 4, 2021 No. KR DSM-15 On approval of good pharmaceutical practices.

11. Learning outcomes:

LO1	Demonstrates basic knowledge in the field of conducting clinical and economic research on effective and safe pharmacotherapy
LO2	Searches for ways to conduct and use the results of Clinical and economic research
LO3	is able to monitor the implementation of effective and safe pharmacotherapy
LO4	able to offer an assessment of the quality of medical care in the field of drug supply to medical organizations
LO5	Effectively interacts in an interprofessional group on monitoring effective and safe pharmacotherapy and safe pharmacotherapy, quality of life assessment on training in an area that learns the training skills necessary for further

LO6	Independently increases the level of competence in the field of drug use analysis, clinical and economic research to ensure the quality of medical care in the field of drug provision and drug use
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12. Prerequisites: Clinical and pharmacological characteristics of individual groups and drugs and the formula system.

13. Post-requirements: professional development.

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Additional literature

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1. Department of Pharmacology, Pharmacotherapy and Clinical Pharmacology**2. Level of training: Master's degree****3. Educational program: "Pharmacy", specialized direction****4. Course: 1****5. Name of elective discipline: Personalized pharmacotherapy****6. Number of credits: 5**

7. Objective: To conduct effective pharmacotherapy of various diseases, prevent side effects, taking into account the optimization and individuality of prevention and treatment by determining the individual properties of the body

8. Content of the discipline: Introduction to personalized pharmacotherapy. Individual factors influencing the pharmacological response. The human genome. Research in the field of pharmacogenetics and pharmacogenomics. OMICS technologies. Pharmacogenetic aspects of therapy in diseases of various organs and systems. Teranostics. Pharmacogenetic test systems. Databases of pharmacogenetic studies. Digital technologies in personalized pharmacotherapy.

9. Tasks:

- teach the methodology of rational prescribing of medicines, taking into account the individual characteristics of the patient;
- teach you to predict and evaluate the side effects of medicines, taking into account the individual characteristics of the patient;
- teach them to evaluate possible drug interactions, taking into account the individual characteristics of the patient;

10. Justification of the choice of discipline: The elective discipline "Personalized Pharmacotherapy" is the final link in the chain of medical and biological disciplines at the Faculty of Medicine. As an integrative subject, Personalized Pharmacotherapy combines a number of logically related and harmoniously complementary disciplines: pharmacology, bio-chemistry, pharmacotherapy, evidence-based medicine, genetics, pharmacogenetics, molecular biology, and OMICS technologies.

11. Learning outcomes:

LO1	Demonstrates knowledge in the field of biochemical, microbiological, and molecular biotechnological research using DNA analysis methods.
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LO2	Selects the most effective and safe drugs based on personalized therapy methods
LO3	Interacts with doctors and other specialists to conduct personalized therapy to ensure rational pharmacotherapy
LO4	Searches for individualized pharmacotherapy using information and communication resources. reference books, databases, and Internet resources.

12. Prerequisites: Clinical and pharmacological characteristics of individual groups and drugs and the formula system.

13. Post-requirements: professional development.

14. Literature:

Main page:

1. Kalieva, Sh. S. Clinical pharmacology and rational pharmacotherapy. Volume 1: textbook / Sh. S. Kalieva, N. A. Minakova . . Almaty : Evero Publ., 2016, 460 p .

2. Kalieva, Sh. S. Clinical pharmacology and rational pharmacotherapy. Volume 2: textbook / Sh. S. Kalieva, N. A. Simokhina. - Almaty :Evero, 2016. - 288 p.

3. Гринхальх Т. Дәлелді медицина негіздері: оқулық: аударма ағылшын тілінен/ жауапты ред. Г.С. Кемелова; қазақ тіліне ауд. Т.К.Сағадатова. –М.: ГЭОТАР- Медиа, 2014

4. Құлмағамбетов, И. Р. Клиникалық фармакология. 1-бөлім: оқу құралы / И. Р. Құлмағамбетов. Almaty : Evero Publ., 2014, 320.p. (in Russian)с.

5. Құлмағамбетов, И. Р. Клиникалық фармакология. II-бөлім: оқу құралы / И. Р. Құлмағамбетов. Almaty : Evero Publ., 2014, 392. p. (in Russian).

6. Petrov V. I. Medicine based on evidence: textbook. manual / V. I. Petrov, S. V. Nedogoda.- ; Rivers. Educational.-and methodical obed.by med. and pharm. education of Russian universities, Moscow: GEOTAR-Media, 2012

Additional information:

1. Rational pharmacotherapy in oncology: hands-on, for practicing physicians/ edited by M. I. Davydov and, V. A. Gorbunov, Moscow: GEOTAR-Media, 2015, 844 p.

2. Petrov V. I. Clinical pharmacology and pharmacotherapy in real medical practice: master class: textbook/ V. I. Petrov.- ; Rivers. State Educational Institution DPO " Rossiyskaya med. aring road. postgraduate education", Moscow: GEOTAR-Media, 2011, 880 p.(in Russian).

3. Дәріс кешені- Дәрілерді тиімді пайдалану пәні бойынша: дәріс кешені / фармакология, фармакотерапия және клиникалық фармакология кафедрасы. - Shymkent : ОКМФА Publ., 2016. - 65 бет. p..

4. Rakhimov K. D., Zordinova K. A. Guide to the safe use of medicines: a guide/ K. D. Rakhimov, K. A. Zordinova; Ministry of Health of the Republic of Kazakhstan; Almaty State Institute of Health Improvement. Research Institute of Pharmacology and Toxicology; National.акадAcademy of Sciences of the Republic of Kazakhstan. Almaty: B. I., 2009, 244 p. (in Russian).

Electronic publications:

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1. Department of Pharmacology, Pharmacotherapy and Clinical Pharmacology

2. Level of training: Master's degree

3. Educational program: "Pharmacy", specialized department

4. Course: 1

5. Name of elective discipline: Selection and substitution of medicines: generics and biosimilars

6. Number of credits: 5

7. Objective: To develop skills in the rational use of general-purpose drugs and biosimilars in drug therapy

8. Content of the discipline: Modern organization of drug supply. Study of drug substitution in the healthcare system: clinical efficacy, safety, economic feasibility. Procedure for determining the substitutability of medicinal products for medical use. Original and generic medicines in therapeutic practice. Problems of generic substitution: pros and cons.

9. Tasks:

- teach them to evaluate the use of generics and biosimilars, taking into account the individual characteristics of the patient.
- teach you how to make the optimal choice and replacement of a drug, if necessary, in order to improve the rationality of pharmacotherapy.

10. Justification of the choice of the discipline: Development of the development and production of high-tech drugs and biosimilars. Significant nomenclature of generic drugs. Possible substitutions for bioequivalent drugs. Economic accessibility of generics in the pharmaceutical market and in the drug supply of media organizations. Biosimilars are widely used in oncological practice, in the treatment of autoimmune diseases, etc.

11. Learning outcomes:

LO1	Demonstrates knowledge of modern organization of drug provision in medical organizations.
LO2	Defines and uses the procedure for replacing generic drugs and original drugs for medical use
LO3	is able to replace drugs taking into account clinical efficacy, safety, and economic feasibility
LO4	4Provides recommendations and justifications for choosing and replacing original drugs with generics and biosimilars
LO5	is able to demonstrate effective communication when discussing drug replacement issues
LO6	Based on scientific literature, data, etc. scientific publications, data from the national drug formulary, international drug formularies, etc. able to independently develop skills in the selection and replacement of medicines.

12. Prerequisites: Clinical and pharmacological characteristics of individual groups and drugs and the formula system.

13. Post-requirements: professional development.

14. Literature:

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6. Kalieva Sh. S. Clinical pharmacology and rational pharmacotherapy in gastroenterology / Kalieva Sh. S., 2020. - 401 p. <https://www.elib.kz/ru>

1. Department of Pharmacology, Pharmacotherapy and Clinical Pharmacology

2. Level of training: Master's degree

3. Educational program: "Pharmacy", specialized direction

4. Course: 1

5. Name of elective discipline: Rational antimicrobial therapy and antibiotic prophylaxis

6. Number of credits: 5

7. Goal: Formation and development of skills in the use of antimicrobial agents in order to curb the development of antibiotic resistance

8. Content of the discipline: Pharmacodynamics, pharmacokinetics, spectrum of antimicrobial activity. Principles of choice (empirical and etiotropic), determination of the dosage regimen depending on the location of infection and severity of the condition, kidney and liver function. Methods for evaluating the effectiveness and safety of antimicrobial drugs based on the principles of evidence-based medicine. Combination of antimicrobial drugs and interactions when co-administered with drugs of other groups. Pharmacological incompatibility in the use of antimicrobial agents.

9. Tasks:

- teach the skills of rational use of antimicrobial agents for various infectious diseases;
- developing skills to assess the rational use of antimicrobial agents.

10. Justification for the choice of the discipline: the problem of antibiotic resistance is one of the main problems voiced by WHO for the next 10 years. It is necessary to develop knowledge and skills in the rational administration of antimicrobial drugs at all levels of medical care and at the level of drug sales.

11. Learning outcomes:

LO1	Demonstrates knowledge of the effective and safe use of antimicrobials
LO2	is able to interact effectively with healthcare professionals in order to achieve the best results for the patient on the rational use of antimicrobials
LO3	is able to assess risks and use the most effective methods to ensure a high level of safety in prescribing antimicrobials
LO4	able to act within the legal and organizational field of the healthcare system of the Republic of Kazakhstan work within the legal and organizational field of the healthcare system of the Republic of Kazakhstan As part of interprofessional teams to implement drug management policies of rational use of medicines
LO5	is able to critically evaluate specialized literature, effectively use international databases in their daily activities, participate in research work
LO6	is able to learn independently and train other members of the professional team, actively participate in discussions, conferences and other forms of continuous professional development on the rational use of antimicrobial medicines. funds.

12. Prerequisites: Clinical and pharmacological characteristics of individual groups and drugs and the formula system.

13. Post-requirements: professional development.

14. Literature:

1. Kalieva Sh. S. Clinical pharmacology and rational pharmacotherapy. Volume 1: textbook / Sh. S. Kalieva, N. A. Minakova . . Almaty : Evero Publ., 2016, 460 p.

2. Kalieva, Sh. S. Clinical pharmacology and rational pharmacotherapy. Volume 2: textbook / Sh. S. Kalieva, N. A. Simokhina. Almaty: Evero Publ., 2016, 288 p.
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11. Kliniko-farmak. approaches to perioperative antithrombotic therapy Dyusembayeva N. K., 2016 <https://www.aknurpress.kz/reader/web/1560>

In English

1. Katzung , Bertram G. Basic and Clinical Pharmacology [Text] : textbook / Katzung Bertram G. - 14 nd ed. - [S. l.] : McGrawHilleducation, 2018.-1250 p.
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1. Department of Pharmacology, Pharmacotherapy and Clinical Pharmacology

2. Level of training: Master's degree

3. Educational program: "Pharmacy", specialized direction

4. Course: 1

5. Name of the elective discipline: Assessment of the use of medicines and clinical and pharmacological expertise

6. Number of credits: 5

7. Objective: Formation and development of skills in the use of medicines, taking into account clinical and economic efficiency in pediatric practice, in special groups of patients and polymorbidity

8. Content of the discipline: Features of pharmacodynamics and pharmacokinetics in children and newborns. Features of dosage, dosage forms and means of delivery in children. Rational therapy of diseases in children based on the principles of evidence-based medicine. Clinical and pharmacological approaches, taking into account individual characteristics of pharmacokinetics and pharmacodynamics, to the choice and rational use in neonatology.

9. Tasks:

- teach the skills of rational use of medicinal products in different age groups (children's age, gerontology);
- formation of skills of working in the conditions of children's medical organizations on the rational use of medicines.

10. Justification of the choice of discipline: special attention in pharmacotherapy is paid to children's age, taking into account the anatomical and physiological features of the body

11. Learning outcomes:

LO1	Demonstrates knowledge of the effective and safe use of medicines in medical practice and in special patients
LO2	is able to interact effectively with healthcare professionals in order to achieve the best results for the patient, the principles of rational choice of drugs for patients, taking into account age
LO3	able to assess risks and use the most effective methods to ensure a high level of safety and quality of medical
LO4	able to act within the legal and organizational framework of the health care system of the Republic of Kazakhstan in providing medical care, provide basic and extended assistance in emergency situations, and work as part of interprofessional teams to implement the national health promotion policy.
LO5	is able to formulate adequate research goals and objectives, critically evaluate specialized literature, effectively use international databases in their daily activities, participate in the work of research
LO6	able to learn independently and train other members of the professional team, actively participate in discussions, conferences and other forms of continuous professional development.

12. Prerequisites: Clinical and pharmacological characteristics of individual groups and drugs and the formula system.

13. Post-requirements: professional development.

14. Literature:

1. Kalieva Sh. S. Clinical pharmacology and rational pharmacotherapy. Volume 1: textbook / Sh. S. Kalieva, N. A. Minakova . . . Almaty : Evero Publ., 2016, 460 p.

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6. Kalieva Sh. S. Clinical pharmacology and rational pharmacotherapy in gastroenterology / Kalieva Sh. S., 2020. - 401 p. <https://www.elib.kz/ru>

1. Department of Pharmacology, Pharmacotherapy and Clinical Pharmacology

2. Level of training: Master's degree

3. Educational program: "Pharmacy", specialized direction

4. Course: 1

5. Name of elective discipline: Pharmacovigilance and monitoring of adverse drug reactions

6. Number of credits: 5

7. Objective: To develop skills in therapy taking into account the clinical and economic effectiveness of medicines in specific clinical situations, taking into account polymorbidity in accordance with the main protocols and orders of the Ministry of Health of the Republic of Kazakhstan, the basics of the formulary system for the rational use of medicines.

8. Content of the discipline: Pharmacovigilance. Principles of good pharmacovigilance practice. Pharmacovigilance is a tool for regulating the circulation of medicines. The main directions of work of the pharmacovigilance system. Pharmacovigilance reporting system. Risk management plan and measures to minimize AI in the pharmaco-surveillance system, roles and responsibilities of participants in the pharmacovigilance system Characteristics of reliable pharmacovigilance systems.

9. Tasks:

- teach them to identify and predict the development of undesirable drug reactions in order to improve the rationality of pharmacotherapy;
- teach you how to work in the pharmacovigilance system of the Republic of Kazakhstan;

10. Justification for the choice of the discipline: Functioning of the pharmacovigilance system in medical and pharmaceutical organizations based on the decree of the Acting Minister of Health of the Republic of Kazakhstan dated February 4, 2021 No. KR DSM-15 On approval of good pharmaceutical practices.

11. Learning outcomes:

LO1	Demonstrates knowledge and skills in identifying, analyzing and evaluating reports of adverse drug effects
LO2	Prevents the risk of negative drug
LO3	Able RO3 is able to report cases of serious unforeseen adverse drug reactions
LO4	Contacts and collaborates with healthcare professionals on the identification and registration of side effects of medicines
LO5	is able to independently develop the ability to identify and skills of working in the pharmacovigilance system

12. Prerequisites: Clinical and pharmacological characteristics of individual groups and drugs and the formula system.

13. Post-requirements: professional development.

14. Literature:

1. Kalieva Sh. S. Clinical pharmacology and rational pharmacotherapy. Volume 1: textbook / Sh. S. Kalieva, N. A. Minakova . . Almaty : Evero Publ., 2016, 460 p.

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6. Kalieva Sh. S. Clinical pharmacology and rational pharmacotherapy in gastroenterology / Kalieva Sh. S., 2020. - 401 p. <https://www.elib.kz/ru>

1. Department: organization and management of pharmaceutical business

2. Level of education: profile magistracy

3. Educational programme M142-Pharmacy

4. Course: 1

5. Name of the elective discipline: Good distribution practice

6. Number of credits:4 credits

7. Purpose: Formation and consolidation of undergraduates' sustainable skills, knowledge in the field of drug treatment in conjunction with good distribution practice to comply with the norms, rules and basic principles of pharmaceutical activity.

8. Discipline content: Distribution is an activity related to the purchase, storage, supply or export of medicines, with the exception of retail sales, carried out jointly with manufacturers or owners of registration certificates, importers, other distributors or jointly with business entities engaged in the retail sale of medicines. The subject of the study is the basics of good distribution practice of GDP, the organization of a rational process of promoting goods from manufacturers to consumers.

9. Tasks:

- build system knowledge of good distribution practices;
- provide systemic knowledge on the main provisions of international and national documents on pharmaceutical activities;
- teach graduate students to apply logistic approaches in the field of drug circulation

10. Rationale for the choice of discipline:

In modern conditions, it is not enough to develop a new effective drug, to establish its optimal price, it is still necessary to choose effective channels for the distribution of drugs from the place of manufacture to the places of their use at a specific time in order to meet the needs of the population and medical institutions in the provision of medicines. This activity is carried out in conjunction with the manufacturers or owners of the registration certificate, importers, other distributors or together with business entities engaged in the retail sale of drugs.

11. Learning outcomes

Knowledge (the cognitive sphere)	Skills (psychomotor sphere)	Personal and professional competences (relations)
<ul style="list-style-type: none"> • demonstrates developing knowledge and understanding of regulatory and legal documents, logistics approaches in the field of drug circulation, principles of good distribution practice, requirements for pharmaceutical personnel, self-inspection procedures for carrying out activities in the field of drug circulation. 	<ul style="list-style-type: none"> • analyzes distribution channels of goods, factors of consumption of medicines and MD, information about suppliers, customers, applying methods for estimating logistics costs and ways to optimize them in the distribution system of goods; • organizes the acceptance of goods from the supplier, storage of medicines and medical devices on the basis of compliance with all operational procedures and their documentation. taking 	<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 introspection skills, teaching experience at the higher education level, searching information in databases, organizing information and using it to solve specific professional

	<p>measures to prevent falsification of medicines, medical devices;</p> <ul style="list-style-type: none"> • develops a unified approach to organizing the process of wholesale sales of medicines and medical devices, determining the turnover in pharmaceutical organizations, building models for managing stocks, material flows, justifying the use of the product life cycle in the promotion of medicines and medical devices, methods for determining, analyzing and assessing risks for quality. 	<p>problems based on research methods, developing ideas and developing critical thinking and writing skills scientific works.</p>
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12. Prerequisites: Organizational Framework for Good Practices in Pharmacy (GXP)

13. Postrequisites: Management consulting

14. Literature

14. Literature

Main:

1. Tiisti farmaceutikalyk praktikalardi uymdastyr zhane baskar negizderi : okulyk / K. D. Shertayeva , O. V. Blinova.-Zhasulan 2022
2. Shertayeva, K. D. Pharmaceutikalyk kyzmetti uymdastyru [Matin] : okulyk / K. D. Shertayeva. G.I. Utegenova. Shymkent : [B. I.], 2021. - 228 bet
3. Organizational and managerial foundations of good practices: textbook / K. D. Shertayeva [et al.]. - Shymkent : [B. I.], 2022. - 180 p.
4. Management and economics of pharmacy [Text]: textbook / edited by I. A. Narkevich. - M.: GEOTAR - Media, 2021. - 928 p.
5. Arystanov, J. M. Farmaciyany baskarylyu zhane ekonomikasy: okulyk / KR densaulyk aktau ministerligi; AstMUgyl. kenesi magilisinde shygaruga usyngan. - Almaty: Evero, 2013. - 452 bet
6. Arystanov, J. M. Management and economics of pharmacy textbook - Almaty: Evero, 2015.

Additional information:

1. Collection of Legislative and regulatory legal acts regulating pharmaceutical activity in the Republic of Kazakhstan: collection / comp. B. K. Mahatov [et al.]. - Shymkent :Zhasulan, 2017. - 380 p.
2. Kazakhstan Republikasyndagi pharmaceutikalyk kyzmetti retteitin Zannamalyk zhane normativtik -kukykyk aktiler zhinagi: zhinak / kurast. B. K. Mahatov [t/B.]. - Shymkent : Zhasulan, 2017. - 327 bet.
3. Arystanov, J. M. Organization of pharmaceutical activity: studies. stipend. - Almaty :Evero, 2015. - 608 s
4. Arystanov J.M. Pharmaceutikalyk kyzmetti uymdastyr negizderi.-Evero, 2013j
5. Hamid Mallah, Mike Long, Harold Baseman Risk management in pharmaceutical production: monograph/ M.Long, G.Baseman, translated from English. Under the general editorship of A.V. Alexandrova.-2nd ed.ispr.-M.:VIALEK,2017.-464c

Electronic resources:

1. UMKD is posted on the educational portal ukma.kz
2. Website of the Library and Information Center of the Academy lib.ukma.kz
3. YUKMA Media Library <https://media.skma.edu.kz/>
4. Akpigress Digital Library www.aknurpress.kz register and enter the promo code SDH-28
5. ABOUT the Repositories <http://lib.ukma.kz/repository/>
6. Republikalyk zhogary oku oryndary aralyk elektrondyk kitaphana <http://rmebrk.kz/>

7. "Zan" normativtik-kukykytk aktiler bazasy <https://zan.kz/ru>
8. "Paragraph Medicine" akparattyk zhuyesi <https://online.zakon.kz/Medicine/>
9. 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). Chapter 2, Article 10; Chapter 5, paragraph 3; Chapter 27.28;
https://online.zakon.kz/document/?doc_id=34464437
10. Order of the Acting Minister of Health of the Republic of Kazakhstan dated February 4, 2021 No. KR DSM-15. "On the approval of good pharmaceutical practices"
<https://adilet.zan.kz/rus/docs/V2100022167#z13>
11. Order of the Minister of Health of the Republic of Kazakhstan dated February 16, 2021 No. KR DSM-19 "On approval of the rules for storage and transportation of medicines and medical devices"
<https://adilet.zan.kz/rus/docs/V2100022230#z7>
12. Order of the Minister of Health of the Republic of Kazakhstan dated September 17, 2020 No. KR DSM-104/2020 On Approval of the Rules for Wholesale and Retail sale of Medicines and Medical devices.
<https://adilet.zan.kz/rus/docs/V2000021229#z129>

1. Department of organization and management of pharmaceutical business

2. Level of education: profile magistracy

3. Educational programme: M142 -pharmacy

4. Course: 1

5. Name of elective discipline: Management consulting

6. Number of credits:3 credits

7. Purpose: formation of knowledge, skills and abilities of undergraduates in the organization of management consulting the use of specific tools and methods to ensure optimal results of consulting services in the organizational diagnosis of pharmaceutical organizations.

8. The content of the discipline: The head of the enterprise expects the consultant to receive expert opinions on specific solutions or situations, discuss their problems and the opportunity to learn from the consultant certain professional knowledge and skills. Management consulting includes the field of activity in transferring the experience of successful leaders to young employees, in training specialists in conducting research work on the problems of the functioning and development of organizations.

9. Tasks:

- provide systemic knowledge and develop skills in the application of specific tools, methods of organizing management consulting in organizational diagnostics of pharmaceutical organizations.
- to develop skills in organizing and conducting professional and managerial consulting in the management of pharmaceutical personnel and in applying tools and methods for organizing management consulting and organizational diagnostics of pharmaceutical organizations.

10. Rationale for the choice of discipline:

Management consulting, as a discipline, includes a very important and rapidly developing field of activity to transfer the experience of successful managers to young employees, in training specialists in conducting research on the functioning and development of organizations. The condition for the success of the development of modern pharmaceutical business is the ability to outpace the needs of the market of pharmaceutical products and services. In these circumstances, the need for management consulting increases, especially when the management capacity of a pharmaceutical organization is insufficient to solve the existing problems.

11. Learning outcomes

Knowledge (the cognitive sphere)	Skills (psychomotor sphere)	Personal and professional competences (relations)
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<ul style="list-style-type: none"> • demonstrates developing knowledge and understanding of the system of management methods, forms of agreements, consulting process, specific tools of management consulting services for carrying out activities in the field of drug circulation. 	<ul style="list-style-type: none"> • conducts organizational diagnostics of a pharmaceutical enterprise using modern methods of analysis, collecting and processing information using computer technology; • owns the methods of consulting, defining the criteria for the effectiveness of the work of a consulting organization; • uses the matrix of organizational problems to identify the strengths and weaknesses of the organization, analyzing the organization's problems, test results, developing the contract structure, consulting model, methodological tools, business games and trainings. 	<ul style="list-style-type: none"> • owns 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 introspective skills, teaching experience at the higher education level, systematizing information and using it to solve specific professional problems, developing ideas and developing critical thinking and writing skills in scientific writing.
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12. Prerequisites: management and marketing at pharmaceutical enterprises, personnel and financial management.

13. Postrequisites: professional activity.

14.Literature

Main page:

1. Management and economics of pharmacy [Text]: textbook / ed. by I. A. Narkevich. - Moscow: GEOTAR-Media, 2017. - 928 p.
2. Arystanov, Zh. M. Management and economics of pharmacy textbook-Almaty: Evero, 2015.г.
3. Шертаева, К. Д. Фармацевтикалық кеңес: оқу құралы / К. Д. Шертаева, К. Ж. Мамытбаева, Ф. Ж. Умурзахова ; ҚР Денсаулық сақтау министрлігі; ОҚМФА. - Шымкент : Жасұлан, 2013. - 96 бет.
4. Shertayeva K. D. Pharmaceutical consulting: textbook. manual / K. D. Shertayeva, G. Zh. Umurzakova, K. Zh. Mamytbayeva; Ministry of Health of the Republic of Kazakhstan; SKSFA. - Шымкент: Жасұлан, 2013. - 81 с
5. Arystanov Zh.M., Akhelova Sh. L., Zulpykharova A. T. Upravlenie i ekonomika pharmatsii s osnovami menedzhmenta i marketing [Management and economics of pharmacy with the basics of management and marketing]. - Karaganda:MedetGroup, 2021. - 590с

Additional information:

1. Collection of Legislative and regulatory acts regulating pharmaceutical activity in the Republic of Kazakhstan: collection / compiled by B. K. Makhatov [et al.]. - Shymkent: Zhasulan, 2017. - 380 p.
2. Arystanov, Zh.M. Management and marketing in pharmacy: textbook / Zh. M. Arystanov, A. T. Tokseitova. - Almaty:Evero, 2016. - 532 p.
3. Ospanova, Zh. B. Psikhologiya upravleniya [Psychology of management]. manuals / Zh. B. Ospanova. - ; Approved by I rec. to the ed. Learned. Council of KSMU. - Almaty :Evero, 2014. - 160 pages
4. Shertayeva K. D., Mamytbayeva K. Zh., Zhanbyrbayeva A.D. Personnel Management : textbook / K. D. Shertayeva, K. J. Mamytbayeva, A.D. Zhanbyrbayeva. Shymkent : SKMA Publ., 2018, 140 p. (in Russian)

5. Nurgazina, Zh. K. Managerial accounting [Text]: textbook / Zh.K. Nurgazina ; Ministry of Education and Science of the Republic of Kazakhstan. - ; approved by Rep. of the Scientific and Practical Center of the Ministry of Education and Science of the Republic of Kazakhstan. Almaty : BOOKPRINT LLP, 2014, 411 p. (in Russian)

Қазақстан Республикасындағы фармацевтикалық қызметті реттейтін Заңнамалық және нормативтік -құқықтық актілер жинағы: жинақ / құраст. Б. Қ. Махатов [т/б.]. - Шымкент : Жасұлан, 2017. - 327 бет.

Electronic resource

1. UMKD is available on the educational portal ukma.kz.kz
2. Website of the Library and Information Center of the Academy lib.ukma.kz
3. SKMA Media Library <https://media.skma.edu.kz/>
4. Akpigrress Digital Library www.aknurpress.kz register and enter the promo code SDH-28
5. ОҚМА Репозиторийі <http://lib.ukma.kz/repository/>
6. Республикалық жоғары оқу орындары аралық электронды қкітапхана <http://rmebrk.kz/>
7. «Заң» нормативтік-құқықтық актілербазасы <https://zan.kz/ru>
8. «Параграф Медицина» ақпараттық жүйесі <https://online.zakon.kz/Medicine/>
9. Code of the Republic of Kazakhstan dated July 7, 2020 No. 360-VI "On the health of the people and the health care system" (with amendments and additions). Chapter 2, Article 10; Chapter 5, paragraph 3; chapters 27, 28;
https://online.zakon.kz/document/?doc_id=34464437