

Academic programme
component

31.05.01 General Medicine
(in a foreign language)
programme

Б1.0.26
discipline code

SYLLABUS

Discipline **Б1.0.26 Pharmacology**

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Approved at the meeting of the
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Clarification

Discipline volume: 6 credit points

1. Discipline (module) training results correlated with the indicators of competencies achievement determined by the educational programme

Competency	Indicators of competency achievement	Discipline (module) training results
ОПК-7 Can prescribe treatment and control its effectiveness and safety	<p>ИД-1ОПК-7 Knows clinical and pharmacological characteristics of medications, indications and contraindications for prescribing medical treatment;</p> <p>ИД-2ОПК-7 Evaluates the effectiveness and safety of using medications, medical devices, clinical nutrition and other treatment methods</p> <p>ИД-3ОПК-7 Knows and applies modern medical and combined treatment regimens in accordance with the standards of providing healthcare;</p>	<p>To know:</p> <ul style="list-style-type: none"> -clinical and pharmacological characteristics of medications, indications and contraindications for prescribing medical treatment; - possible complications of using medications and their signs; - methods for evaluating the pharmacological effect, effectiveness and safety of the main groups of medications. - modern medical and combined treatment regimens to treat a disease or a condition based on the diagnosis, age and clinical picture, in accordance with the standards of providing healthcare <p>To be able to:</p> <ul style="list-style-type: none"> - develop and justify a treatment plan based on the diagnosis, age of the patient, clinical picture of a disease based on the effective procedures of providing healthcare; - select a dosage form, determine the optimal strategy of medication administration, regimen and dose; - evaluate the effectiveness and safety of treatment <p>To have:</p> <ul style="list-style-type: none"> - skills in selecting medication to treat patients with various nosological entities based on the effective procedures of providing healthcare; - skills in predicting the results of medication interactions; - skills in conducting personalised medication-assisted treatment based on the age, nature of the disease and the functional state of the patient's body; - skills in predicting the results of medication interactions, methods for evaluating effectiveness and safety of medication therapy

2. Discipline contents

№	Topic	Contents
1	Clinical Pharmacology	The subject and objectives of Clinical Pharmacology. Development history of pharmacology. The journey of medication from laboratory to patient. The concept of medicinal substances, medications, dosage forms. Main issues of medication pharmacokinetics and pharmacodynamics. Dosage of medication. Main aspects of chronopharmacology and pharmacokinetics. Individual characteristics of the organism that affect medication action. Phenomena that occur with repeated and combined medication administration. Medications side effects. Prescriptions and how to fill out a prescription. Doses of medicinal substances. Dosage forms: solid, semisolid, liquid, etc., prescription requirements.
2	Neurotropic Agents	Agents acting on the cholinergic synapse. Agents acting on the adrenergic

		synapse. Agents acting on afferent innervation. Anesthetic agent. Ethyl alcohol. Sleep aids, antiepileptic and antiparkinsonian agents. Opioid and non-opioid analgesics. Psychostimulant and restorative agents. Nootropic agents. Antidepressants.
3	Agents affecting organs	Cardiac glycosides. Antiarrhythmic medications. Antianginal medications, agents used for cerebral circulation disorder, vasoprotective medications. Hypertensive (antihypertensive) and pressor agents. Diuretics and agents affecting the myometrium. Agents affecting blood formation, blood clotting, fibrinolysis and thrombocyte aggregation. Agents affecting the respiratory system functions. Agents affecting the digestive system functions.
4	Chemotherapeutic agents. Antibiotics	Foundations and history of chemotherapy. Sulfonamides, classification, mechanism of action. Anti-syphilitic, anti-tuberculosis, antiviral, antifungal medications. Features of their action. Classification of antibiotics. Characteristics of various groups of antibiotics, mechanism of action. Indications, contraindications to prescribing antibiotics, possible side effects.

3. Training support materials

- multimedia presentations on the discipline are available on MAU LMS Moodle;
- practical training manuals are available on MAU LMS Moodle;
- learning materials are available on MAU official website at «[Информация по образовательным программам, в том числе адаптированным](#)».

4. Discipline assessment materials

Discipline assessment materials is a separate document within the educational programme, it includes:

- a list of competencies indicating the stages of their achievement within the discipline;
- formative assessment tasks;
- interim assessment tasks;
- tasks for internal assessment of education quality.

5. The list of main and supplementary literature (printed, electronic and (or) electronic library resources)

Main literature:

1. Копасова, В.Н. Фармакология: полный курс к экзамену : [16+] / В.Н. Копасова ; Научная книга. – 2-е изд. – Саратов : Научная книга, 2020. – 351 с. – Режим доступа: по подписке. – URL: <https://biblioclub.ru/index.php?page=book&id=578467> . – Библиогр. в кн. – ISBN 978-5- 9758-1927-7. – Текст : электронный.

2. Мицьо, В.П. Фармакология : [12+] / В.П. Мицьо ; Научная книга. – 2-е изд. – Саратов : Научная книга, 2020. – 304 с. : табл. – Режим доступа: по подписке. – URL: <https://biblioclub.ru/index.php?page=book&id=578345> . – ISBN 978-5-9758-1930-7. – Текст : электронный.

3. Харкевич Д. А. Фармакология : учебник для использования в образовательных учреждениях, реализующих основные профессиональные образовательные программы

высшего образования уровня специалитета по направлениям подготовки 31.05.01 "Лечебное дело". – 13-е изд., перераб. – Москва : ГЭОТАР-Медиа, 2021. – 751 с. : ил., табл. – Указ. препаратов: с. 734-751. – ISBN 978-5-9704-5883-9 [Гриф]. – Текст (визуальный) : непосредственный

Supplementary literature:

4. Аляутдина, Р. Н. Фармакология : учебник / под ред. Р. Н. Аляутдина - Москва : ГЭОТАР-Медиа, 2018. - 1104 с. - ISBN 978-5-9704-4304-0. - Текст : электронный // ЭБС "Консультант студента" : [сайт]. - URL : <https://www.studentlibrary.ru/book/ISBN9785970443040.html>

5. Кулиненков, О.С. Медицина спорта высших достижений : [12+] / О.С. Кулиненков. – Москва : Спорт, 2016. – 321 с. : ил. – Режим доступа: по подписке. – URL: <https://biblioclub.ru/index.php?page=book&id=460860> . – Библиогр.: с. 307-314. – ISBN 978-5-9907239-6-2. – Текст : электронный.

6. Professional databases and information reference systems

1) The state system of legal information – official legal information web portal - URL: <http://pravo.gov.ru>

2) «Единое окно доступа к образовательным ресурсам» information system- URL: <http://window.edu.ru>

3) Jaypeedigital (<https://www.jaypeedigital.com/home>) – online platform of medical resources by Jaypee Brothers Medical Publishers

Platform manual (in English): https://disk.yandex.ru/i/K3Q61Zerp_x5Kw

4) S Ebooks (Medical & Science) (<https://eduport-global.com/>) – digital library of medical literature by CBS Publishers & Distributors Pvt. Ltd.

5) Reference legal system. Consultant Plus - URL: <http://www.consultant.ru/>

6) Online University library <https://biblioclub.ru> Access is provided until May 29th, 2025

7) «Лань» digital library system <https://e.lanbook.com/> (Access is provided until October 1st, 2024).

8) «Цифровой образовательный ресурс IPRsmart» digital library system <http://iprbookshop.ru/> (Access is provided from April 20th, 2016 until April 19th, 2024).

9) «Лань» digital library system of licensed educational and professional literature e.lanbook.com

7. The list of licensed and openly distributed software, including domestic software

1. Microsoft Windows Vista Business Russian Academic OPEN OP, license № 44335756 dated 29.07.2008 (contract №32/379 dated 14.07.08)

2. Microsoft Office 2007 Russian Academic OPEN office software suite, license № 45676388 dated 08.07.2009 (contract 32/224 dated 14.0.2009)

3. Microsoft Office 2010 Russian Academic OPEN office software suite, license № 47233444 dated 30.07.2010 (contract 32/285 dated 27 July 2010)

4. Optical character recognition system ABBYY FineReader Corporate 9.0 (network version), 2009 (contract ЛЦ-080000510 dated 28 April 2009)

5. Antivirus software (contract №7689 dated 23.07.2018 for Dr.Web Desktop Security Suite Program)

8. Ensuring mastering the discipline for people with special needs

Students with special needs are provided with printed and (or) electronic educational resources adapted to their needs.

9. The material and technical support of the discipline (module) is presented in the appendix to the academic programme "Material and technical conditions for the implementation of the educational programme" and includes:

- classrooms for conducting training sessions provided for by the specialty programme, fitted with technical equipment;

- spaces for self-study work fitted with computer equipment with the Internet connection and access to MAU LMS Moodle.

10. Study load distribution by type of educational activity

Table 1 - Study load distribution

Educational activity	The discipline (module) study load distribution by the forms of training			
	Full-time			
	Semester/year	Total hours	Semester/year	Total hours
	3/5		3/6	
Lectures	28	28	20	20
Seminars	40	40	40	40
Self-study work	40	40	12	12
Preparation for interim assessment	-		36	36
Total hours for the discipline	108	108	108	108
/ in the form of seminars	40	40	40	40

Interim and formative assessment

Examination			+	
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The list of seminars by the forms of education

№	Seminar topics
1	2
Full-time	
1	The prescription and its structure. Solid, semisolid, liquid dosage forms.
2	Substances active in the field of M- and N - cholinergic receptors.
3	Substances active in the field of adrenoreceptors: adrenoceptor agonist, adrenoceptor blocking agent.
4	Substances active in the field of endings of afferent nerve fibers.
5	Anesthetic agent, sleep aids, ethyl alcohol.
6	Opioid and non-opioid analgesics.
7	Antipsychotics, antianxiety agent, sedating medication.
8	Antiepileptic and antiparkinsonian agents.

9	CNS stimulants, nootropic agents, antidepressants.
10	Agents affecting inflammatory processes.
11	Agents affecting allergy and immunity processes.
12	Agents affecting the function of the respiratory organs.
13	Hormonal agents, their synthetic replacements and antagonists.
14	Vitamin supplements.
15	Cardiotonic agents and agents affecting the cerebral blood flow.
16	Antianginal and antiarrhythmic medications.
17	Hypotensive, hypertensive and antisclerotic agents.
18	Diuretics and anti-gout agents.
19	Agents affecting the system of the aggregate blood state regulation (ABSR) .
20	Erythropoiesis and leucopoiesis stimulants.
21	Antiseptic and sanitizing agents
22	Sulphanilamide medications and chemotherapeutic agents of different chemical constitution.
23	Antibiotics and anti-syphilitic agents.
24	Anti-tuberculosis, antifungal and antiviral medications.
25	Antiprotozoal and vermicide agents.
26	Agents affecting the function of the digestive organs.
27	Medications interactions.
28	Complications of medication therapy.