

BOGOMOLET'S NATIONAL MEDICAL UNIVERSITY
Educational and Research Institute of Medicine
Department of Internal Medicine with a Course in Cardiology and Rheumatology,
Department of Internal Medicine with a Course in Gastroenterology



APPROVED

**Vice-Rector for Research,
Academic and Education Affairs
Doctor of Medical Sciences, Professor
OLEH VLASENKO**
31 08 2026

PROGRAM OF THE ACADEMIC DISCIPLINE

Basics of rheumatology, clinical aspects of pulmonology

Level of higher education: Second (master's degree)

Area of knowledge: 22 Health care

Specialty 222: Medicine

Educational program: EPP Medicine

2026-2027 academic year

Program "Basics of rheumatology, clinical aspects of pulmonology" for students of level of higher education the second (master's degree), specialty 222 Medicine, 5th years at the Educational and Research Institute of Medicine, Faculty of Medical Training for the Armed Forces of Ukraine.

Developers:

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Discussed and approved at the meeting of the Cycle Methodological Commission for Therapeutic Disciplines

Protocol № 1 of "27" August 2026

Head of the Cycle Methodological Commission for Therapeutic Disciplines

Doctor of Medical Sciences, Professor  O.B. Iaremenko

Reapproved:

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**1. Description of the academic discipline. EC 5.12. Basics of rheumatology,
clinical aspects of pulmonology**

Name of indicators	Area of knowledge, specialty, level of higher education	Characteristics of academic discipline
		full-time education
Number of credits -3	Area of knowledge <u>22 Health care</u>	Elective
Modules – 1	Specialty <u>222 Medicine</u>	Year of education
Content modules – 1		5 th
Individual scientific and experimental task _____		Semester
(name)		
Total number of credits/hours – 3/90		9-10 th
Weekly hours for fulltime education: classrooms studies – 30 self-study work – 60	Educational level <u>Second (master's degree)</u>	Lectures
		0 Hours
		Practical lessons
		30 hours
		Laboratory lessons
		0 hours
		Self-study work
		60 hours, including
		Individual tasks
		1 hour
		Type of control
		Differential credit

2. Purpose, expected learning results, and evaluation criteria of learning results

Purpose of studying the academic discipline. To develop the ability to apply the acquired knowledge, skills, practical competencies, and understanding in solving the typical professional tasks of a physician in the healthcare sector, as defined by the established lists of disease syndromes and symptoms, diseases requiring special patient management, laboratory and instrumental investigations.

Competences and learning outcomes, the formation of which contributes to the discipline

List of competencies:

Integral:

Ability to solve complex problems, including those of a research and innovation nature in the field of medicine. Ability to continue learning with a high degree of autonomy. Ability to continue education with a high degree of autonomy.

General competences (GC):

GC 1. Ability for abstract thinking, analysis, and synthesis.

GC 2. Ability to learn and master modern knowledge.

GC 3. Ability to apply knowledge in practical situations.

GC 4. Knowledge and understanding of the content of professional activities and responsibility for their performance.

GC 5. Ability to adapt and act in a new situation.

GC 6. Ability to make informed decisions.

GC 7. Ability to work in a team.

GC 8. Ability to interact with others.

CG 10. Ability to use information and communication technologies.

GC 11. Ability to search, process and analyze information from various sources.

GC 12. Determination and perseverance in accomplishing assigned tasks and fulfilling responsibilities.

GC 13. Awareness of equal opportunities for all members of society and gender issues.

GC 14. Ability to exercise one's rights and responsibilities as a member of society, to understand the values of a civil (free democratic) society and the need for its sustainable development, the rule of law, and the rights and freedoms of individuals and citizens in Ukraine.

GC 15. Ability to preserve and multiply moral, cultural, scientific values and achievements of society on the basis of understanding the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, technology and technology, to use various types and forms of physical activity for active recreation and leading a healthy lifestyle.

Special (professional, subject-related) competences (PC):

PC 1. Ability to collect medical information about the patient and analyze the clinical data.

PC 2. Ability to determine the necessary list of laboratory and instrumental investigations and evaluate their results.

PC 3. Ability to establish a preliminary and clinical diagnosis of a disease.

PC 6. Ability to determine the principles and nature of treatment and prevention of diseases.

PC 11. Ability to solve medical problems in new or unfamiliar environments with incomplete or limited information, considering aspects of social and ethical responsibility.

PC 16. Ability to maintain medical documentation, including electronic forms.

PC 21. Communicate clearly and unambiguously their knowledge, conclusions, and arguments on healthcare issues and related matters to both specialist and non-specialist audiences, including learners.

PC 24. Adherence to ethical principles when working with patients.

PC 25. Adherence to professional and academic integrity, and taking responsibility for the credibility of the obtained scientific results.

Programme Learning Outcomes (PLO)

PLO 1. Have thorough knowledge of the structure of professional activity. Be able to carry out professional activities that require updating and integration of knowledge. Be responsible for professional development, with the ability for further professional learning with a high level of autonomy.

PLO 2. Understanding and knowledge of fundamental and clinical biomedical sciences at a level sufficient to solve professional problems in the field of healthcare.

PLO 3. Specialized conceptual knowledge that incorporates scientific achievements in healthcare and is the basis for conducting research, as well as a critical reflection on problems in the field of medicine and related interdisciplinary issues, including the early intervention system.

PLO 4. Isolate and identify the leading clinical symptoms and syndromes (according to List 1); using standard methods, based on the patient's medical history, physical examination findings, and knowledge of the human body and its organs and systems, establish a preliminary clinical diagnosis of the disease (according to List 2).

PLO 5. Collect complaints, medical history, and history of present illness; assess the patient's psychomotor and physical development and the condition of the body's organs and systems, and based on the results of laboratory and instrumental investigations, evaluate information regarding the diagnosis (according to List 4), taking into account the patient's age.

PLO 6. Establish a definitive clinical diagnosis by making an informed decision and analyzing the obtained subjective and objective data from clinical and additional investigations, and performing differential diagnosis, adhering to relevant ethical and legal norms, under the guidance of a supervising physician in a healthcare facility setting (according to List 2).

PLO 7. Prescribe and analyze additional (mandatory and optional) investigations (laboratory, functional, and/or instrumental) (according to List 4) for

patients with diseases of organs and systems to perform differential diagnosis (according to List 2).

PLO 9. Determine the nature and principles of treatment (conservative, surgical) for patients with diseases (according to List 2), considering the patient's age, within a healthcare facility, outside of it, and during stages of medical evacuation, including field conditions; base this on a preliminary clinical diagnosis, while adhering to relevant ethical and legal norms, by making an informed decision following established algorithms and standard regimens, and, if necessary to modify a standard regimen, demonstrate the ability to justify personalized recommendations under the guidance of a supervising physician in a clinical setting.

PLO 21. Search for the necessary information from professional literature, databases, and other sources, and analyze, evaluate, and apply this information

PLO 22. Apply modern digital technologies, specialized software, and statistical methods of data analysis to solve complex healthcare problems.

PLO 25. Clearly and unambiguously convey one's own knowledge, conclusions, and arguments on healthcare problems and related issues to both specialists and non-specialists.

PLO 27. Communicate fluently in the state language and English, both orally and in writing, to discuss professional activities, research, and projects.

Learning Outcomes

Know:

- Standard approaches to history taking and the clinical examination of patients with diseases of the respiratory system, musculoskeletal system, and connective tissue.
- The principal clinical symptoms or syndromes encountered in rheumatology and pulmonology.
- Diagnostic algorithms for diseases of the respiratory system, musculoskeletal system, and connective tissue.

- Instrumental diagnostic methods used in rheumatology and pulmonology, the indications for their use, and the interpretation of their results.
- The criteria for establishing preliminary and clinical diagnoses of diseases of the respiratory system, musculoskeletal system, and connective tissue.
- The principles of differential diagnosis of diseases of the respiratory system, musculoskeletal system, and connective tissue.
- The clinical pharmacological characteristics of antibacterial, antifungal, bronchodilator, mucolytic medicines, and inhaled and systemic glucocorticoids.
- The principles of rational pharmacotherapy for respiratory diseases.
- Current treatment algorithms and standards for respiratory diseases.
- The principles of primary and secondary prevention of diseases of the respiratory system, musculoskeletal system, and connective tissue.
- Ethical principles in patient care.
- The principles of professional and academic integrity.

Be able to:

- Collect medical information and analyse the clinical data of patients with diseases of the respiratory system, musculoskeletal system, and connective tissue.
- Identify the principal clinical symptom or syndrome in patients with diseases of the respiratory system, musculoskeletal system, and connective tissue.
- Establish a preliminary diagnosis of diseases of the respiratory system, musculoskeletal system, and connective tissue.
- Determine the required laboratory and instrumental investigations and evaluate their results in patients with diseases of the respiratory system, musculoskeletal system, and connective tissue.
- Perform the differential diagnosis of diseases of the respiratory system, musculoskeletal system, and connective tissue.
- Establish a clinical diagnosis of diseases of the respiratory system, musculoskeletal system, and connective tissue.

- Justify the selection of and prescribe rational pharmacotherapy for patients with respiratory diseases in accordance with the preliminary clinical diagnosis and current treatment algorithms and standards.
- Implement primary and secondary prevention measures for diseases of the respiratory system, musculoskeletal system, and connective tissue.
- Complete medical documentation, including electronic medical records.
- Adhere to ethical principles in patient care.
- Adhere to the principles of professional and academic integrity.

Assessment Criteria for Learning Outcomes

Students' learning outcomes are assessed in accordance with the Regulations on the Procedure for Assessing Students' Knowledge during Ongoing and Final Assessment of an Academic Discipline at Bogomolets National Medical University (with changes and additions), approved by the Academic Council of Bogomolets National Medical University (№4 of November 28, 2023).

Current and final control are control measures carried out at Bogomolets National Medical University (hereinafter – NMU) to determine the level of knowledge, skills, and abilities acquired by students in accordance with the requirements of higher education regulatory documents and to ensure the timely adjustment of the educational process in the relevant field of study and specialties of NMU.

The knowledge evaluation criteria determine the level of students' theoretical preparation, including the depth of their understanding of the learning material, the accuracy with which concepts and definitions are reproduced, the logical presentation of knowledge, the ability to establish cause-and-effect relationships, and the application of acquired knowledge to solve educational and clinical problems. Knowledge evaluation also takes into account students' ability to analyse information, make generalisations, and formulate well-reasoned conclusions. The system of students' knowledge evaluation in the academic discipline includes

ongoing and final knowledge control, evaluation of practical training outcomes, and certification of higher education students enrolled in the Medicine educational programme.

For each stage of the lesson and each unit of current control, the student receives a traditional grade on the “5-4-3-2” scale. The teacher then calculates the arithmetic mean grade for the lesson, which is converted into points according to the grading scale (distribution) provided by the program of the academic discipline. If the student receives a grade of “2” when calculating the arithmetic mean traditional grade for the lesson, it is converted into 0 points. The maximum number of points a student can earn for current control is 200 points.

The results of knowledge control for each component of a lesson, including test items, are evaluated according to the following grading scale:

59% or fewer correct answers – Grade “2”

60-74% correct answers – Grade “3”

75-89% correct answers – Grade “4”

90-100% correct answers – Grade “5”.

A grade of “5” is awarded if the student demonstrates comprehensive, systematic, and thorough knowledge of the learning material, demonstrates confident command of professional terminology, correctly interprets clinical data, justifies diagnostic and therapeutic decisions, independently analyses clinical cases, performs practical skills accurately and without errors, and effectively applies the acquired knowledge in both routine and non-routine professional situations.

A grade of “4” is awarded if the student demonstrates sufficiently comprehensive and sound knowledge of the learning material, correctly answers the principal questions, demonstrates the required practical skills, and is able to apply knowledge in typical clinical situations, but makes minor errors or inaccuracies that are corrected independently following clarification by the teacher.

A grade of “3” is awarded if the student has mastered the core content of the curriculum, possesses fundamental theoretical knowledge and basic practical skills,

but provides incomplete or insufficiently substantiated answers, makes errors and inaccuracies, and requires guidance from the teacher when performing practical tasks or analysing clinical situations.

A grade of “2” is awarded if the student has not mastered a substantial part of the learning material, lacks essential theoretical knowledge and practical skills, is unable to solve typical clinical problems independently, and makes serious errors indicating an insufficient level of professional competence.

The final control is conducted in the form of differential credit (9-10 semesters). Final control are assessed according to the University's 200-point knowledge control system and the national scale and are recorded in the corresponding checklists.

3. Program of the academic discipline

Topic 1. Main symptoms and syndromes in rheumatology

Main symptoms: pain in the joints, spine, bones, and periarticular areas; muscle pain and muscle weakness; morning stiffness; fever and weight loss; symptoms of involvement of the skin, mucous membranes, blood vessels, eyes, gastrointestinal tract, ENT organs, lungs, nervous system, kidneys, and cardiovascular system.

Main syndromes: articular syndrome, back pain syndrome, muscular syndrome, antiphospholipid syndrome, inflammatory and general trophic syndromes, syndromes involving the skin, blood vessels, mucous membranes, and internal organs.

Topic 2. Instrumental methods of investigation in rheumatology

Diagnostic value, indications, contraindications, and interpretation of the results of instrumental investigations: radiography, ultrasonography, capillaroscopy, bone densitometry, magnetic resonance imaging (MRI), multidetector computed tomography (CT), CT angiography, MR angiography, angiography, positron emission tomography (PET), radionuclide scintigraphy, and biopsy.

Topic 3. Main symptoms and syndromes in pulmonology

Main symptoms: cough, sputum production, dyspnoea, chest pain, haemoptysis, and cyanosis.

Main syndromes: bronchial obstruction syndrome, pulmonary consolidation syndrome, pleural effusion syndrome, pulmonary cavity syndrome, pulmonary hyperinflation syndrome, respiratory failure syndrome, atelectasis, and pneumothorax.

Topic 4. Instrumental methods of investigation in pulmonology

Diagnostic value, indications, contraindications, and interpretation of the results of instrumental investigations: radiography and fluoroscopy, transthoracic and endobronchial ultrasonography, CT, MRI. CT angiography, PET, perfusion scintigraphy, thoracoscopy and pleuroscopy, thoracocentesis, bronchoscopy, bronchoalveolar lavage, pulmonary angiography, biopsy, and functional investigations (spirometry, body plethysmography, measurement of the diffusing capacity of the lungs, peak flowmetry, pulse oximetry, and arterial blood gas analysis).

Topic 5. Rational pharmacotherapy for respiratory diseases

Clinical pharmacological characteristics of antibacterial, antifungal, bronchodilator, and mucolytic, as well as inhaled and systemic glucocorticoids. Selection of drugs according to the clinical situation and current clinical guidelines. Classification, mechanisms of action, pharmacokinetics, pharmacodynamics, indications, contraindications, adverse reactions, drug interactions, and principles of rational use.

4. Structure of the academic discipline

Names of content modules and topics	Number of hours					
	Full time education					
	Total	including				
		l	p	lab.	ind.	s-s.w.
1	2	3	4	5	6	7

Topic 1. Main symptoms and syndromes in rheumatology	18		6			12
Topic 2. Instrumental methods of investigation in rheumatology	18		6			12
Topic 3. Main symptoms and syndromes in pulmonology	18		6			12
Topic 4. Instrumental methods of investigation in pulmonology	18		6			12
Topic 5. Rational pharmacotherapy for respiratory diseases Differential credit	18		6		1	11
Total number of hours	90		30		1	59
						60

5. Topics of lectures

№	Name of the topic	Number of hours
1	—	—
2		

6. Topics of seminars

№	Name of the topic	Number of hours
1	—	—
2		

7. Topics of practical lessons

№	Name of the topic	Number of hours
1.	Main symptoms and syndromes in rheumatology	6
2.	Instrumental Investigations in Rheumatology	6
3.	Main symptoms and syndromes in pulmonology	6
4.	Instrumental research methods in pulmonology	6
5.	Rational pharmacotherapy for respiratory diseases Differential credit	6

Total	30
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8. Topics of laboratory lessons

№	Name of the topic	Number of hours
1	—	—
2		
...		

9. Self-study work

№	Name of the topic	Number of hours
1.	Preparation on the topic of practical lesson №1 “Main symptoms and syndromes in rheumatology”.	12
2.	- Preparation on the topic of practical lesson №2 “Instrumental methods of investigation in rheumatology”. - Interpretation of the findings of instrumental investigations (radiographs of the joints and spine).	12
3.	Preparation on the topic of practical lesson № “Main symptoms and syndromes in pulmonology”.	12
4.	- Preparation on the topic of practical lesson №4 “Instrumental methods of investigation in pulmonology”. - Interpretation of the results of instrumental investigations (spirometry and chest radiographs).	12
5.	Preparation on the topic of practical lesson №5 “Rational pharmacotherapy for diseases of the respiratory organs”.	11
6.	Individual tasks.	1
Total		60

10. Individual tasks

- Report at clinical conferences of department bases
- Presentation of medical history at a practical session
- Writing theses, articles.

Methods of teaching

According to the source of knowledge: verbal methods (explanation, lectures, discussions, educational dialogue, and storytelling); visual methods (illustration and demonstration); practical methods (practical lessons, acquisition and practice of practical skills); and independent work with textbooks and other learning resources.

According to the logic of presentation of educational material: analytical, synthetic, analytical-synthetic, inductive, deductive, and transductive methods.

According to the level of students' cognitive activity: explanatory-illustrative, reproductive, problem-based, partially exploratory (heuristic), research methods, and the problem-presenting method.

Interactive teaching methods: role-playing, small-group (team-based) learning, the case method (case-based learning), creative assignments, interactive educational video courses, participation in medical conferences and multidisciplinary case conferences, brainstorming, discussions, and simulation-based learning.

Distance learning methods: learning using modern educational platforms and digital educational resources (LIKAR.NMU platform, Zoom, Skype, Google Classroom, etc.).

12. Methods and forms of control, distribution of points awarded to students and evaluation

Methods of control: oral (oral questioning, interview), written, test-based, practical (assessment of practical skills and competencies), computer-based (programmed) control, control of individual assignments, and self-control.

The system of assessing students' knowledge of the discipline includes current and final control of knowledge, evaluation of the results of practicals, certification of students of higher education according to the "Medicine" educational level.

Current education

When organizing education under the credit-transfer system of education, the session-module control is used, which provides for the following types of control:

Initial knowledge control is intended to determine students' baseline knowledge of related disciplines that is required for successful study of the academic discipline. The results of the initial knowledge control are not taken into account in the student's ongoing assessment, as they are intended solely for diagnostic and informational purposes for the teacher.

Current control provides for 100% oral questioning of all students in the group during each practical lesson, with mandatory evaluation of all components of the lesson, including test control, solving case-based tasks, description of medicinal products, and other required activities. Each practical lesson also includes control of practical skills. For each stage of the lessons and each component of current control, the student receives a traditional grade of: "5", "4", "3", or "2". Based on these grades, the teacher calculates the arithmetic mean grade for the lesson, which is converted into points according to the grading scale (distribution) specified in the Programme of the Academic Discipline, Mastering and approved before the beginning of the course. If a student receives Grade "2" (Unsatisfactory), it is converted into 0 points.

A student has the right to improve his or her knowledge and practical skills in the topic for which the overall Grade "2" (Unsatisfactory) and, accordingly, 0 points were received during the next practical lesson as part of the current control procedure, in accordance with the departmental regulations, without being awarded additional points.

The following are also subject to evaluation:

- written assignments provided for in the academic discipline programme;
- topics designated for self-study outside scheduled class hours.

Departments may also award additional points for participation in and winning prize places at international, national, and other Olympiads in the academic discipline.

After the lesson, the teacher announces the students' average grade.

The total number of points accumulated by the student during current study constitutes a component of the overall grade for the academic discipline in accordance with the forms of final knowledge control. The maximum number of points that may be accumulated through current control is 200 points.

Points for the evaluation of the student's individual work are awarded within the maximum number of points allocated for current control, namely within the 80-point limit, as determined by the department.

The total number of points awarded for current control, taking into account the evaluation of all types of learning activities (classroom activities, individual work, and lecture attendance), shall not exceed 80 points. The final score for current learning activities is determined as the arithmetic sum of the points awarded for each practical lesson.

During the evaluation of each module topic, the student is awarded grades according to both the 4-point (traditional) grading scale and the multi-point grading scale, using the approved assessment criteria established for the academic discipline. All types of learning activities specified in the methodological guidelines for the topic are taken into account. The student must receive a grade for each topic. Grades awarded according to the traditional grading scale are converted into points.

The grades awarded according to the traditional grading scale are converted into points depending on the number of topics included in the module. The number of points corresponding to Grade "5" is calculated by dividing the maximum number of points allocated for current learning activities (200 points) by the number of practical lessons. The number of points corresponding to Grade "3" is calculated as 60% of the maximum number of points allocated for current learning

activities (i.e., 48-50 points), divided by the number of practical lessons. The weighting of each topic within a module, expressed in points, shall be identical.

The forms of evaluation of current learning activities shall be standardised and shall include control of both theoretical knowledge and practical training.

Distribution of Points Received by Students

The current educational activity and independent work*		Total
Traditional scale	Conversion into points	
T1-T5		Maximum 200 points
5	40	
4	32	
3	24	
2	0	

Note. * –50% of the points are allocated to self-study (for each topic).

Final Control

Final control is intended to determine the level of knowledge and skills acquired by students. It is conducted upon completion of the academic discipline and includes control of both theoretical knowledge and practical training. The types of final control include final assessment and certification of higher education students.

Students are admitted to the final control in the academic discipline provided that they have attended at least 75% of classroom-based learning activities (lectures, seminars, laboratory lessons, and practical lessons) and have accumulated all the required points during the study of the academic discipline.

If a student has attended less than 75% of the scheduled classroom hours (i.e., has missed 25% or more of the lessons), the student shall be considered as having failed to fulfil the academic programme and curriculum requirements for the academic discipline and, therefore, must repeat the academic discipline.

Differentiated credit is a form of final assessment that consists of evaluating the assimilation of the subject material by students based on the results of current learning, individual assignments and tests.

When assigning a grade for a discipline, the number of points accumulated by the student for current learning is taken into account (the maximum number of points is 200). The discipline is credited to the student on a differentiated basis in accordance with the total number of points accumulated by them, which must be no less than the minimum required and corresponds to the minimum grade E, and therefore amounts to 111 points.

When a differentiated credit is awarded for a discipline, the higher education applicant is given the right to retake unsatisfactory grades no later than three days (cycle system – one day) before the final control in order to accumulate the minimum number of points for crediting the discipline.

The department does not conduct a differentiated credit in the form of a separate lesson.

The results of the differentiated credit are evaluated using a 200-point knowledge assessment system adopted by the University and the national scale, and are reflected in the relevant checklist.

Forms of control: initial knowledge control, current control, intermediate control, and final control.

Assessment of knowledge in the discipline is carried out using the appropriate scale:

Points	National grading scale	ECTS grading scale	
		Grade	Description
170-200	Excellent	A	Excellent (excellent performance with only a small number of errors)
155-169	Good	B	Very good (above-average with several errors)
140-154		C	Good (generally correct performance with a certain number of significant errors)

125-139	Satisfactory	D	Satisfactory (fair performance, but with a significant number of shortcomings)
111-124		E	Sufficient (performance satisfies minimum criteria)
60-110	Unsatisfactory	FX	Unsatisfactory (with the possibility of resit)
1-59		F	Unsatisfactory (with mandatory repetition of the academic discipline)

Procedure for eliminating academic debt

If a student does not earn the minimum number of points corresponding to a satisfactory ECTS grade of “E” during the current assessment period under a differentiated assessment system, and has earned 111 points, then they automatically receive an unsatisfactory grade and the course is considered failed, and credits are not awarded accordingly.

If a student receives an unsatisfactory grade in a subject within the range of 6-110 points (FX) or 1-59 points (F), they have the right to retake the subject twice: once before a departmental commission with the participation of the head of the department, and the last time – by a commission with the participation of the head of the department and the dean. If an unsatisfactory grade is received in a discipline, the higher education applicant is obliged to retake it outside of class time on a paid basis.

NB! A differentiated credit that has not been counted is retaken as an exam and a PC – twice. During the retake, the student is given test questions covering all topics included in the course syllabus. Upon passing the credit tests, the student receives a grade of E with a minimum number of points, namely 111 points.

Retakes of subjects with unsatisfactory grades are conducted according to a schedule drawn up by the department and agreed with the dean (the interval between attempts or subjects is at least 3 days).

The results of other subjects do not affect the possibility of a student taking a differentiated credit for a specific subject.

Means of diagnosing learning achievement: test items, questions for oral control, written assignments, case-based (clinical) tasks, control of practical skills using checklists, analysis and interpretation of laboratory and instrumental investigation results, individual assignments, results of students' self-study work.

13. Methodological support

1. Online course on the LIKAR_NMU Distance Learning Platform
2. Course teaching materials
3. Methodical recommendations for practical lessons for students and educational video materials
4. Methodical recommendations for students' independent study
5. Algorithms for performing practical skills and medical procedures
6. Standardised laboratory and instrumental investigation results
7. Simulators, models, phantoms, etc
8. Electronic learning content for the course
9. Workbooks for practical lessons topics
10. Tests, clinical case scenarios, and type A test items for current and final control of knowledge and practical skills.

Recommended literature

Core

1. Внутрішні хвороби. У 2 частинах. Частина 1. Розділи 1-8: підручник / Л.В.Глушко, С.В.Федоров, І.М. Скрипник та ін. За ред. проф. Л.В.Глушка. – 2-е видання. К.: ВСВ «Медицина», 2022. – С. 34-129, 321-416.
2. Методичні розробки до практичних занять для студентів 4 курсу вищих медичних закладів, змістовний модуль №3, «пульмонологія». – Київ, 2024. – 89 с.

3. Клінічна фармакологія: навч. пос. / М.В. Хайтович, Г.В. Зайченко, І.О. Афанасьєва та ін.; за редакцією М.В. Хайтовича та Г.В. Зайченко. – К.: ВСВ «Медицина», 2024. – 335 с.

4. Ревматичні хвороби. Класифікація, стандарти діагностики та лікування / за ред. В.М.Коваленка. Київ: Четверта хвиля, 2025. – 528 с.

5. Стандарт медичної допомоги. Раціональне застосування антибактеріальних і антифунгальних препаратів з лікувальною та профілактичною метою. Наказ МОЗ України № 1513 від 23.08.2023 «Про затвердження Стандарту медичної допомоги «Раціональне застосування антибактеріальних і антифунгальних препаратів з лікувальною та профілактичною метою».

6. Уніфікований клінічний протокол первинної, спеціалізованої та екстреної медичної допомоги «Хронічне обструктивне захворювання легень» від 20.09.2024 №1610.

7. Уніфіковані (для кафедр внутрішньої медицини No1-4) методичні розробки для практичних занять з дисципліни «Внутрішня медицина (в т.ч. клінічна фармакологія, медична генетика, клінічна імунологія та алергологія, професійні хвороби)» українською мовою для студентів 5 курсу медичних факультетів. Київ, 2022. – С. 287-406.

8. Loscalzo J, Fauci AS, Kasper DL, Hauser SL, Longo DL, Jameson JL, editors. *Harrison's Principles of Internal Medicine*. 21st ed. Vol. 1-2. New York: McGraw Hill; 2022. P. 263-274, 1009-1021, 2131-2216, 2844-2880.

9. Penman ID, Ralston SH, Strachan MWJ, Hobson RP, editors. *Davidson's Principles and Practice of Medicine*. 24th ed. London: Elsevier; 2023. P. 479-556, 969-1062.

Additional

1. Пропедевтика внутрішньої медицини. Частина 1. Основні методи обстеження хворих в клініці внутрішніх хвороб / За ред. Нетяженка В.З. – К.: Фенікс, 2024. – 552 с.

2. Фармакологія за Рангом і Дейлом: 9-е видання: у 2 томах. Том 1 / Джеймс М. Ріттер, Род Флавер, Грем Гендерсон, Юн Конг Лоук, Девід Мак'юен, Гамфрі П. Ранг/ - К.: ВСВ «Медицина», 2022. – С. 215-233, 241-253, 285-287, 443-455.
3. Фармакологія за Рангом і Дейлом: 9-е видання: у 2 томах. Том 2 / Джеймс М. Ріттер, Род Флавер, Грем Гендерсон, Юн Конг Лоук, Девід Мак'юен, Гамфрі П. Ранг/ - К.: ВСВ «Медицина», 2022. – С. 202-213, 216-228, 250-253.
4. Хронічне обструктивне захворювання легень. Клінічна настанова, заснована на доказах, 2024, 247 с.
5. Hochberg MC, Gravallese EM, Smolen JS, van der Heijde D, Weinblatt ME, Weisman MH, editors. *Rheumatology*. 8th ed. Philadelphia: Elsevier; 2023. 2128 p.
6. Firestein GS, McInnes IB, Koretzky G, Mikuls T, Neogi T, O'Dell JR, editors. *Firestein & Kelley's Textbook of Rheumatology*. 12th ed. Philadelphia: Elsevier; 2025. 2496 p.
7. Weinberger SE, Cockrill BA, Mandel J. *Principles of Pulmonary Medicine*. 8th ed. Philadelphia: Elsevier; 2024. 448 p.

Recommended Online Resources

1. https://www.eular.org/recommendations_management.cfm
2. https://dec.gov.ua/cat_mtd/galuzevi-standarti-ta-klinichni-nastanovi/
3. <https://goldcopd.org/>
4. <https://www.ersnet.org/>
5. <http://www.ers-education.org/guidelines.aspx>
6. <https://www.nice.org.uk>
7. <https://www.msdmanuals.com/uk/professional>
8. <http://www.oxfordmedicaleducation.com/medicine/>
9. <https://www.rheumatology.org>

10. Компендіум: лікарські препарати. – [Електронний ресурс]. – Режим доступу: <http://compendium.com.ua/>
11. Фармацевтична енциклопедія. – [Електронний ресурс]. – Режим доступу: <https://www.pharmencyclopedia.com.ua/>