

DANYLO HALYTSKY LVIV NATIONAL MEDICAL UNIVERSITY

**Department of Internal Medicine N 1
Department of Internal Medicine N 2**



Approved

First Vice-Rector for scientific and pedagogical work

Assoc. prof. Iryna SOLONYNKO

“ 30 ” “ 08 ” 2023

**WORK PROGRAMME OF THE EDUCATIONAL DISCIPLINE
"PRACTICE IN SIMULATION MEDICINE: INTERNAL MEDICINE"
INDIVIDUAL PROFESSIONAL COURSE "INTERNAL MEDICINE"**

ББ 2.11.

6 years of study

training of specialists of the second (master's) level of higher education

Field of Knowledge 22 "Health care"

specialties 222 "Medicine"

Discussed and approved
on the methodical meetings
of the Departments of
Internal Medicine N 1 and
Internal Medicine N 2
protocol N 9
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Approved
by the Profile Methodical Council
on the therapeutic disciplines
protocol N 3 dated 04.05.2023

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Lviv – 2023

The work programme of the discipline “Practice in Simulation Medicine: Internal Medicine” (SC 2.11.) 6 year for the training of specialists of the second level of higher education (master of medicine) the field of knowledge 22 “health care” specialty 222 “medicine” was composed by the staff of the department of internal medicine no 2 Danylo Halytsky Lviv National Medical University: the head of the department, associate professor Orest Komarytsya; professor Olena Radchenko, associate professor Olga Korolyuk, associate professor Anzhelika Filipyuk, associate professor Olena Sorokopud, and assistant professor Oksana Slaba

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The work programme was discussed and approved by the Profile Methodical Council of therapeutic disciplines Danylo Halytsky Lviv National Medical University

Changes and additions to the work programme for 2023-2024 academic year

No	Contents of changes (additions)	Date and protocol number of the meeting	Notes
1.	The code has been changed from OC 25 to SC 2.11. in accordance with the requirements of the EPP (Educational and professional programs) 2023/2024	May 3, 2023 Protocol No 10	
2	The form of final control has been changed from differential credit to credit	May 3, 2023 Protocol No 10	

Head of the Department of Internal Medicine No 2

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INTRODUCTION

The work programme of the discipline “Practice in Simulation Medicine: Internal Medicine” (SC 2.11.) 6 year for the training of specialists of the second level of higher education Master of medicine the field of knowledge 22 “Health Care” specialty 222 “Medicine” specialization “Internal Medicine” was composed basing on the Law of Ukraine “About Higher Education”, “The procedure for training applicants for higher education Magister of Medicine in higher primary institutions”, Standard of high education – Magister of Medicine branch of knowledge 22 “Health Care”, Specialty 222 “Medicine” (the Order of the Ministry of Education and Science of Ukraine dated November, 8, 2021); the Order of the Ministry of Education and Science of Ukraine No 1254 dated 01.10.2019 “On amendments to the Guidelines for the development of standards of higher education”; the Order of Danylo Halytsky Lviv National Medical University dated March, 15, 2022 “On the introduction of the curriculum for the preparation of applicants for the second (master's) level of higher education in the specialty 222 Medicine”.

Description of the discipline (abstract). During the 6th year of study the programme of "Internal Medicine" covers the study of the main etiologist, pathogenic mechanisms, prevalence, clinical presentation, diagnosis and treatment of internal diseases, particular gastrointestinal, respiratory, cardiovascular, renal, haematological and rheumatic diseases. The main emphasis is to consolidate the essentials of clinical examination of the patient, particularly recognition of the main symptoms and syndromes of internal diseases, diagnostic approach to their assessment, the methodology of physical examination of the patient with syndromic assessment of the obtained results; interpretation of the results obtained after additional tests (e.g., laboratory tests, functional tests, imaging studies, etc.). Another important goals are improvement of the skills of differential diagnosis, using principles of syndromes and nosology, and enhancement of knowledge about the main principles of treatment, long-term management, and prophylaxis of internal diseases.

The structure of the discipline The discipline is the part of the educational program for the preparation of masters of medicine and is designed for 3 ECTS credits (90 hours)

The structure of educational discipline	Number of credits, hours, particularly				Year of study, semester	Type of control
	Totally	Classroom		IWS		
		Lectures	Practical classes			
«Internal medicine»	3 credits/ 90 hours	0	35 hours	55 hours	6 year (XI or XII semester)	credit

The subject approaches to the examination and treatment tactics of an individual patient with a threatening or urgent condition in internal medicine

Internal medicine as academic discipline

- a) is based directly on the knowledge of propaedeutic of internal medicine, along with knowledge of propaedeutic of paediatrics, general surgery, and basic disciplines (i.e., medical biology, medical and biological physics, bioorganic and biological chemistry, histology, cytology and embryology, human anatomy, pathomorphology, physiology and pathophysiology, microbiology, virology and immunology, radiology) and integrates with these disciplines;
- b) lays the foundation for students' assimilation of knowledge in specialized clinical professional-practical disciplines.
- c) forms the ability to apply knowledge about internal diseases into the process of further education and professional activity in accordance with the principles of evidence-based medicine

Interdisciplinary links: normal anatomy, normal physiology, pathology, pathophysiology, histology, biochemistry, pharmacology, clinical pharmacology, propaedeutic of internal medicine, patient care, infectious diseases, pathophysiology, oncology, general surgery, radiology and radiation medicine, microbiology, virology and immunology.

1. The purpose and objectives of the discipline

1.1. The purpose of study the educational discipline “Practice in Simulation Medicine: Internal Medicine” is established on the basis of educational qualification characteristics (EQC) and the educational study program (ESP) for training of a specialist (doctor). The description of goals was formulated through skills in the form of target tasks/actions by certain lists of emergencies and diseases, requiring specific management. Based on the final goal, specific goals are formulated in the form of certain skills/actions, target tasks that ensure the achievement of the final goal of studying the discipline.

1.2. Objectives (tasks)

- To analyse typical clinical presentation of the common internal diseases mentioned in the EQC list 1
- To identify atypical presentations and complications of these diseases
- To make differential diagnosis by the syndrome and nosology, substantiate and formulate a preliminary diagnosis
- To determine management of patient with emergency aid in case of severe exacerbation or complication and appropriate recommendations regarding activity, diet, pharmacotherapy, rehabilitation
- To compose examination plan for a patient with medical urgency or emergency, to interpret and analyse the obtained results of laboratory tests, imaging and functional studies
- To assess the prognosis in case of complications of common internal diseases
- To provide appropriate medical care and management for urgencies and emergencies that may occur in internal diseases
- To perform medical manipulations mentioned in the EQC list 5
- To follow ethical and deontological principles of a medical specialist and the principles of professional subordination

1.3. Competences and learning outcomes, the formation of which is facilitated by the discipline (relationships with the normative content of the training of higher education applicants, formulated in terms of learning outcomes in the EPP and in the Higher Education Standard).

General competencies (GC):

1. Ability to abstract thinking, analysis and synthesis.
2. Ability to learn and master modern knowledge.
3. Ability to apply knowledge in practical situations.
4. Knowledge and understanding of the subject area and understanding of professional activity.
5. Ability to adapt and act in a new situation.
6. Ability to make reasoned decisions.
7. Ability to work in a team.
8. Ability to interpersonal interaction.
9. Ability to use information and communication technologies.
10. Ability to search and analyse information from various sources.
11. Definiteness and perseverance in terms of tasks and responsibilities
12. Awareness of equal opportunities and gender issues.
13. Ability to realize rights and responsibilities as a society member, realize the values of free democratic civil society and the need for its sustainable development, the supremacy of law, the rights and freedoms of people and citizens.
14. Ability to preserve and multiply the moral, cultural, scientific valuables and acquisitions of society based on an understanding of the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and the development of society, techniques and technologies, to use various types and forms of motor activity for active rest and leading a healthy lifestyle.

Professional competencies (PC):

1. Ability to collect medical information about a patient and analyse clinical data.
2. Ability to determine the necessary list of laboratory and instrumental studies and to evaluate obtained results.
3. Ability to make preliminary and clinical diagnoses
4. Ability to determine the necessary regimen of rest and activity in the treatment and prevention of internal diseases.
5. Ability to determine type of diet and nutrition in the treatment and prevention of internal diseases.
6. Ability to determine the principles of treatment and prevention of internal diseases.
7. Ability to diagnose medical urgencies and emergencies.
8. Ability to determine emergency management and to provide emergency medical aid.
9. Ability to perform medical evacuation measures.
10. Ability to perform medical manipulations.
11. Ability to solve medical problems in a new or unfamiliar environment, in case of incomplete or limited information, considering aspects of social and ethical responsibility.
12. Ability to perform medical record documentation, including electronic forms.
13. Ability to convey own knowledge, conclusions and arguments about health care problems and related issues to specialists and non-specialists, in particular to people who are studying, clear and unambiguous
14. Adherence to ethical principles during work with patients or laboratory animals.
15. Adherence to professional and academic integrity, responsibility for the reliability of the obtained scientific results.

Program learning outcomes (PLO)

1. Thorough knowledge about the structure of professional activity and ability to perform professional activities requiring updating and integration of knowledge, realization of responsibility for professional development and further professional training with a high level of autonomy.
2. Knowledge and understanding of fundamental and clinical biomedical sciences at a level sufficient for solving professional tasks in the field of health care.
3. Specialized conceptual knowledge including scientific achievements in the field of health care, ability to conduct researches, critical understanding of problems in the field of medicine and related interdisciplinary problems.
4. Highlighting and identifying leading clinical symptoms and syndromes mentioned in the EQC list 1; formulation of preliminary diagnoses of common internal disease mentioned in the EQC list 2, using data from the patient's history, physical examination, and knowledge about human organs and systems.
5. Diagnoses formulation of internal diseases mentioned in the EQC list 4, taking into account the age and gender, patient's complaints, history of life and disease, evaluation of psychomotor and physical development, vital signs, physical examination of internal organs and systems, and results of additional tests.
6. Reasonable formulation of final clinical diagnosis EQC list 2 with differential diagnosis after analysis of the received subjective and objective data of physical examination and additional tests; implementation of relevant ethical and legal norms, working under the supervision of a managing physician in the conditions of a health care facility.
7. Planning and interpretation of the results of additional tests (laboratory, functional, imaging etc.) mentioned in the EQC list 4 for patients with internal diseases mentioned in the EQC list 2.
8. Determination the leading clinical syndrome and establishment of factors determining severity of victim's / patient's condition with a reasonable decision and assessing the person's condition in any situation mentioned in EQC list 3 and in any case (i.e., in out- or in-patient setting, out of health care facility, including situations of emergencies, lack of information or limited time).
9. Determination way and principles of treatment for patients with diseases listed in the EQC list 2, taking into account age and gender, in- or out-patient setting or extremal situations (including stages of medical evacuation) depending

- on previously established clinical diagnosis and according to existing algorithms, standards, ethical and legal norms. Substantiation of personalized recommendations under the control of the head physician of a medical institution.
10. Determination of rest and activity regimens, diet, nutrition, patient's ability to work, basing on the preliminary and/or final clinical diagnosis, following existing algorithms and standards and relevant ethical and legal norms
 11. Determination tactics and providing urgent medical care in emergencies listed in the EQS list 3, including situations with limited time, in accordance with existing clinical standards and protocols.
 12. Creation of rational medical routes for patients; organization of interaction with colleagues (including those in other hospitals, institutions or organizations), applying tools for the promotion of medical services in the market based on the analysis of the needs of the population.
 13. Performing medical manipulations mentioned in the EQS list 5 in the inpatient or outpatient setting depending on previously established diagnosis and/or specific indications with reasoned decision following existing clinical standards and protocols, relevant ethical and legal norms.
 14. Determination patient's functioning state or professional suitability, disability, duration of incapacity with the preparation of relevant medical documents basing on clinical diagnosis and course of the disease.
 15. Development and implementation of anti-epidemic or preventive measures for different diseases at individual or population level.
 16. Purposeful search for information in the professional literature and databases, analysis, evaluation and adequate use of the obtained information.
 17. Use of modern digital technologies, specialized software, statistical methods of data analysis to solve complex problems of health care and research work.
 18. Clear and unambiguous transfer of own knowledge, conclusions and arguments about health care problems and related issues to specialists and non-specialists.
 19. Management of healthcare work problems that can be complex, unpredictable and require new strategic approaches; organization of work and professional development of personnel taking into account the acquired skills of effective team work with adherence to leadership positions, appropriate quality, accessibility and fairness, ensuring the provision of integrated medical care.
 20. Free communication using native language or English (in oral or writing form) to discuss professional activities, research and projects.
 21. Effective decisions on health care issues, assessing the necessary resources and taking into account social, economic and ethical consequences.

Matrix of competencies

No	Competency	Kn ^a	Sk ^b	Co ^c	AR ^d
1	2	3	4	5	6
General competencies (GC)					
GC1	Ability to abstract thinking, analysis and synthesis.	Kn-1	Sk-1	Co-1	AR-1
GC2	Ability to learn and master modern knowledge.	Kn-1	Sk-3	Co-2	AR-3
GC3	Ability to apply knowledge in practical situations.	Kn-1	Sk-2	Co-1	AR-1
GC4	Knowledge and understanding of the subject area and professional activity.	Kn-2	Sk-2	Co-2	AR-2
GC5	Ability to adapt and act in a new situation.		Sk-3		AR-2
GC6	Ability to make reasoned decisions.	Kn-1	Sk-3	Co-1	AR-1
GC7	Ability to work in a team.	Kn-2	Sk-3	Co-1	AR-2
GC8	Ability to interpersonal interaction.	Kn-1	Sk-3	Co-1	AR-2
GC10	Ability to use information and communication technologies.	Kn-2	Sk-3	Co2	AR-3
GC11	Ability to search and analyse information from various sources.	Kn-2	Sk-2	Co2	AR-2
GC12	Definiteness and perseverance in terms of tasks and responsibilities	Kn-2	Sk-3		AR-3
GC13	Awareness of equal opportunities and gender issues.	Kn-2	Sk-1	Co-1	AR-1
GC14	Ability to realize rights and responsibilities as a member of society, realize the values of civil free democratic society and the need for its sustain development, the supremacy of law, the rights and freedoms of people and citizens.	Kn-1	Sk-2	Co-1	AR-3
GC15	Ability to preserve and multiply the moral, cultural, scientific valuables and acquisitions of society based on an understanding of the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society, the development of society, techniques and technologies; usage various types and forms of motor activity for active rest and healthy lifestyle	Kn-2	Sk-3		AR-3

Professional competencies (PC)					
1	2	3	4	5	6
PC1	Ability to collect medical information about a patient and analyse clinical data.	Kn-2	Sk-3	Co-2	AR-3
PC2	Ability to determine the necessary list of laboratory and instrumental studies and to evaluate obtained results	Kn-2	Sk-3		AR-1
PC3	Ability to make preliminary and clinical diagnoses	Kn-2	Sk-3		AR-2
PC4	Ability to determine the necessary regimen of rest and physical activity in the treatment and prevention of internal diseases	Kn-2	Sk-2	Co-1	AR-1
PC5	Ability to determine type of diet and nutrition in the treatment and prevention of internal diseases.	Kn-2	Sk-1	Co-1	AR-1
PC6	Ability to determine the principles of treatment and prevention of internal diseases.	Kn-2	Sk-3	Co-1	AR-1
PC7	Ability to diagnose medical urgencies and emergencies	Kn-2	Sk-3	Co-1	AR-2
PC8	Ability to determine emergency management and to provide emergency medical aid.	Kn-2	Sk-3	Co-1	AR-2
PC9	Ability to perform medical evacuation measures	Kn-2	Sk-2	Co-1	AR-2
PC10	Ability to perform medical manipulations.	Kn-1	Sk-3	Co-1	AR-1
PC11	Ability to solve medical problems in a new or unfamiliar environment, incomplete or limited information, considering aspects of social and ethical responsibility	Kn-2	Sk-3	Co-1	AR-2
PC16	Ability to perform medical record documentation, including electronic forms	Kn-2	Sk-3	Co-1	AR-1
PC21	Ability to convey own knowledge, conclusions and arguments about health care problems and related issues to specialists and non-specialists, in particular to people who are studying, clear and unambiguous	Kn-2	Sk-3	Co-2	AR-2
PC24	Adherence to ethical principles during work with patients or laboratory animals.	Kn-1	Sk-2	Co-1	AR-1
PC25	Adherence to professional and academic integrity, responsibility for the reliability of the obtained scientific results.	Kn-2	Sk-2	Co-2	AR-3
Integral competency					
The ability to solve typical and complex specialized tasks and practical problems in professional activities in the field of health care, or during learning process that involves research conduction and/or implementation of innovations, and is characterized by the complexity and uncertainty of conditions and requirements.		Kn-2	Sk-2	Co-2	AR-3

Notes: ^aKn = Knowledge; ^bSk = Skill; ^cCo = Communication; ^dAR = Autonomy and responsibility

Program learning outcomes

Learning outcome code	The content of the learning outcome	Reference to the competence matrix code
Kn-1	To know anatomy, physiology of internal organs and systems, skin, skeleton, connective tissue, and blood	PLO-1-5
Kn-2	To know pathomorphology and pathophysiology of common internal diseases	PLO-1-5
Kn-3	To know the biochemistry of major metabolic processes, mechanisms of action of the main classes of medications	PLO-4,8
Kn-4	To know characteristics of the pathogens that may cause internal diseases and the basics of epidemiology	PLO-1-4
Kn-5	To know the methods of evaluation of integrated health indicators; environmental factors; system of preventive measures; socioeconomic and biological determinants of health, methods for doctor's activity assessment	PLO-9-16
Sk-1	To interview complaints and medical history, to perform physical examination	PLO-1
Sk-2	To evaluate obtained results of additional tests	PLO-2
Sk-3	To perform basic medical manipulations	PLO-7,9
Co-1	To highlight the leading symptoms and syndromes. To diagnose the disease. To plan necessary additional tests. To make differential diagnosis.	PLO-3-5,7,10
Co-2	To determine diet / plan of nutrition, to plan preventive strategies and tactics.	PLO-3-5
Co-3	To administer treatment and to determine its duration.	PLO-6-8
Co-4	To diagnose emergencies and to determine the tactics of emergent medical care.	PLO-7-9
Co-5	To determine health indicators; environmental factors; preventive measures; determinants of health, efficiency of doctor's activity and quality of medical care	PLO-9-16
AR-1	To organize the work of medical staff; to form rational medical routes of patients; to interact with colleagues, organizations and institutions.	PLO-14-16
AR-2	To guide by rights, freedoms and responsibilities. To improve professional level. To adhere to the requirements of ethics, bioethics and deontology.	PLO-14-16
AR-3	To form the purposes and structure of personal activity. To adhere to a healthy lifestyle and self-control.	PLO-14-16

Notes: Kn = Knowledge; Sk = Skill; Co = Communication; AR = Autonomy and responsibility; PLO = Program learning outcomes

2. The format and scope of the discipline

The format of the course (full-time or distance learning)	Full-time	
Type of training sessions	Number of hours	Number of groups
lectures	0	
practical classes (practices)	35	
seminars	0	
individual work of students (IWS)	55	

3. Structure of the discipline

Thematic plan	Lectures	Practices	IWS
Topic 1 Treatment, management, and curation of patients with hypertensive urgencies, hypertensive emergencies, acute left ventricular failure, pulmonary oedema		7	7
Topic 2 Treatment, management, and curation of patients with acute coronary syndrome, acute myocardial infarction, cardiogenic shock		7	7
Topic 3 Treatment, management, and curation of patients with pulmonary embolism		7	7
Topic 4 Acute management of patients with sudden cardiac death. Treatment, management, and curation of patients with paroxysmal arrhythmias and acute heart blocks		7	7
Topic 5 Treatment, management, and curation of patients with pneumothorax, acute complications of peptic ulcer, acute gastrointestinal bleeding. Credit		7	7
Total number of hours 90 / 3 ECTS credits	0	35	35+15
Summary control	Credit		

4. Thematic plan of lectures

According to the Order 881-z dated 15.03.2022 "On the implementation of the training plan for applicants of the second (master's) level of higher education in the specialty 222 "Medicine" (Appendix 1) lectures are not provided.

5. Thematic plan of practical classes

No	Subject	Hours
1.	Treatment, management, and curation of patients with hypertensive urgencies, hypertensive emergencies, acute left ventricular failure, pulmonary oedema	7
2.	Treatment, management, and curation of patients with acute coronary syndrome, acute myocardial infarction, cardiogenic shock	7
3.	Treatment, management, and curation of patients with pulmonary embolism	7
4.	Acute management of patients with sudden cardiac death. Treatment, management, and curation of patients with paroxysmal arrhythmias and acute heart blocks	7
5.	Treatment, management, and curation of patients with pneumothorax, acute complications of peptic ulcer, acute gastrointestinal bleeding. Credit	7
Total number of hours		35

6. Thematic plan of individual work of students

No	Subject	Hours
1.	Writing home self-training task on the topic "Treatment, management, and curation of patients with hypertensive urgencies, hypertensive emergencies, acute left ventricular failure, pulmonary oedema"	8
2.	Writing home self-training task on the topic "Treatment, management, and curation of patients with acute coronary syndrome, acute myocardial infarction, cardiogenic shock"	8
3.	Writing home self-training task on the topic "Treatment, management, and curation of patients with pulmonary embolism"	8
4.	Writing home self-training task on the topic "Acute management of patients with sudden cardiac death. Treatment, management, and curation of patients with paroxysmal arrhythmias and acute heart blocks"	8
5.	Writing home self-training task on the topic "Treatment, management, and curation of patients with pneumothorax, acute complications of peptic ulcer, acute gastrointestinal bleeding"	8
Total number of hours		40

7. Individual tasks

1. Presentation of a clinical case, an essay, or review of scientific literature related to the topic of practice.
2. Report at clinical conferences of the department, writing theses or scientific articles.
3. Mastering practical skills.
4. Writing of case report during the course of practical classes (15 hours).

8. Teaching methods

Practical, visual, verbal, work with a book, video method, interactive methods (business games, role-playing games, clinical cases), etc.

Interactive methods such as business games, role-playing games, and cases are used during practical classes. The organization of classes consists of the following blocks: program and information, education and methodical, control, educational research, and auxiliary.

The program and information block is presented on the official website of the University.

The educational and methodical block includes theoretical lecture materials (available on MISA platform), which are conducted with the use of multimedia presentations. Methodical materials for students and teachers are updated every year and are available both in printed form and electronic version (on MISA platform), which is given to students for individual work at home. The software "Chest pain" and a phantom of the human torso for cardiopulmonary resuscitation are also used. Educational and practical materials also include educational DVD-films about methodology of physical

examination etc., depending on the subject of classes (e.g., invasive diagnostic and therapeutic procedures in cardiology (angiography, stenting, shunting), atlases of clinical diagnosis, instrumental methods of examination etc.).

The control block contains materials for the current control of student activities (questions, MCQs, tests from the Licensing Exam "Step-2" base available for students on MISA platform).

The educational and research block contains topics of creative tasks, abstracts, educational and research tasks, term qualification works, etc. The department stores multimedia materials of student scientific-practical conferences of the medical faculty, which are examples and / or illustrative material for training, in addition, students have the opportunity to participate directly in procedures of echocardiography and ultrasonography of abdominal organs.

The auxiliary block is filled with video, audio, multimedia materials and electronic manuals, the materials of which can be processed on portable devices (phone, smartphone, netbook, book reader, etc.). To ensure the independent work of students, they are offered links to electronic resources that can be used.

Course policy In teaching and studying the course of Internal Medicine 5th year, all teachers and students adhere to the policy of academic integrity, intolerance to violations of medical and human deontology and ethics. Examination of patients at the clinical bases of the department complies with the principles of the Helsinki Declaration of the World Medical Association on ethical principles of scientific medical research with human participation (1964, 2004, 2013) and Orders of the Ministry of Health of Ukraine No 690 (2009), No 944 (2009) and No 616 (2012).

9. Control methods: oral, written, test, programmable, practical control, self-control.

Types of control: current and final.

The form of final control of study success: credit

Evaluation criteria Control measures include current and final control and certification of graduates.

10. Current control

Current control is performed during practical classes and is aimed checking the assimilation of educational material by students. Current control is based on a MCQ-assessment of the initial level of knowledge, checking writing home self-training task, and thematic practical work during the class. Practical work include clinical cases, examination of patients, writing examination protocols with formulation of diagnosis with rationale, writing and explanation of further diagnostic tests, estimation of the results of available tests in medical records, formulation of final clinical diagnosis and explanation of differential diagnosis, and administration of treatment and preventive measures for the patient.

Rating of each practice accounts all types of work provided by the programme using a 4-point national scale. The student must receive positive rating for each practical class. The forms of assessment of current educational activities are standard, and include control of theoretical and practical training.

Learning outcome code	Method of verifying learning outcomes Assessment criteria
For example: Kn-1-5, Sk-1-3, Co-1-5, AR-1-3	<p><i>The field defines the methods and technologies of assessment of students' knowledge, particularly, a list of all types of work that students are required to perform during practical class and the criteria for their assessment. For example, test control, protocol of patient's examination, demonstration of practical skills, etc. Each evaluation method must be described separately.</i></p> <p>Excellent ("5"): 90-100% answers for format A tests (10 MCQs, single best answer of 5 given answers) are correct; correct clear, complete and logical answers for the questions, including questions and tasks for individual work. Presence of qualitative and complete home task. A student closely links theory to practice and correctly demonstrates practical skills; able to solve clinical cases of increased complexity and to summarize the material. A student correctly conducts physical examination of a patient, demonstrating good communication skills and following the principles of medical deontology.</p> <p>Good ("4"): 70-89% answers for format A tests are correct; clear and right answers for the questions, including questions and tasks for individual work. There is a qualitative home task. A student correctly demonstrates practical skills or makes non-significant mistakes; able to solve typical clinical cases and cases of moderate complexity. A student correctly conducts physical examination of thematic patient, has the necessary practical skills, and makes no fatal mistakes during diagnosis and treatment. A student may communicate with patients and colleagues, using the principles of medical deontology.</p> <p>Satisfactory ("3"): 60-69% answers for format A tests are correct. Homework is incomplete or contains mistakes. Inadequate or incomplete answers for the questions about the current topic and individual work. A student cannot build a clear, logical answer; makes significant mistakes during answer or demonstration of practical skills; solves only easy typical clinical cases, has a minimum of necessary practical skills; performs examination and plan treatments with errors that do not threaten the patient's life; has a minimum of communication skills, uses the principles of medical deontology.</p> <p>Unsatisfactory ("2"): less than 60% answers for format A tests are correct. The home task is written very bad or is absent. A student does not know the material of the topic, cannot answer independently and logically to additional questions, does not understand the content of the material; makes significant mistakes during answer or demonstration of practical skills; conducts examination and plan treatment with fatal consequences for a patient; has insufficient communication or verbal skills; insufficiently uses the principles of medical deontology.</p>
Training code	
P-1-5, IWS-1-5	

11. The form of final control of study success

General rating system	Participation in the work during the semester (credit) on a 200-point scale
Rating scales	Traditional 4-point scale, multi-point (200-point) scale, ECTS rating scale
Admission criteria for final control	Attendance of all practical classes with total rating ≥ 120 points of 200 points

Type of final control	Methods of final control	Passing criteria
Credit	Positively estimated all practices with conversion from a 4-point scale to a 200-point scale as describe in "Criteria, rules and procedures for evaluating the results of student's learning activities"	Minimum rating 120 points; Maximum rating 200 points
Other types of control	The 6 th -year students take the Licensing Exam "Step-2" and a comprehensive practical-oriented qualification exam (CPOQE)	

12. Scheme of calculation and distribution of points received by students

Assessment is one of the final stages of educational activity and determination of educational success.

Evaluation is based on the amount for the Practice of Stimulation Medicine in Internal Medicine, Surgery, Obstetrics and Gynecology, Pediatrics. The calculation of the number of points is carried out on the basis of the grades received by the student on a traditional scale during the study of the discipline by calculating the arithmetic average (AA), which is converted into points on a multi-point scale, using formula: $x = AA \cdot 200 / 5$

For convenience, a calculation table is given on a 200-point scale for disciplines ending with a credit as follows:

Scale	4-p.	200-p.	4-p.	200-p.	4-p.	200-p.	4-p.	200-p.	4-p.	200-p.	4-p.	200-p.	Less than 3 Not enough
	5	200	4.67	187	4.32	173	3.99	160	3.67	147	3.32	133	
	4.97	199	4.65	186	4.3	172	3.97	159	3.65	146	3.3	132	
	4.95	198	4.62	185	4.27	171	3.94	158	3.62	145	3.27	131	
	4.92	197	4.6	184	4.24	170	3.92	157	3.57	143	3.25	130	
	4.9	196	4.57	183	4.22	169	3.89	156	3.55	142	3.22	129	
	4.87	195	4.52	181	4.19	168	3.87	155	3.52	141	3.2	128	
	4.85	194	4.5	180	4.17	167	3.84	154	3.5	140	3.17	127	
	4.82	193	4.47	179	4.14	166	3.82	153	3.47	139	3.15	126	
	4.8	192	4.45	178	4.12	165	3.79	152	3.45	138	3.12	125	
	4.77	191	4.42	177	4.09	164	3.77	151	3.42	137	3.1	124	
	4.75	190	4.4	176	4.07	163	3.74	150	3.4	136	3.07	123	
	4.72	189	4.37	175	4.04	162	3.72	149	3.37	135	3.02	121	
	4.7	188	4.35	174	4.02	161	3.7	148	3.35	134	3	120	

Points from the discipline are independently converted to both the ECTS scale and the 4-point scale. The points of the ECTS scale are not converted into a 4-point scale and vice versa. The points of students studying in one specialty, taking into account the number of points scored in the discipline, are ranked on the ECTS scale as follows:

ECTS assessment	Statistical parameter
"A"	Best 10 % of students
"B"	Next 25 % of students
"C"	Next 30 % students
"D"	Next 25 % students
"E"	The remaining 10% of students

Discipline scores for students who successfully completed the programme are converted into a traditional 4-point scale:

A multi-point (200) scale scoring	A 4-point scale scoring
From 170 to 200 points	"5"
From 140 to 169 points	"4"
From 139 to the minimum that must be scored by student	"3"
Below the minimum that must be scored by student	"2"

The ECTS score is not converted to the traditional scale, as the ECTS scale and the four-point scale are independent.

The objectivity of the assessment of students' learning activities is checked by statistical methods (correlation coefficient between ECTS assessment and assessment on a national scale).

13. Material, technical and methodological support of the discipline

1. Work programme and syllabus of the discipline.
2. Plans for practical classes and individual student's work.
3. Recommendations and guides for learning the course of internal medicine for students and teachers.
4. Tasks for independent work
5. Questions, tests (MCQs) and clinical cases for current control
6. Algorithms for treatment and emergency care according to the standards of evidence-based medicine
7. Algorithms for performing skills practices and medical manipulations
8. Results of laboratory tests; electrocardiograms, radiographs, lung function test results, etc.
9. Models, mannequins, multimedia equipment, presentations for training.

14. Recommended literature

1. eMPendium – electronic compendium "Internal diseases" in open access [Electronic resource]. Access mode: <https://empendium.com/mcmtextbook/>.
2. Davidson's Principles and Practice of Medicine 23rd Edition. Editors: Stuart Ralston, Ian Penman, Mark Strachan Richard Hobson. Elsevier. - 2018. - 1440 p.
3. Loscalzo J, Fauci A, Kasper D, Hauser S, Longo D, Jameson J(Eds.). Harrison's Principles of Internal Medicine, 21th edition. McGraw Hill 2022. <https://accesspharmacy.mhmedical.com/content.aspx?bookid=3095§ionid=259856983>
4. Jacobson L., Okuda Y., Godwin S. SimWars Simulation Case Book: Emergency Medicine 1st By Cambridge University Press; 2015. 336 p.
5. Goldberger's clinical electrocardiography: a simplified approach / Ary L. Goldberger, Zachary D. Goldberger, Alexei

- Shvilkin. – 8th ed. Elsevier Saunders 2013, Philadelphia, - 231 p.
6. Acute and chronic hypertension: what clinicians need to know for diagnosis and management / Rivera SL, Martin J, Landry J // *Crit Care Nurs Clin North Am.* – 2019. – Vol. 31 (1). – P. 97-108
 7. Ramanayake R.P., Ranasingha S., Lakmini S. Management of emergencies in general practice: role of general practitioners. / *Journal of family medicine and 13 primary care.* – 2014. – Vol. 3(4). – P. 305–308. <https://doi.org/10.4103/2249-4863.148089>
 8. McDonagh T, Metra M, Adamo M et al, ESC Scientific Document Group, 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure: Developed by the Task Force for the diagnosis and treatment of acute and chronic heart failure of the European Society of Cardiology (ESC) With the special contribution of the Heart Failure Association (HFA) of the ESC. // *Eur Heart J.* – 2021. – Vol. 42 (36). – P. 3599–3726, <https://doi.org/10.1093/eurheartj/ehab368>
 9. Hindricks G, Potpara T, Dagres N, et al., ESC Scientific Document Group, 2020 ESC Guidelines for the diagnosis and management of atrial fibrillation developed in collaboration with the European Association for Cardio-Thoracic Surgery (EACTS): The Task Force for the diagnosis and management of atrial fibrillation of the European Society of Cardiology (ESC) Developed with the special contribution of the European Heart Rhythm Association (EHRA) of the ESC. // *Eur Heart J.* – 2021. – Vol. 42 (5). - P 373–498, <https://doi.org/10.1093/eurheartj/ehaa612>
 10. Konstantinides SV, Meyer G, Becattini C, et al., ESC Scientific Document Group. 2019 ESC Guidelines for the diagnosis and management of acute pulmonary embolism developed in collaboration with the European Respiratory Society (ERS): The Task Force for the diagnosis and management of acute pulmonary embolism of the European Society of Cardiology (ESC). // *Eur Heart J.* – 2020. – Vol. 41 (4). – P. 543–603, <https://doi.org/10.1093/eurheartj/ehz405>
 11. Collet J-P, Thiele H, Barbato E, et al., ESC Scientific Document Group, 2020 ESC Guidelines for the management of acute coronary syndromes in patients presenting without persistent ST-segment elevation: The Task Force for the management of acute coronary syndromes in patients presenting without persistent ST-segment elevation of the European Society of Cardiology (ESC) // *Eur Heart J.* – 2021. – Vol. 42 (14) – P. 1289–1367, <https://doi.org/10.1093/eurheartj/ehaa575>
 12. Brugada J, Katritsis DG, Arbelo E et al., ESC Scientific Document Group. 2019 ESC Guidelines for the management of patients with supraventricular tachycardia. The Task Force for the management of patients with supraventricular tachycardia of the European Society of Cardiology (ESC): Developed in collaboration with the Association for European Paediatric and Congenital Cardiology (AEPC). // *Eur Heart J.* – 2020. – Vol. 41(5). – P. 655–720, <https://doi.org/10.1093/eurheartj/ehz467>
 13. Williams B, Mancia G, Spiering W et al.; ESC Scientific Document Group. 2018 ESC/ESH Guidelines for the management of arterial hypertension // *Eur Heart J.* – 2018. – Vol. 39(33). – P. 3021–3104. <https://doi.org/10.1093/eurheartj/ehy339>.
 14. Thygesen K, Alpert JS, Jaffe AS, et al., ESC Scientific Document Group. Fourth universal definition of myocardial infarction. // *Eur Heart J.* – 2019. – Vol. 40(3). – P. 237–269, <https://doi.org/10.1093/eurheartj/ehy462>
 15. Brignole M, Moya A, de Lange FJ, et al.; ESC Scientific Document Group. 2018 ESC Guidelines for the diagnosis and management of syncope. // *Eur Heart J.* – 2018. – Vol. 39(21). – P. 1883-1948. <https://doi.org/10.1093/eurheartj/ehy037>
 16. Neumann F, Sousa-Uva M, Ahlsson A et al.; ESC Scientific Document Group. 2018 ESC/EACTS Guidelines on myocardial revascularization. // *Eur Heart J.* – 2019. – Vol. 40(2). – P. 87-165. <https://doi.org/10.1093/eurheartj/ehy394>
 17. Ibanez B, James S, Agewall S, et al., ESC Scientific Document Group. 2017 ESC Guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation: The Task Force for the management of acute myocardial infarction in patients presenting with ST-segment elevation of the European Society of Cardiology (ESC). // *Eur Heart J.* – 2018. – Vol. 39(2). – P. 119–177, <https://doi.org/10.1093/eurheartj/ehx393>

15. Information resources

Website: <https://new.meduniv.lviv.ua/kafedry/kafedra-vnutrishnoyi-medytsyny-2/>

Phone of the Department: 0322601490

E-mail: kaf_internalmed_2@meduniv.lviv.ua

The tutor of the student scientific circle: Professor Yeugen Dzis

Websites related to Internal Medicine:

<http://www.ers-education.org/guidelines.aspx>

<http://www.esmo.org/Guidelines/Haematological-Malignancies>

<https://ehaweb.org/organization/committees/swg-unit/scientific-working-groups/structureand-guidelines/>

<https://www.aasld.org/>

www.ginasthma.org

<http://www.gastro.org/guidelines>

<https://www.diabetes.org/>

<http://goldcopd.org>.

<http://www.oxfordmedicaleducation.com/>

<http://www.eagen.org/>

<https://www.nice.org.uk>

<https://www.ueg.eu/guidelines/>