

MINISTRY OF HEALTH OF UKRAINE
ODESA NATIONAL MEDICAL UNIVERSITY

Department of simulation medical technologies



CONFIRMED by
Vice-rector for scientific and pedagogical work

Eduard BURYACHKIVSKY

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WORKING PROGRAM OF THE PRACTICE
«SIMULATION MEDICINE»

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

Field of knowledge: 22 "Health care"

Specialty: 222 "Medicine"

Educational and professional program: Medicine

The working program is compiled on the basis of the educational and professional program "Medicine" for the training of specialists of the second (master 's degree) level of higher education in the specialty 222 "Medicine" of the field of knowledge 22 "Health care", approved by the Academic Council of ONMedU (protocol No. 8 of 29.06.2023).

Authors:

head of the department Oleksandr ROGACHEVSKYI
assistant of professor Olha YEHORENKO
associate professor, PhD Mykhailo PERVAK
associate professor, PhD Vasyl GLADCHUK
associate professor, PhD Yuriy PETROVSKIY
assistant of professor Viacheslav ONYSHCHENKO
assistant of professor Dmytro KARAKONSTANTYN
assistant of professor Andrii DOBROVOLSKYI


The working program was approved at the meeting of the department of simulation medical technologies
Protocol No. 1 of 28.08.2023

Head of the department _____  Oleksandr ROGACHEVSKYI

Approved by the guarantor of the educational and professional program _____  Valeriia MARICHEREDA

Approved by the subject-cycle methodological commission for surgical disciplines of ONMedU
Protocol No. 1 dated 30.08.2023

Head of the subject-cycle methodological commission for surgical disciplines of ONMedU

_____  Vasyl MISHCHENKO

Revised and approved at the meeting of the department of simulation medical technologies
Protocol No. __ dated __/__/20__ .

Head of the department _____

Revised and approved at the meeting of the department of simulation medical technologies
Protocol No. __ dated __/__/20__ .

Head of the department _____

1. Description of the practice:

Name of indicators	Field of knowledge, specialty, specialization, level of higher education	Characteristics of the practice
The total number of:	Field of knowledge 22 "Health care"	<i>Full-time (day) education — compulsory discipline</i>
Credits of ECTS: 3		<i>Course: 6</i>
Hours: 90	Specialty 222 "Medicine"	<i>Semesters XI — XII</i>
		<i>Lectures (0 hours)</i>
	Level of higher education second (master's degree)	<i>Seminars (0 hours)</i>
		<i>Practical classes (30 hours)</i>
		<i>Laboratories (0 hours)</i>
		<i>Individual work (60 hours)</i>
		<i>including individual tasks (0 hours)</i>
		<i>Final control form — differential test</i>

2. The aim and tasks of the practice, competencies, program learning outcomes

Aim: formation of students of higher education in the ability to provide emergency medical care, perform medical manipulations, and improve skills and competencies acquired during the study of previous disciplines.

Task:

1. Formation of the ability to diagnose and draw up a treatment plan for the most frequent emergency conditions encountered in inpatient departments of internal medicine, pediatrics, and surgery.
2. Improvement of the ability to apply diagnostic methods that help in decision-making regarding the management and treatment of various diseases that occur in inpatient departments of internal medicine, pediatrics and surgical profile.
3. Improving the ability to make decisions about the tactics of managing patients with diseases found in inpatient departments of internal medicine, pediatrics and surgical profile, based on the principles of evidence-based medicine.
4. Mastery of knowledge about the main classes of drugs used in the clinic of internal medicine, pediatrics and surgery, formation of the ability to make decisions about the tactics of managing patients with the most frequent conditions found in hospitals of departments of internal medicine, pediatrics and surgical profile, based on the relevant clinical and pharmacological principles
5. Formation of the ability to apply medical information technologies and critical expert evaluations of medical literature in the diagnosis and treatment of patients in inpatient departments of internal medicine, pediatrics and surgical profile.
6. Improving the ability to conduct a focused medical examination and targeted physical examination according to the patient's leading complaints and medical history.

The practice process is aimed at forming elements of the following **competencies**:

- **General (GC):**

- GC1. Ability to abstract thinking, analysis and synthesis
- GC3. Ability to apply knowledge in practical situations
- GC4. Knowledge and understanding of the subject area and understanding of professional activity
- GC5. Ability to adapt and act in a new situation
- GC6. Ability to make informed decisions

GC7. Ability to work in a team

GC8. Ability to interpersonal interaction

GC12. Determination and persistence in relation to assigned tasks and assumed responsibilities

GC16. The ability to evaluate and ensure the quality of the work performed

- **Special (SC):**

SC1. Ability to collect medical information about the patient and analyze clinical data

SC2. Ability to determine the necessary list of laboratory and instrumental studies and evaluate their results

SC3. Ability to establish a preliminary and clinical diagnosis of the disease

SC7. Ability to diagnose emergency conditions

SC8. Ability to determine tactics and provide emergency medical care

SC10. Ability to perform medical manipulations

SC11. Ability to solve medical problems in new or unfamiliar environments in the presence of incomplete or limited information, taking into account aspects of social and ethical responsibility

SC24. Adherence to ethical principles when working with patients and laboratory animals

Program learning outcomes (PLO):

PLO1. Have thorough knowledge of the structure of professional activity. To be able to carry out professional activities that require updating and integration of knowledge. To be responsible for professional development, the ability for further professional training with a high level of autonomy

PLO3. Specialized conceptual knowledge, which includes scientific achievements in the field of health care and is the basis for conducting research, critical understanding of problems in the field of medicine and related interdisciplinary problems

PLO4. Identify and identify leading clinical symptoms and syndromes (according to list 1); according to standard methods, using preliminary data of the patient's history, data of the patient's examination, knowledge about the person, his organs and systems, establish a preliminary clinical diagnosis of the disease (according to list 2)

PLO5. Collect complaints, history of life and diseases, assess the psychomotor and physical development of the patient, the state of organs and systems of the body, based on the results of laboratory and instrumental studies, evaluate information about the diagnosis (according to list 4), taking into account the age of the patient

PLO6. To establish a final clinical diagnosis by making a reasoned decision and analyzing the received subjective and objective data of clinical, additional examination, carrying out differential diagnosis, observing the relevant ethical and legal norms, under the control of the managing physician in the conditions of the health care institution (according to the list 2)

PLO7. Assign and analyze additional (mandatory and optional) examination methods (laboratory, functional and/or instrumental) (according to list 4) of patients with diseases of organs and body systems for differential diagnosis of diseases (according to list 2)

PLO8. Determine the main clinical syndrome or symptom that determines the severity of the victim's condition (according to list 3) by making a reasoned decision about the person's condition under any circumstances (in the conditions of a health care facility, outside its borders), including in conditions of emergency and hostilities, in field conditions, in conditions of lack of information and limited time

PLO9. Determine the nature and principles of treatment (conservative, operative) of patients with diseases (according to list 2), taking into account the patient's age, in the conditions of a health care institution, outside its borders and at the stages of medical evacuation, including in field conditions, on the basis of a preliminary clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes, in case of the need to expand the standard scheme, be able to substantiate personalized recommendations under the control of the head physician in the conditions of a medical institution

PLO14. Determine tactics and provide emergency medical care in emergency situations (according to list 3) in limited time conditions in accordance with existing clinical protocols and standards of treatment

PLO15. To organize the provision of medical aid and medical evacuation measures to the population and military personnel in emergency situations and hostilities, including in field conditions

PLO17. Perform medical manipulations (according to list 5) in the conditions of a medical institution, at home or at work on the basis of a previous clinical diagnosis and/or indicators of the patient's condition by making a reasoned decision, observing the relevant ethical and legal norms

As a result of studying the practice, the student of higher education must:

To know:

- Anatomical structure of organs and systems in adults and children of different ages
- Indications and contraindications, complications, methodology, algorithm and technique of cardiopulmonary resuscitation in adults and children of various ages
- Know the methods of general examination. Concepts of palpation, percussion and auscultation. Concept of ECG
- Pathological changes in organs and systems in adults and children of different ages
- Physiological features of blood circulation and breathing in adults and children of different ages
- Pathogenesis of brain cell hypoxia
- Pharmacokinetics, pharmacodynamics and side effects of drugs used in emergency care in adults and children of various ages
- Algorithm and protocols for the treatment of patients
- Principles of medical ethics
- Concepts, indications, contraindications, technique, algorithm and complications of manipulations:
 1. body temperature measurement
 2. restoration of airway patency
 3. basic cardiopulmonary resuscitation
 4. defibrillation using a manual automatic defibrillator-cardioverter
 5. registration of a standard ECG in 12 leads
 6. temporary stoppage of external bleeding
 7. primary surgical treatment of the wound, bandaging, removal of skin sutures, in particular in field conditions
 8. applying a bandage, incl. in field conditions
 9. installation of nasogastric and orogastric probes
 10. transport immobilization
 11. administration of medicinal substances (intravenous jet and drip, intraosseous), in particular in field conditions
 12. provision of peripheral venous and intraosseous access
 13. blood pressure measurement
 14. bladder catheterization with a soft probe
 15. pleural puncture
 16. Larray's pericardial puncture
 17. laparocentesis
 18. cryothyrotomy
 19. Heimlich reception
 20. pulse oximetry
 21. assessment of pulse on peripheral arteries
 22. auscultation of the heart and blood vessels
 23. percussion and auscultation of the lungs

24. palpation of the abdomen

Be able to:

- Orientate yourself in the anatomical structure of organs and systems in adults and children of different ages
- Name the indications and contraindications, complications, methodology, algorithm and technique of cardiopulmonary resuscitation in adults and children of different ages
- Be able to conduct a general examination (palpation, percussion, auscultation, blood pressure measurement, etc.). Be able to analyze ECG results
- Name pathological changes in human organs and systems
- Orientate yourself in the physiological features of blood circulation and breathing in adults and children of different ages
- Define hypoxia of brain cells
- Orientate yourself in dosages, pharmacokinetics, pharmacodynamics and side effects of drugs used in emergency care
- Determine the sequence of actions when providing emergency aid
- Assess the condition of the newborn according to the Apgar scale
- Perform the necessary manipulations
- Monitor the patient's condition after performing practical skills
- Provide psychological assistance to patients
- Solve deontological tasks related to professional activity
- Have professional communication skills

3. Content of the practice

Topic 1. Basic life support

Basic life support for adults and children of different ages. Heimlich reception. Assessment of the condition of the victim and the scene. Medical triage of victims during mass casualties. Moving victims according to the Rautek method. Transport immobilization of victims. Conducting indirect heart massage. Ensuring the patency of the respiratory tract: toilet of the oral cavity, suction of sputum and mucus with a vacuum aspirator, removal of foreign bodies from the nose, mouth and throat. Extraction of the lower jaw. Safar or Guedel duct insertion. Carrying out artificial lung ventilation with the help of a bag and a mask.

Topic 2. Emergency conditions in adults. The scenario — based learning

Emergency care for asystole. Emergency care for ventricular fibrillation. Emergency care for pulseless tachycardia. Emergency care for pulseless electrical activity. Emergency care for anaphylaxis in adults. Emergency care for hypoglycemia in adults. Emergency care for hyperglycemia in adults. Emergency aid for acute phosphorus poisoning. Emergency care for opioid poisoning. Emergency care for acute coronary syndrome.

Topic 3. Emergency conditions in children of various ages. The scenario — based learning

Emergency care for meningococemia in children. Emergency care for febrile convulsions in children. Emergency care for hypovolemic shock/severe dehydration. Assessment of the newborn according to the Apgar score. Emergency care for anaphylaxis in children of all ages. Emergency care for hypoglycemia in children of all ages. Emergency care for hyperglycemia in children of different ages. Emergency care for severe pneumonia in children. Emergency care for bronchial asthma in children. Emergency care for stenosing laryngotracheitis.

Topic 4. Practical skills in surgery. The scenario — based learning

Laparocentesis: concepts, indications, contraindications, technique, algorithm, complications. Larray's pericardial puncture: concepts, indications, contraindications, technique, algorithm, complications. Pleural puncture: concepts, indications, contraindications, technique, algorithm, complications. Cricothyrotomy: concepts, indications, contraindications, technique, algorithm, complications. Methods of temporary stopping of external bleeding. Primary surgical

treatment of the wound. The technique of applying and removing a nodal seam.

Differential test

4. The structure of the practice

Names of topics	Number of hours					
	Total	including				
		lectures	seminars	practical classes	laboratories	Individual work
Topic 1. Basic life support	18	0	0	6	0	12
Topic 2. Emergency conditions in adults. The scenario — based learning	20	0	0	8	0	12
Topic 3. Emergency conditions in children of various ages. The scenario — based learning	18	0	0	6	0	12
Topic 4. Practical skills in surgery. The scenario — based learning	20	0	0	8	0	12
Differential test	14	0	0	2	0	12
Total hours	90	0	0	30	0	60

5. Topics of lectures/ seminars/ practical classes / laboratories

5.1. Topics of lectures

Lectures are not provided.

5.2. Topics of seminar classes

Seminar classes are not provided.

5.3. Topics of practical classes

№	Topic	Hours
1.	Topic 1. Practical lesson 1. Basic life support	2
2.	Topic 1. Practical lesson 2. Basic life support	2
3.	Topic 1. Practical lesson 3. Basic life support	2
4.	Topic 2. Practical lesson 4. Emergency conditions in adults. The scenario — based learning	2
5.	Topic 2. Practical lesson 5. Emergency conditions in adults. The scenario — based learning	2
6.	Topic 2. Practical lesson 6.	2

	Emergency conditions in adults. The scenario — based learning	
7.	Topic 2. Practical lesson 7. Emergency conditions in adults. The scenario — based learning	2
8.	Topic 3. Practical lesson 8. Emergency conditions in children of various ages. The scenario — based learning	2
9.	Topic 3. Practical lesson 9. Emergency conditions in children of various ages. The scenario — based learning	2
10.	Topic 3. Practical lesson 10. Emergency conditions in children of various ages. The scenario — based learning	2
11.	Topic 4. Practical lesson 11. Practical skills in surgery. The scenario — based learning	2
12.	Topic 4. Practical lesson 12. Practical skills in surgery. The scenario — based learning	2
13.	Topic 4. Practical lesson 13. Practical skills in surgery. The scenario — based learning	2
14.	Topic 4. Practical lesson 14. Practical skills in surgery. The scenario — based learning	2
15.	Practical lesson 15. Differential test	2
	Total	30

5.4. Topics of laboratories

Laboratories are not provided.

6. Individual work of the student

№	Topic	Hours
1.	Topic 1. Management of a patient with cardiovascular diseases and anaphylactic shock	12
2.	Topic 2. Learning and practice of practical skills: cricothyrotomy; puncture and drainage of the pleural cavity; pericardial puncture	12
3.	Topic 3. Physiology of childbirth. Analgesia for childbirth	12
4.	Topic 4. Management of full-term and premature newborns. Primary resuscitation of newborns. Management of a newborn child with respiratory disorders	12
5.	Topic 5. Preparation for practical classes	12
	Total	60

7. Teaching methods

Practical classes: conversation, role-playing, solving clinical situational problems, practicing and controlling practical skills on simulation models and mannequins (according to list 5), passing simulation scenarios, solving test tasks.

Individual work: individual work with the recommended basic and additional literature, electronic information resources, individual work with the bank of Step-2 test tasks, preparation for practical classes.

8. Forms of control and evaluation methods (including criteria for evaluating learning outcomes)

Ongoing control: oral survey, testing, assessment of performance of practical skills on simulation models and mannequins, assessment of communication skills during simulation scenarios, solution of situational clinical tasks, assessment of activity in class.

Final control: differential test.

Evaluation of the current educational activity in a practical lesson:

1. Evaluation of theoretical knowledge on the subject of the lesson:
 - methods: survey, solving a situational clinical problem
 - the maximum score is 5, the minimum score is 3, the unsatisfactory score is 2.
2. Evaluation of practical skills and manipulations on the subject of the lesson:
 - methods: assessment of the correctness of the performance of practical skills
 - the maximum score is 5, the minimum score is 3, the unsatisfactory score is 2.
3. Evaluation of work with a patient simulator on the subject of the lesson:
 - methods: assessment of: a) communicative skills of communicating with a patient simulator; b) correctness of appointment and assessment of laboratory and instrumental studies; c) compliance with the differential diagnosis algorithm; d) substantiation of the clinical diagnosis; e) drawing up a treatment plan;
 - the maximum score is 5, the minimum score is 3, the unsatisfactory score is 2.

The grade for one practical lesson is the arithmetic average of all components and can only have an integer value (5, 4, 3, 2), which is rounded according to the statistical method

Current evaluation criteria in practical training

Rating	Evaluation criteria
Excellent "5"	The applicant takes an active part in the lesson; demonstrates deep knowledge, gives complete and detailed answers to questions. Thoroughly and comprehensively knows the content of theoretical issues, fluent in professional and scientific terminology. Thinks logically and constructs an answer, freely uses acquired theoretical knowledge when analyzing practical tasks. When solving a clinical problem, he correctly interprets the anamnesis data, the results of clinical, laboratory and instrumental studies, correctly answers all the questions and convincingly substantiates his point of view, can propose and justify an alternative version of the decision on individual issues. When solving a practical task according to the OSCE type, he correctly demonstrates the performance of practical skills on simulation models and mannequins, strictly adheres to the algorithm of their implementation
Good "4"	The acquirer participates in the class; knows the material well; demonstrates the necessary knowledge, but answers the questions with some errors. He knows the content of theoretical issues deeply and comprehensively, and has professional and scientific terminology. Thinks logically and constructs an answer, uses acquired theoretical knowledge when analyzing practical tasks. But when teaching some questions, there is not enough depth and argumentation, it makes insignificant mistakes, which are eliminated by the student himself when the teacher points them out. When solving a clinical problem, minor errors or inaccuracies are assumed in the interpretation of anamnesis data, results of clinical, laboratory and instrumental studies, he answers all the questions without significant errors, fully substantiates his point of view, but proposals for an alternative option cause difficulties. When solving a practical task according to the OSCE type, minor errors in

	the algorithm and technique of performing skills on simulation models and mannequins are corrected at the instruction of the teacher
Satisfactory "3"	The acquirer sometimes participates in the activity; partially speaks and asks questions; makes mistakes when answering questions. Possesses a basic amount of theoretical knowledge, uses professional and scientific terminology inaccurately. Experiences significant difficulties in constructing an independent logical answer, in applying theoretical knowledge in the analysis of practical tasks. There are significant errors in the answers. When solving a clinical problem, he interprets the history data, the results of clinical, laboratory and instrumental studies with errors, does not know individual details, allows inaccuracies in the answers to questions, does not adequately justify his answers and interprets the wording, experiences difficulties in completing tasks and proposing alternative options. When solving a practical task according to the OSCE type, significant errors are assumed in the algorithm and technique of performing skills on simulation models and mannequins
Unsatisfactory "2"	The acquirer does not participate in the lesson, is only an observer; never speaks or asks questions, disinterested in learning the material; gives incorrect answers to questions. Has not mastered the basic amount of theoretical knowledge, shows a low level of mastery of professional and scientific terminology. Answers to questions are fragmentary, inconsistent, illogical, cannot apply theoretical knowledge when analyzing practical tasks. There are a significant number of gross errors in the answers. When solving a clinical problem, he cannot interpret the received history data, the results of clinical, laboratory and instrumental studies, answer the questions, or makes significant mistakes in the answers; could not justify his decisions or does it unconvincingly. It does not offer alternative options. When solving a practical task according to the OSCE type, gross errors and errors in the algorithm and technique of performing skills on simulation models and mannequins will not be demonstrated or assumed

Only those applicants who have fulfilled the requirements of the training program in the discipline, have no academic debt and their average score for the current educational activity in the discipline is at least 3.00 are admitted to the final control in the form of a differentiated credit.

Evaluation of learning results during the final control — differential test

The content of the evaluated activity	Scores
Passing simulation scenarios	3
Demonstration of practical skills on mannequins and simulators	2
Total	5.0

Criteria for evaluating the results of the practice on differential test

Rating	Evaluation criteria
Excellent "5"	The student correctly, accurately and completely completed all practical skills tasks, clearly and logically answered the questions posed by the examiners. Thoroughly and comprehensively knows the content of

	<p>theoretical issues, fluent in professional and scientific terminology. Thinks logically and constructs an answer, freely uses acquired theoretical knowledge when analyzing practical tasks. When solving a clinical problem, he correctly interpreted the anamnesis data, the results of clinical, laboratory and instrumental studies, answered all the questions correctly and convincingly substantiated his point of view, could propose and justify an alternative version of the decision on individual issues. When solving a practical task according to the OSCE type, he correctly demonstrated the performance of practical skills on simulation models and mannequins, strictly followed the algorithm of their implementation</p>
Good "4"	<p>The student completed all tasks on practical skills sufficiently fully, clearly and logically answered the questions posed by the examiners. He knows the content of theoretical issues deeply and comprehensively, and has professional and scientific terminology. Thinks logically and constructs an answer, uses acquired theoretical knowledge when analyzing practical tasks. But when teaching some questions, there is not enough depth and argumentation, it makes insignificant mistakes, which are eliminated by the applicant himself when the examiner points them out. When solving a clinical problem, he assumed insignificant errors or inaccuracies in the interpretation of anamnesis data, the results of clinical, laboratory and instrumental studies, answered all the questions without significant errors, fully substantiated his point of view, but proposals for an alternative option cause difficulties. When solving a practical task according to the OSCE type, he made minor errors in the algorithm and technique of performing skills on simulation models and mannequins, corrected at the instruction of the teacher</p>
Satisfactory "3"	<p>The learner incompletely completed all practical skills tasks, the answers to additional and leading questions are vague and ambiguous. Possesses a basic amount of theoretical knowledge, uses professional and scientific terminology inaccurately. Experiences significant difficulties in constructing an independent logical answer, in applying theoretical knowledge in the analysis of practical tasks. There are significant errors in the answers. When solving a clinical problem, he interpreted the anamnesis data, the results of clinical, laboratory and instrumental studies with errors, did not know individual details, allowed inaccuracies in the answers to questions, did not sufficiently justify his answers and interpret the wording correctly, experienced difficulties in completing tasks and offering alternative options. When solving a practical task of the OSCE type, significant errors were made in the algorithm and technique of performing skills on simulation models and mannequins</p>
Unsatisfactory "2"	<p>The student of education did not complete the tasks on practical skills, in most cases he did not answer the additional and leading questions of the examiners. He did not master the basic amount of theoretical knowledge, he showed a low level of mastery of professional and scientific terminology. Answers to questions are fragmentary, inconsistent, illogical, cannot apply theoretical knowledge when analyzing practical tasks. There are a significant number of gross errors in the answers. When solving a clinical problem, he could not interpret the received data from the anamnesis, the results of clinical, laboratory and instrumental studies, answer the questions, or made significant mistakes in the answers; could not justify his decisions or did it unconvincingly. He did not offer alternative options. When solving a practical task according to the OSCE type, he did not demonstrate or make</p>

	gross errors and mistakes in the algorithm and technique of performing skills on simulation models and mannequins
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9. Distribution of points, obtained by the students

The obtained average score for the academic discipline for applicants who have successfully mastered the work program of the academic discipline is converted from a traditional four-point scale to points on a 200-point scale, as shown in the table:

Conversion table of a traditional to multi-point scale

National score for the discipline	The sum of scores for the discipline
Excellent ("5")	185 – 200
Good ("4")	151 – 184
Satisfactory ("3")	120 – 150
Unsatisfactory ("2")	Less than 120

Multi-point scale (200-point scale) characterizes the actual success rate of each applicant in mastering the educational component. The conversion of the traditional grade (average score for the academic discipline) into a 200-point grade is performed by the information and technical department of the University.

According to the obtained points on a 200-point scale, the achievements of the applicants are evaluated according to the ECTS rating scale. Further ranking according to the ECTS rating scale allows you to evaluate the achievements of students from the educational component who are studying in the same course of the same specialty, according to the points they received.

The ECTS scale is a relative-comparative rating, which establishes the applicant's belonging to the group of better or worse among the reference group of fellow students (faculty, specialty). An "A" grade on the ECTS scale cannot be equal to an "excellent" grade, a "B" grade to a "good" grade, etc. When converting from a multi-point scale, the limits of grades "A", "B", "C", "D", "E" according to the ECTS scale do not coincide with the limits of grades "5", "4", "3" according to the traditional scale. Acquirers who have received grades of "FX" and "F" ("2") are not included in the list of ranked acquirers. The grade "FX" is awarded to students who have obtained the minimum number of points for the current learning activity, but who have not passed the final examination. A grade of "F" is given to students who have attended all classes in the discipline, but have not achieved a grade point average (3.00) for the current academic activity and are not admitted to the final examination.

Applicants who study in one course (one specialty), based on the number of points scored in the discipline, are ranked on the ECTS scale as follows:

Conversion of the traditional evaluation and ECTS scores

Score on the ECTS scale	Statistical indicator
A	The best 10% students
B	Next 25% students
C	Next 30% students
D	Next 25% students
E	Next 10% students

10. Methodological support

- Working program of the practice
- Syllabus

- Methodological recommendations for the practical classes in the practice
- Methodological recommendations for the individual work of students
- Test tasks
- Simulation scenarios
- Mannequins and simulators

11. Questions for the final control

1. Basic life support. Assessment of the condition of the victim and the scene
2. Basic life support. Medical triage of victims during mass casualties
3. Basic life support. Moving victims according to the Rautek method
4. Basic life support. Transport immobilization of victims
5. Basic life support. Conducting indirect heart massage
6. Basic life support. Ensuring the patency of the respiratory tract: toilet of the oral cavity, suction of sputum and mucus with a vacuum aspirator, removal of foreign bodies from the nose, mouth and throat
7. Basic life support. Removal of the lower jaw
8. Basic life support. Safar or Guedel duct insertion
9. Basic life support. Carrying out artificial lung ventilation with the help of a bag and a mask
10. Emergency care for anaphylaxis in adults and children of all ages
11. Emergency care for hypoglycemia and hyperglycemia in adults and children of all ages
12. Emergency aid for OS poisoning
13. Emergency care for opioid poisoning
14. Emergency care for asystole
15. Emergency care for ventricular fibrillation
16. Emergency care for BPEA
17. Emergency care for pulseless tachycardia
18. Laparocentesis: concepts, indications, contraindications, technique, algorithm, complications
19. Larray's pericardial puncture: concepts, indications, contraindications, technique, algorithm, complications
20. Pleural puncture: concepts, indications, contraindications, technique, algorithm, complications
21. Conicotomy: concepts, indications, contraindications, technique, algorithm, complications
22. Methods of temporary stopping of external bleeding
23. Primary surgical treatment of the wound
24. The technique of applying and removing a nodal seam
25. Emergency care for stenosing laryngotracheitis
26. Emergency care for severe pneumonia in children
27. Emergency care for bronchial asthma in children
28. Emergency care for meningococemia in children
29. Emergency care for febrile convulsions in children
30. Emergency care for hypovolemic shock/severe dehydration
31. Emergency care for a full-term newborn
32. Assessment of the newborn according to the Apgar score

The list of practical skills, the acquisition of which is monitored during the differential test (according to list 5)

1. body temperature measurement

2. restoration of airway patency
3. basic cardiopulmonary resuscitation
4. defibrillation using a manual automatic defibrillator-cardioverter
5. registration of a standard ECG in 12 leads
6. temporary stoppage of external bleeding
7. primary surgical treatment of the wound, bandaging, removal of skin sutures, in particular in field conditions
8. applying a bandage, incl. in field conditions
9. installation of nasogastric and orogastric probes
10. transport immobilization
11. administration of medicinal substances (intravenous jet and drip, intraosseous), in particular in field conditions
12. provision of peripheral venous and intraosseous access
13. blood pressure measurement
14. bladder catheterization with a soft probe
15. pleural puncture
16. Larray's pericardial puncture
17. laparocentesis
18. cricothyrotomy
18. Heimlich maneuver
19. pulse oximetry
20. assessment of pulse on peripheral arteries
21. auscultation of the heart and blood vessels
22. percussion and auscultation of the lungs
23. palpation of the abdomen

12. Recommended literature

Main:

1. Emergency and urgent medical care. In VI Vol. IV. Clinical routes (protocols) of the patient during the provision of emergency medical care at the pre-hospital stage: textbook for students. Higher Education Closed / Krylyuk V.O. etc. - Kyiv: Ozhiva. - 2020. - 300 p.
2. Emergency and urgent medical care: Study guide for students of higher educational institutions of the Ministry of Health of Ukraine. Recommended by the State Institution "Central Methodical Cabinet for Higher Medical Education of the Ministry of Health of Ukraine" / Shkurupii D.A. (ed.). - 2nd ed.— 2018. — 240 p., black and white, black and white.
3. Neonatology: a textbook in 3 volumes / T. K. Znamenska, Yu.G. Antipkin, M.L. Aryaev and others; under the editorship T.K. Znamenskaya Lviv: T.V. Marchenko Publisher, 2020, T. 1. 407 p.; T. 2. 455 p.; T. 3. 379 p.
4. Anesthesiology and intensive care: a textbook / F. S. Glumcher, L. P. Chepky, L. V. Usenko, etc.; ed. F.S. Glumcher - 4th edition, - K.: VSV "Medicine", 2021. - 360 p.
5. Order of the Ministry of Health of Ukraine dated March 15, 2022 No. 488 "On the approval of Methodological recommendations for the provision of emergency medical care to victims at the pre-hospital stage in the conditions of hostilities/martial law".
6. Pediatrics. Differential diagnosis. Emergency situations. / edited by Aryaeva M.L., Kotova N.V. Odesa: ONMedU, 2017. 280 p.

Additional:

1. Internal diseases: in 2 h. Part 1: Chapters 1–8: Nats. textbook for intern doctors, student. honey. ZVO, medical practitioners, therapist. profile. Recommended by the academic council of IFNMU / L.V. Hlushko, S.V. Fedorov, I.M. Skrypnyk and others; under the editorship L.V. Hlushka. — K., 2019. — 680 p., tv. pal., (art. 5 pr.).
2. Internal diseases: in 2 h. Part 2: Chapters 9–24: Nats. handyman for intern doctors, students honey. ZVO, medical practitioners, therapist. profile. Recommended by the academic council of IFNMU / L.V. Hlushko, S.V. Fedorov, I.M. Skrypnyk and others; under the editorship L.V. Hlushka. — K., 2019. — 584 p. + 6s. color incl., TV pal., (art. 5 pr.).
3. 30 Emergency conditions in therapy: a study guide: edited by Prof. Yu.M. Mostovoy Vinnitsia, 2017.
4. Anesthesiology, intensive care and intensive care: a study guide (University I-III) / A.A. Ilko - 2nd ed., revised. and add., "Medicine", Kyiv, 2018.
5. ECG in practice. The ECG in Practice: a study guide / John R. Hampton; translation of the 6th Eng. edition. - Kyiv: Medicine, 2018. - 560 p.
6. Order of the Ministry of Health of Ukraine dated March 17, 2022 No. 496 "Some issues of providing primary medical care under martial law".
7. Order of the Ministry of Health of Ukraine dated September 14, 2021 No. 1945 "On approval of the Unified clinical protocol of primary medical care "Integrated management of childhood diseases".
8. Order of the Ministry of Health of Ukraine dated June 5, 2019 No. 1269 "Emergency medical care: new clinical protocol."
9. Algorithms for the diagnosis and treatment of emergency conditions in therapeutic practice: manual / E.M. Starodub. - Vol. 2019. - 196 p., pal. soft 2. Emergencies in the practice of a therapist and family doctor, manual / Yepishyn A.V. . - Vol. 2019. - 380 pp., pal. TV
10. Order of the Ministry of Health of Ukraine dated October 8, 2013 No. 868 "Unified clinical protocol of primary, secondary (specialized) medical care for bronchial asthma in children."
11. Order of the Ministry of Health of Ukraine dated June 8, 2015 No. 327 "Unified clinical protocol of primary medical care for cough in children aged six years and older."
12. Order of the Ministry of Health of Ukraine dated December 30, 2015 No. 916 "Unified clinical protocol of emergency, primary, secondary (specialized) and tertiary (highly specialized) medical care for drug allergy, including anaphylaxis."
13. Anesthesiology, intensive care and emergency conditions: textbook: edited by Prof. Vladyki A.S. Odesa: ONMedU, 2016.

13. Electronic information resources

1. <http://moz.gov.ua> — Ministry of Health of Ukraine
2. <https://www.cprguidelines.eu/> — European Resuscitation Council
3. <https://www.c-tecc.org/our-work/guidance> — Committee on Tactical Emergency Relief
4. <https://zakon.rada.gov.ua/laws/show/z0356-22#n42> — Order of the Ministry of Health of Ukraine No. 441 dated 09.03.2022 "On approval of procedures for providing pre-medical assistance to persons in emergency situations "
5. <http://www.nbuv.gov.ua/> — National Library of Ukraine
6. <https://gmka.org/uk/category/dlya-medykiv/nevidkladna-hirugiya/> — Global Alliance for Medical Knowledge
7. www.ama-assn.org — American Medical Association
8. www.who.int — World Health Organization

9. www.dec.gov.ua/mtd/home/ — State Expert Center of the Ministry of Health of Ukraine
10. <http://bma.org.uk> — British Medical Association
11. www.gmc-uk.org — General Medical Council (GMC)
12. www.bundesaerztekammer.de — German Medical Association
13. <https://emergencymanual.stanford.edu/downloads/> — Стенфордський посібник з невідкладної допомоги
14. <https://www.futurelearn.com/courses/critical-care> — University of Glasgow Handbook of Emergency Medicine
15. <https://www.medscape.org/viewarticle/964673> — Convulsions after a stroke
16. <https://www.medscape.org/viewarticle/964201> — Aspirin for primary prevention of CVD
17. <https://www.medscape.org/viewarticle/965140> — New recommendations for the treatment of chest pain