

**MINISTRY OF HEALTH OF UKRAINE**  
**ODESA NATIONAL MEDICAL UNIVERSITY**  
 Department of simulation medical technologies

**Syllabus of the practice**  
**«Simulation medicine»**

<b>Scope of practice</b>	Total number of hours for practice: 90 hours, 3 ECTS credits Semester: XI — XII 6th year of study
<b>Days, time, place of practice</b>	According to the schedule of classes Department of simulation medical technologies Odesa, Valikhovsky Lane, 3
<b>Teacher(s)</b>	Head of the department, Doctor of Economics, Doctor of Medicine, Associate Professor 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 Svitlana TRISHCHENKO Assistant of professor Hennadii CHEREMNYKH Assistant of professor Andrii DOBROVOLSKYI
<b>Contact Information</b>	E-mail: simmedtech@onmedu.edu.ua Consultations: from 14.30 to 16.30 every working day

**COMMUNICATION**

Communication with students of higher education will be conducted in the classroom (face-to-face).

During distance learning, communication is carried out through the Microsoft Teams platform, as well as through e-mail correspondence, Viber, WhatsApp, Telegram messengers (through groups created in Viber, WhatsApp, Telegram for each group, separately through the head of the group).

**ABSTRACT OF THE PRACTICE**

*The subject* there is a procedure for providing emergency medical aid to the injured and sick.

*Prerequisites:* builds upon and integrates knowledge acquired during the study of previous disciplines: medical biology, normal human anatomy and physiology, pharmacology, hygiene, pathological anatomy, pathological physiology, emergency medicine, therapy, surgery and other clinical disciplines.

*Post-requisites:* improves theoretical knowledge and practical skills in the organization and provision of emergency medical care to patients during the development of emergency conditions at the pre-hospital and early hospital stages, including during emergency situations.

*The aim is* formation and improvement of the ability to provide emergency medical aid to the injured and sick and the implementation of practical skills 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

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- 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.

*Expected results:*

As a result of the internship, 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

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14. bladder catheterization with a soft probe
15. pleural puncture
16. Larray's pericardial puncture
17. laparocentesis
18. cryothyreotomy
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

### **DESCRIPTION OF THE PRACTICE**

*Forms and methods of education.* Practice will be taught in the form of practical classes (30 hours) and organization of students' individual work (60 hours).

Consultations are individual.

*Teaching methods.*

*Practical classes:* conversation, role-playing, solving clinical situational problems, practice and control of 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.

*Contents of practice:*

- Topic 1. Basic life support
- Topic 2. Emergency conditions in adults. The scenario — based learning
- Topic 3. Emergency conditions in children of various ages. The scenario — based learning
- Topic 4. Practical skills in surgery. The scenario — based learning

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Differential test

*List of 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 Vinnytsia, 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

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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.

*Electronic 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.nbu.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](http://www.ama-assn.org) — American Medical Association
8. [www.who.int](http://www.who.int) — World Health Organization
9. [www.dec.gov.ua/mtd/home/](http://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](http://www.gmc-uk.org) — General Medical Council (GMC)
12. [www.bundesaerztekammer.de](http://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

**EVALUATION**

*Forms and methods of current control:*

- oral control: individual survey on questions of the relevant topic;
- written control: assessment of the solution of clinical situational problems, assessment of the performance of practical skills on simulation models and mannequins;
- test control: assessment of solving test tasks.

**Criteria of ongoing assessment at the practical class**

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

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	<p>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</p>
Good "4"	<p>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</p>
Satisfactory "3"	<p>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</p>
Unsatisfactory "2"	<p>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</p>

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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 differential test.

**Evaluation of the results of the students' training 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
<b>Total</b>	<b>5.0</b>

**Criteria for evaluating the results of 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 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
Good "4"	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
Satisfactory "3"	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

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	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
Unsatisfactory "2"	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 gross errors and mistakes in the algorithm and technique of performing skills on simulation models and mannequins

**INDIVIDUAL WORK OF HIGHER EDUCATION ACQUIRES**

*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.

**ACADEMIC PRACTICE POLICY**

*Deadlines and Rescheduling Policy:*

- absences from classes due to non-respectable reasons are worked out according to the schedule of the teacher on duty;
- absences due to valid reasons are worked out according to an individual schedule with the permission of the dean's office.

*Academic Integrity Policy:*

Applicants must observe academic integrity, namely:

- independent performance of all types of work, tasks, forms of control provided for by the work program of this educational discipline;
- references to sources of information in case of use of ideas, developments, statements, information;
- compliance with the legislation on copyright and related rights;
- provision of reliable information about the results of one's own educational (scientific) activity, used research methods and sources of information.

Unacceptable in educational activities for participants of the educational process are:

- the use of family or official ties to obtain a positive or higher grade during any form of control of academic performance or academic merit;
- use of prohibited auxiliary materials or technical means (cheat sheets, notes, micro-earphones, telephones, smartphones, tablets, etc.) during control measures;
- going through procedures for monitoring the results of training by fake persons.



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For violation of academic integrity, students of higher education may be held to the following academic responsibility:

- decrease in the results of assessment of individual survey, performance of test tasks, assessment for solving situational tasks, performance of individual task, credit, etc.;
- retaking the assessment (test tasks, situational tasks, individual tasks, assessment, etc.);
- assignment of additional control measures (additional situational tasks, individual tasks, tests, etc.);
- conducting an additional inspection of other works authored by the violator.

*Attendance and Tardiness Policy:*

State of health: applicants suffering from acute infectious diseases, including respiratory diseases, are not allowed to attend classes.

Lateness to classes is not acceptable. A student who is late for class can attend it, but if the teacher has put "nb" in the journal, he must complete it in the general order.

*Use of mobile devices:*

The use of any mobile devices is prohibited. In case of violation of this clause, the student must leave the class and the teacher will write "nb" in the journal, which he must complete in the general order. Mobile devices may be used by students with the permission of the instructor if they are needed for the assignment.

*Behavior in the audience:*

The behavior of applicants and teachers in the classrooms must be working and calm, strictly comply with the rules established by the Regulations on academic integrity and ethics of academic relations at Odesa National Medical University, in accordance with the Code of Academic Ethics and University Community Relations of Odesa National Medical University, Regulations on Prevention and detection of academic plagiarism in the research and educational work of students of

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