ODESSA NATIONAL MEDICAL UNIVERSITY

Medical faculty № 1
Robotic and Endoscopic Surgery Department

SYLLABUS
SIMULATION MEDICINE

Odessa-2020

Hours/credits:	36 hours /1.2 credits
Semester, Year	XI-XII. 2020-2021 studying year
Days, time, place:	according to the «PROJECT OF WORKING PROGRAM ON SIMULATION MEDICINE FOR STUDENTS OF 6th YEAR» online in Microsoft Teams program. Pastera streat 9L (entrance from Valikhovsky street) 2 floor.
Teachers	1. Pervak M. P. – assistant of the department, candidate of medical science 2. Yehorenko O.S. – assistant of the department 3. Onischenko V.I. – assistant of the department 4. Karakonstantyn D.F. – assistant of the department 5. Cheremnyh G.I. – assistant of the department 6. Sysoeva I.V. – assistant of the department 7. Kornienko S.V. – assistant of the department, candidate of psychological science 8. Ponomarenko A.V. – assistant of the department 9. Gladchuk V.I. - assistant of the department, candidate of medical science
Phone numbers	0635930840 Pervak M. P.
E-mail:	**odsimcentre@gmail.com**
Work place	Training and Production Complex of Innovative Teaching, Informatization and Continuing Education Technologies, Pastera streat 9L (entrance from Valikhovsky street) 2 floor.
Consultations	Online consultations are carried out in Microsoft Teams program after coordination of time with the teacher.

COMMUNICATION.

Communication with teachers during the educational process involves face-to-face meetings with students.

In the adaptive mode of preventing the spread of acute respiratory viral infections, communication is based on the Teams software package and other electronic means of communication.

COURSE ANNOTATION.

The subject of study of the discipline.

The discipline "Simulation Medicine" is a component of the educational-professional program of professional training, studied by students majoring in 222 "Medicine"

qualification educational "Master of Medicine", qualification professional "Doctor" during the 6th year of study. Semesters: XI - XII.

Prerequisites and postrequisites of the discipline.

The discipline is based on knowledge of: physiology, pharmacology, medical and biological physics, immunology, obstetrics and gynecology, general surgery, cardiology, neonatology, anesthesiology.

The discipline serves as a basis for further studying of: obstetrics and gynecology, surgery, reanimation, medicine of emergency conditions, child surgery.

The purpose of the course.

Acquisition by a student of knowledge and mastery of professional competencies and skills, including those acquired during the study of previous disciplines, which will be used to compile OSCE by students.

Tasks of the discipline.

• Consolidate knowledge of general principles and methods of providing emergency medical care;
• Know the advantages and disadvantages of different methods of treatment of emergencies;
• Be able to differentiate the clinical manifestations of various emergencies in the practice of physician, surgeon, obstetrician-gynecologist, pediatrician;
• Master the basic stages of providing emergency medical care to patients with the development of emergencies;
• Know and have a differentiated approach to providing medical care to patients in case of emergencies.

Expected results.

Know:

• Anatomical structure of the cardiovascular and respiratory systems in adults and children of different ages;
• Indications and contraindications, complications, methods, algorithm and technique of cardiopulmonary resuscitation in adults and children of different ages;
• Know the methods of general examination. The concept of palpation, percussion and auscultation. The concept of ECG;
• Pathological changes of the cardiovascular and respiratory systems of adults and children of different ages;
• Physiological features of blood circulation and respiration in adults and children of different ages;

• Pathogenesis of hypoxia of brain cells;
• Pharmacokinetics, pharmacodynamics and side effects of drugs used in the care of emergencies in adults and children of all ages;
• Algorithm and treatment protocols for patients (on high-fidelity simulators) with the following diseases:
- hypertensive crisis complicated by pulmonary edema,
- acute myocardial infarction with elevation of the ST segment,
- anaphylactic shock.
• The concept of precursors of childbirth, signs of childbirth.
• Features of the clinical course and tactics of the first period of childbirth.
• Features of the clinical course and tactics of the II period of childbirth.
• Features of the clinical course and tactics of the III period of childbirth.
• Principles of assessment of the condition of the newborn on the Apgar scale, the primary toilet of the newborn.
• Indications for the following urgent manipulations:
- pleural puncture
- conicotomy
- pericardial puncture.
• Fundamentals of psychology;
• Aspects of interpersonal communication;
• Ethics and deontology.

Be able:
• Orient in the anatomical structure of the cardiovascular and respiratory systems in adults and children of different ages.
• Name the indications and contraindications, complications, methods, algorithms and techniques 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 the pathological changes of the cardiovascular and respiratory systems of man
• Orient in the physiological features of blood circulation and respiration in adults and children of different ages.
• Determine hypoxia of brain cells.
• Orient in dosages, pharmacokinetics, pharmacodynamics and side effects of drugs used in care in case of emergency.
• Determine the sequence of actions in providing emergency care.
• Perform the necessary manipulations.
• Monitor the patient's condition after performing practical skills.

• Collect and evaluate obstetric history.
• Perform external and internal pelviometry.
• Conduct an external obstetric examination (Leopold's techniques).
• Determine the estimated weight of the fetus.
• Conduct an internal obstetric examination.
• Establish the term of pregnancy and the expected term of childbirth (according to the anamnesis and objective research).
• Evaluate the heartbeat of the fetus and the results of the study of the feto-placental complex.
• Determine the period and phase of labor.
• Provide obstetric care in childbirth and the postpartum period.
• Assess the condition of the newborn on the Apgar scale.
• Be able to differentiate the clinical manifestations of heart failure in children of different ages.
• Provide psychological assistance to patients;
• Solve deontological problems related to professional activities.
• Have professional communication skills.

COURSE DESCRIPTION.

Methods and forms of teaching.

The course will be presented in the form of practical classes (36 hours), organization of independent work of students (120 hours).

The content of the discipline.

1. Basic life support.
2. Emergency care for anaphylaxis in adults and children of different ages. Emergency care for hypoglycemia in adults and children of all ages. Clinical scenarios.
3. Emergency care for phosphorus poisoning. Emergency care for opioid poisoning. Clinical scenarios.
4. Emergency care for asystole. Emergency care for ventricular fibrillation. Clinical scenarios.
5. Laparocentesis: indications, contraindications, methods, complications. Larry`s puncture of the pericardial cavity: indications, contraindications, methods, complications.
6. Puncture of the pleural cavity: indications, contraindications, methods, complications.
7. Methods of temporary cessation of external bleeding.
8. Primary surgical treatment of the wound. Method of applying and removing the

nodal seam. Dissection and drainage of abscesses.
9. Conicotomy: indications, contraindications, methods, complications. Anterior nasal tamponade. Examination of the eye fundus.
10. Emergency care for severe pneumonia in children. Emergency care for bronchial asthma in children. Clinical scenarios.
11. Emergency care for meningococcal disease in children. Emergency care for febrile seizures in children. Clinical scenarios.
12. Emergency care for hypovolemic shock / severe dehydration. Emergency care for a full-term newborn. Assessment of the newborn on the APGAR scale. Clinical scenarios.
13. Emergency care for a newborn with esophageal atresia at the stage of transportation to a surgical hospital. Emergency care for a newborn with high congenital intestinal obstruction at the stage of transportation to a surgical hospital. Clinical scenarios.
14. Providing care for late adhesive intestinal obstruction. Clinical scenarios.
15. Clinical examination of the mammary glands. External obstetric examination (Leopold's techniques), determination of the topography of the fetus in the uterus.
16. Features of history taking in patients.
17. Differential test.

LIST OF REFERENCES

Basic literature

1. Pediatric Surgery: textbook / V.A. Dihtiar, V.I. Sushko, D.Yu. Kryvchenia et al. 2019.
2. Obstetrics and Gynecology: in 2 volumes. — Volume 1. Obstetrics: textbook (III—IV a. l.) / V.I. Gryshchenko, M.O. Shcherbina, B.M. Ventskivskyi et al.; edited by V.I. Gryshchenko, M.O. Shcherbina. — 2nd edition 2018

Additional literature:

1. General Surgery: textbook / S.D. Khimich, M.D. Zheliba, V.P. Andryushchenko et al. 2018
2. Internal Medicine: Critical Care: textbook (III—IV a. l.) / O.Ya. Babak, O.M. Bilovol, N.M. Zhelezniakova et al.; edited by O.Ya. Babak, O.M. Bilovol 2018
3. ЕКГ у практиці = The ECG in Practice = ЭКГ в практике: навчальний посібник / Джон Р. Хемптон; переклад 6-го англ. видання. — Три мови 2018р.

EVALUATION

Evaluation of the discipline is carried out in accordance with the "Regulations on the organization of the educational process at the Odessa National Medical University", 2019.

Assessment of each topic of discipline is performed by traditional 4 point scale.

Current control is carried out at each practical lesson in accordance with the specific goals of the topic and includes standardized forms of control of theoretical training and control of professional skills. An obligatory element of the daily control of students' knowledge is the demonstration of practical skills when working with a dummy, mastery of methods for performing medical manipulations.

During practical lessons, most of the time (at least 60%) should be devoted to the main stage of the lesson: students' independent work under the guidance of a teacher on professionally oriented tasks (real objects of future professional activity - patients, laboratory results, radiographs or their models). The rest of the time is for analysis and joint discussion of the results of students' independent work with error correction.

The types of student's educational activities, which are subject to assessment in the classroom, are determined by the department, taking into account the specifics of the discipline and the goals of studying a particular topic and are recorded in the minutes of the department meeting before the start of the academic year.

In a practical lesson, at least 50% of students should be interviewed. At the end of the semester (cycle), the average number of students' grades in the group should be the same.

At the end of the study of the discipline, the current performance is calculated as the average current score, that is, the arithmetic average of all the marks received by the student on the traditional scale, rounded to 2 (two) decimal places, for example 4.75.

The mark "**excellent**" is given if the student knows the content of the lesson in full, confidently demonstrates practical skills of varying degrees of complexity when working with a dummy, gives exhaustive answers and sets out the material without errors and inaccuracies, freely solves problems.

The mark "**good**" is given if the student knows the content of the lesson almost in full, demonstrates practical skills when working with a dummy with minor errors, gives correct but not exhaustive answers to questions, solves problems without significant errors.

The mark "**satisfactory**" is given if the student does not know the content of the lesson in full, demonstrates practical skills when working with a dummy with significant errors, does not teach the material systematically, but correctly answers a clarifying question, solves problems with errors.

The mark "**unsatisfactory**" is given if the student does not know the content of the lesson, does not demonstrate practical skills when working with a dummy, and solves problems with significant errors.

The current educational activities of students are monitored in practical classes in accordance with specific goals. The following means of determining the level of training of students are used: test control, solving situational problems, control of practical skills.

Assessment of student individual lessons

Grade for individual assignments is awarded to a student only if they are successfully completed and protected. The grade is added to current grades.

Assessment of students' independent work

Independent work of students, which is provided by the topic of the lesson along with classroom work, is assessed during the current control of the topic in the corresponding lesson. The assimilation of topics that are taken out only for independent work is checked during the test.

At the last practical lesson, the teacher is required to announce to students the results of their current academic performance, academic debt (if any).

Only those students who do not have academic debt and have an average score for current educational activities of at least 3.00 are allowed to the final certification.

Forms of final control: Differential test

Differentiated test: Conducted at the last practical lesson in the discipline. Consists of 5 practical skills. Each skill is worth 1 (one) or 0 (zero) points. As a result of drawing up practical skills, the student receives from 0 to 5 points. To pass the differentiated credit, the total must be at least 3 points.

The assessment of knowledge is carried out by the commission of the faculty of the department.

The final control of knowledge of discipline

The grade for the discipline is 50% of the current academic performance (the arithmetic mean of all the student's current grades) and 50% is the grade of

differential credit, which is set when evaluating theoretical knowledge and practical skills in accordance with the lists determined by the discipline program.

To assess a discipline on a 4-point traditional (national) scale, first the average score for the discipline is calculated as the arithmetic mean of two components: the average current score as the arithmetic average of all current grades (calculated as a number rounded to 2 (two) decimal places, for example, 4.76) traditional grade for differential credit.

The average grade for discipline is translated into a traditional grade from a discipline on a 4-point scale and is regarded as the ratio of this average arithmetic to the percentage of assimilation of the required amount of knowledge on the subject.

Example:

- *the average current score is 4.75*
- *differential grade - 4*
- *average grade for discipline – (4,75+4): 2 = 4,38*
- *traditional assessment for discipline - 4*

Average mark for discipline	**The ratio of the average student's score for discipline to the maximum possible value of this indicator**	**Score from a discipline on a 4-point scale (traditional assessment)**
4,5 – 5,0	90-100%	5
3,75 – 4,0	75-89%	4
3,0 – 3,7	60-74%	3

Individual calculation of the percentage of mastering the discipline is carried out using proportions.

Example:

Discipline grade (traditional scale)	**Percentage of knowledge acquisition in this subject**
5	100
3,5	X

X = (3,5 × 100) : 5 = 70%

Converting the number of points in a discipline into grades on a four-point (traditional) scale

Of particular methodological importance is the question of converting the result of a student's discipline study into a 200-point scale. This is necessary for the implementation of academic mobility of students, providing the student with the opportunity to continue their studies in this discipline in another university or in another country.

The resulting percentage of knowledge acquisition in this discipline allows for conversion into an assessment on a 200-point scale.

Example:

Percentage of knowledge acquisition in this subject	**Assessment on a 200-point scale**
100%	200
70%	X

X = (70 × 200) : 100 = 140 points

Further ranking according to the rating scale (ECTS) is carried out by the Information and Computing Center of the University

Independent student work

1. Preparation for practical classes - theoretical training and development of practical skills. Preparation for passing and assembling OSCE. Type of control: current control in practical classes.
2. Autonomous student work. Control type: protocols of mastering of topics, dif. test.
3. Individual autonomous student work. Control type: reports.

COURSE POLICY

Deadline and retake policy. Missed classes must be retaken within 2 weeks from the date of absence and before the exam. Retake of classes is carried out during special time (Thursday - 4th lesson (2 academic hours), Saturday - 1-3 lesson (6 academic hours)) with the prior coordination with the teacher. If the absence is older than 2 weeks long or student was absent 2 days or more, the student must obtain

written permission for retake from the dean's office. A student with the written permission of the dean's office has the right to retake the topics on which he received a grade "2", if his average score for the current academic activity in the discipline is less than 3.00.

Academic Integrity Policy:

Adherence to academic integrity by students provides:

-independent performance of educational tasks, tasks of current and final control of learning outcomes (for persons with special educational needs this requirement is applied taking into account their individual needs and opportunities);

-links to sources of information in the case of the use of ideas, developments, statements, information;

-compliance with the legislation on copyright and related rights;

-providing reliable information about the results of their own (scientific, creative) activities, used research methods and sources of information. Unacceptable in educational activities for participants in the educational process are:

-use of family or business ties to obtain a positive or higher assessment in the implementation of any form of control over learning outcomes or advantages in scientific work;

-use of prohibited auxiliary materials or technical means (cheat sheets, abstracts, headphones, telephones, smartphones, tablets, etc.) during control measures;

-passing the procedures of control of learning outcomes by fictitious persons.

Attendance and lateness policy:

Attendance is mandatory. The student to study the topic independently before the lesson and come to the lesson ready for questioning, discussion and evaluation. The retake of missed classes is carried out by agreement with the teacher during retake hours with the written permission from the dean's office. Being late for classes is not allowed. If a student is late for class, the teacher has the right not to let the student attend the class!

Mobile devices:

Mobile devices should be turned off or be on mute during classes, text messages, music listening, e-mail, social networking, etc. are prohibited. Electronic devices can be used only if the production needs of them (in agreement with the teacher).

Behavior in the audience:

During classes, the student must occupy the allotted workplace. It is forbidden to interrupt or distract a teacher or colleagues from the lesson, to engage in matters not related to the lesson. When interviewing a student, only the interviewed student

answers. To express a desire to ask a question, answer or supplement the answer, the student must raise his hand and wait until the teacher asks him.