Odesa National Medical University
Department of anesthesiology, intensive care and emergency medicine

Syllabus of the discipline "Anesthesiology"

Amount	12 credits / 360 hours
Semester, year of study	2 years of study, 3-4 semesters
Days, time, place	According to the schedule in the auditorium of the Department of Anesthesiology, IC and Emergency Medicine, Zabolotny str., 26
Teacher(s)	Oleg Oleksandrovych Tarabrin, H.W.S.T. of Ukraine, doctor of medicine, professor, head of the department of anesthesiology, IC and Emergency Medicine
Contact phone number	067-480-31-72
E-mail	oleg.tarabrin@onmedu.edu.ua
Workplace	Studying rooms of the Department of Anesthesiology, IC and Emergency Medicine, Zabolotny str., 26
Consultations	Face-to-face consultations: Friday - from 14:00 till 16:00, online consultations: Friday - from 14:00 till 16:00 Microsoft Teams or via Telegram/Viber

COMMUNICATION.

Communication with graduate students is carried out through face-to-face meetings. In case of transition to distance learning, communication with graduate students will be carried out using e-mail and programs: Microsoft Teams, Moodle, Telegram and Viber.

COURSE ABSTRACT.

Subject of discipline study

Subject of study of the academic discipline "Anesthesiology" are generally accepted, standard methods and techniques of analgesia during planned and urgent

surgical interventions in various fields of medicine, features, advantages and disadvantages of various types of anesthetic support, as well as the issue of a comprehensive approach to the patient when choosing a method of anesthesia, preoperative preparation and in early postoperative period.

Prerequisites and post-requisites of the course (the place of the discipline in the educational program): the educational discipline is tightly integrated into the system of fundamental and clinical medical disciplines, therefore, in the process of study, it is closely connected with the following disciplines:

- history of medicine: to know the historical development of scientific and practical activities in world and domestic anesthesiology;

-anatomy: application in clinical practice of knowledge of the clinical anatomy of organs and systems of life support, support of homeostasis.

-physiology: application in clinical practice of knowledge of the functional organization of organs and life support systems (nervous, respiratory, cardiovascular, gastrointestinal, hepatolienal, excretory, endocrine) and homeostasis support systems (water-electrolyte balance, acid-base balance, thermoregulation, blood coagulation and fibrinolysis);

-biochemistry: application of knowledge of metabolic organization in normal and critical conditions in clinical practice;

-pathophysiology: application in clinical practice of knowledge of the mechanisms of occurrence of critical conditions and their further course;

- pharmacology: application in clinical practice of knowledge of pharmacodynamics, pharmacokinetics and interaction of drugs used in anesthesiology;

- internal medicine, pediatrics, gerontology: application in clinical practice of knowledge of etiology, pathogenesis, clinic, treatment approaches, age, gender, medico-social features of diseases of organs and systems;

- surgical diseases, children's surgery: application in clinical practice of knowledge of etiology, pathogenesis, clinic, treatment approaches, main stages of surgical interventions, age, gender, medical and social characteristics of surgical diseases;

- the public health: to apply in clinical practice the organizational, legal and moral and ethical provisions of the production and innovative research activities of the anesthesiology service.

The purpose of discipline

The purpose of teaching the educational discipline "Anesthesiology" is the training of highly qualified scientific and scientific-pedagogical personnel, the formation and development of their competence in accordance with professional standards; formation of skills and abilities in teaching the discipline, execution of final original scientific research, which contributes to the creation, expansion and development of scientific knowledge.

Tasks of the discipline

The main tasks of studying the discipline "Anesthesiology" are the ability to solve complex problems in the field of professional medical activity, to conduct original scientific research and to carry out research and innovation activities in the field of health care based on a deep rethinking of the existing and creation of new coherent theoretical or practical knowledge and /or professional practice. Provision of doctoral degree holders, pedagogical mastery skills regarding the implementation of the results of scientific research in the educational process.

Expected results.

A graduate student (applicant) should know:

- nomenclature, components and systematization of types of anesthesia, pharmacological agents for anesthesia, techniques of general, local and regional anesthesia, special cases in anesthesiology, intensive therapy;
- modern approaches and methods for carrying out interdisciplinary scientific research;
- the theory of the cognitive process and the technology of the pedagogical process;
- modern achievements in the field of scientific research.

A graduate student (applicant) must be able to:

- conduct training sessions and consultations;
- carry out various types of anesthesiological care, manipulations by specialty;
- provide emergency care to patients, master CPR;
- analyze information in modern reference books, scientific and professional periodicals;
- conduct research according to the selected methods;
- interpret the results of modern research methods;
- conduct a critical analysis of research;
- receive and interpret new scientific facts that expand the scope of knowledge in the researched problem;

COURSE DESCRIPTION

Forms and methods of education

The study discipline "Anesthesiology" consists of 12 ECTS credits (360 hours): 180 classroom hours (lectures, seminar) and 180 hours of self-education work.

In the process of conducting lectures and seminars, the following teaching methods are expected to be used:

- according to the dominant means of learning: verbal, visual
- solution of situational tasks
- discussions on problematic issues
- individual control interview
- knowledge control tests
- practical classes using computer equipment (universal and special software),
- self-education work,
- individual consultations,
- distance learning (with the involvement of higher education holders of the degree of Doctor of Philosophy in internationally recognized courses and educational resources).

Content of the academic discipline.

Thematic plan of lectures

Topic 1. Historical features of analgesia and the development of anesthesiology as a science and clinical specialty

Topic 2. Structure and organization of work of anesthesiology service in Ukraine

Topic 3. Chemical and physiological aspects of nociceptive and antinociceptive processes

Topic 4. Components and systematization of types of anesthesia

Topic 5. Physiology of blood circulation and anesthesia

Topic 6. Physiology of breathing and anesthesia

Topic 7. Neurophysiology and anesthesia

Topic 8. Violations of water-electrolyte exchange and acid-base state

Topic 9. Kidney physiology and anesthesia

Topic 10. Clinical pharmacology of muscle relaxants

Topic 11. Pharmacology of inhalation anesthetic agents

Topic 12. Clinical pharmacology of drugs for general intravenous anesthesia

Topic 13. Clinical pharmacology of local anesthetics

Topic 14. Technique of general intravenous anesthesia with and without artificial ventilation

Topic 15. Technique of inhalation anesthesia

Topic 16. Regional anesthesia. Types of blockades. Using ultrasound to verify and locate nerves

Topic 17. Complications of general anesthesia

Topic 18. Complications of regional anesthesia

Topic 19. Infusion solutions

Topic 20. Perioperative infusion therapy

Topic 21. Transfusion therapy

Topic 22. Complications of transfusion therapy

Topic 23. Alternative options for transfusion therapy

Topic 24. Anesthesiologic care for patients with pathology of the cardiovascular system

Topic 25. Anesthesiologic care for patients with respiratory diseases

Topic 26. Anesthesiologic care for patients with endocrine pathology

Topic 27. Anesthesia in cases of comorbid nervous and mental diseases

Topic 28. Anesthesiologic care for patients with alcoholism and drug addiction

Topic 29. Anesthesiologic care for obese patients. Bariatric surgery

Topic 30. Analgesia during organ transplantation

Thematic plan of seminar classes

Topic 1. Components and systematization of types of anesthesia

Topic 2. Narcotic respiratory apparatus and anesthesiological tools. Perioperative monitoring

Topic 3. Physiology of blood circulation and anesthesia

Topic 4. Physiology of breathing and anesthesia

Topic 5. Neurophysiology and anesthesia

Topic 6. Violation of water-electrolyte balance

Topic 7. Acid-base state

Topic 8. Kidney physiology and anesthesia

Topic 9. Clinical pharmacology of muscle relaxants

Topic 10. Pharmacology of inhalation anesthetic agents

Topic 11. Clinical pharmacology of drugs for general intravenous anesthesia

Topic 12. Clinical pharmacology of local anesthetics

Topic 13. Hospital interaction and polypharmacy in anesthesiology

Topic 14. Preoperative period

Topic 15. Premedication

Topic 16. Technique of general intravenous anesthesia with artificial lung ventilation. The technique of general intravenous anesthesia without artificial ventilation

Topic 17. The technique of inhalation mask anesthesia.

The technique of inhalation endotracheal anesthesia

Topic 18. Spinal anesthesia

Topic 19. Epidural anesthesia

Topic 20. Complications from the cardiovascular and respiratory system during general anesthesia, complications of intubation, difficult intubation. Violation of thermoregulation (malignant hyperthermia, hypothermia) during general anesthesia

Topic 21. Complications of regional anesthesia during surgical intervention. Postoperative complications of regional anesthesia

Topic 22. Complications from the cardiovascular and respiratory systems in the postoperative period. Complications from the CNS and peripheral nervous system in the postoperative period, postoperative tremor

Topic 23. Postoperative analgesia

Topic 24. Infusion solutions

Topic 25. Perioperative infusion therapy

Topic 26. Transfusion therapy. Peculiarities of management of patients with congenital and acquired pathology of the hemostasis system

Topic 27. Complications of transfusion therapy

Topic 28. Alternative options for transfusion therapy

Topic 29. Anesthesia in cardiac surgery

Topic 30. Anesthesia in thoracic surgery

Topic 31. Anesthesia in abdominal surgery

Topic 32. Anesthesia in urology

Topic 33. Anesthesia in obstetrics and gynecology

Topic 34. Anesthesia in neurosurgery

Topic 35. Anesthesia in vascular surgery

Topic 36. Anesthesia in otolaryngology

Topic 37. Anesthesia in ophthalmic surgery

Topic 38. Anesthesia for endoscopic interventions and "one-day" surgery

Topic 39. Anesthesiologic care for patients with pathology of the cardiovascular system

Topic 40. Anesthesiologic care for patients with respiratory diseases

Topic 41. Anesthesiologic care for patients with endocrine pathology

Topic 42. Anesthesia in cases of comorbid nervous and mental diseases

Topic 43. Anesthesiologic care for patients with alcoholism and drug addiction

Topic 44. Anesthesiologic care for obese patients. Bariatric surgery

Topic 45. Principles of pain relief in elderly patients

Topic 46. Analgesia during organ transplantation

Thematic plan of the student's self-education work (SRS)

Topic 1. Historical features of analgesia and the development of anesthesiology as a science and clinical specialty

Topic 2. Structure and organization of work of anesthesiology service in Ukraine

Topic 3. Chemical and physiological aspects of nociceptive and antinociceptive processes

Topic 4. Components and systematization of types of anesthesia

Topic 5. Narcosis station equipment and anesthesiological tools. Perioperative monitoring

Topic 6. Physiology of blood circulation and anesthesia

Topic 7. Physiology of breathing and anesthesia

Topic 8. Neurophysiology and anesthesia

Topic 9. Violation of water-electrolyte balance

Topic 10. Acid-base state

Topic 11. Kidney physiology and anesthesia

Topic 12. Clinical pharmacology of muscle relaxants

Topic 13. Pharmacology of inhalation anesthetic agents

Topic 14. Clinical pharmacology of drugs for general intravenous anesthesia

Topic 15. Clinical pharmacology of local anesthetics

Topic 16. Hospital interaction and polypharmacy in anesthesiology

Topic 17. Preoperative period

Topic 18. Premedication

Topic 19. Technique of general intravenous anesthesia with artificial ventilation

Topic 20. Technique of general intravenous anesthesia without artificial ventilation

Topic 21. Technique of inhalation mask anesthesia

Topic 22. Technique of inhalation endotracheal anesthesia

Topic 23. Spinal anesthesia

Topic 24. Epidural anesthesia

Topic 25. Complications of general anesthesia

Topic 26. Complications of regional anesthesia

Topic 27. Complications of the early postoperative period

Topic 28. Postoperative analgesia

Topic 29. Infusion solutions

Topic 30. Perioperative infusion therapy

Topic 31. Transfusion therapy

Topic 32. Peculiarities of management of patients with congenital and acquired pathology of the hemostasis system

Topic 33. Complications of transfusion therapy

Topic 34. Alternative options for transfusion therapy

Topic 35. Anesthesia in cardiac surgery

Topic 36. Anesthesia in thoracic surgery

Topic 37. Anesthesia in abdominal surgery

Topic 38. Anesthesia in urology

Topic 39. Anesthesia in obstetrics and gynecology

Topic 40. Anesthesia in neurosurgery

Topic 41. Anesthesia in vascular surgery

Topic 42. Anesthesia in otolaryngology

Topic 43. Anesthesia in ophthalmic surgery

Topic 44. Anesthesia for endoscopic interventions and "one-day" surgery

Topic 45. Anesthesiologic care for patients with pathology of the cardiovascular system

Topic 46. Anesthesiologic care for patients with respiratory diseases

Topic 47. Anesthesiologic care for patients with endocrine pathology

Topic 48. Anesthesia in cases of comorbid nervous and mental diseases

Topic 49. Anesthesiologic care for patients with alcoholism and drug addiction

Topic 50. Anesthesiologic care for obese patients. Bariatric surgery

Topic 51. Principles of pain relief in elderly patients

Topic 52. Analgesia during organ transplantation

Recommended literature

Basic^

1. A. Ilko. Anesthesiology, intensive care and resuscitation. Medicine
2018. 39-45. 4. Anesthesiology and intensive care / L. P. Chepkii, L. V. Usenko, Yu. Yu. Kobelyatskyi, S. O. Dubrov; edited by FS Glumcher. - Kyiv: VSV "Medicine" 2021, pp. 310-318.
2. Anesthesiology and intensive care: textbook / F.S. Glumcher, L.P.
Chepky, L. V. Usenko, etc.; ed. F.S. Glumcher – 4th edition, - K.: VSV "Medicine", 2021. – 360 p.
3. 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.
4. Local protocol for providing medical care to patients with
polytrauma Order of the Health Department of the Odesa Regional State Administration No. 301 of May 20, 2019."
5. Clinical routes and clinical guidelines for acute surgical pathology
stomach "Order of the Department of Health Protection of the Odesa Regional State Administration dated April 6, 2018."
military serviceman in tactical medicine. - K.: "MP Lesya", 2015. - 148 p.
6. Order of the Moz of Ukraine No. 446 dated February 22, 2019 "Some issues of continuous professional development of doctors".
7. Order No. 1192 of July 11, 2022 of the Ministry of Health
of Ukraine "On the approval of the Standards of medical care "Provision of medical care to victims of hemorrhagic shock at the pre-hospital and hospital stages of trauma"".
8. Order No. 1269 of 06/05/2019 of the Ministry of Health of Ukraine
"On the approval and implementation of medical and technological documents on the standardization of emergency medical care."
9. Order of the Ministry of Health of Ukraine dated March 2, 2022 No. 391 "On approval
Methodical recommendations on the phasing of providing medical aid to the wounded and injured".
10. Order of the Ministry of Health of Ukraine dated 03.03.2022 No. 402 "On approval
Methodical recommendations for medical assistance to burn victims during the evacuation stages".
11. Order of the Ministry of Health of Ukraine dated 24.02.2022 No. 368 "On approval of the Standard
of emergency medical care "Medical triage during mass arrival of victims at the early hospital stage"".
12. Order of the Ministry of Health of Ukraine dated March 15, 2022 No. 488 "On approval

Methodological recommendations for the provision of emergency medical care to victims at the pre-hospital stage in the conditions of hostilities/martial law".
13. Order of the Ministry of Health of Ukraine dated 18.05.2022 No. 823 " On approval of the Standard
of medical care "Rational use of antibacterial and antifungal drugs for therapeutic and preventive purposes ".
14. Order of the Ministry of Health of Ukraine dated February 28, 2022 No. 389 "On approval
Methodical recommendations on primary surgical treatment of gunshot wounds".
15. Order of the Ministry of Health of Ukraine dated 05.03.2022 No. 418 "On approval
Methodical recommendations regarding the application of the protocol of massive transfusion of blood components to the victims during the evacuation stages".
16. Order of the Ministry of Health of Ukraine dated May 9, 2022 No. 761 " On approval of the list
medical equipment to meet the needs of the health care sector in the conditions of martial law .
17. Order dated 09.03.2022 No. 441 "On approval of procedures for providing pre-medical assistance to persons in emergency situations".

Additional:

1. Order of the Ministry of Health of Ukraine dated 13.03.2022 No. 478 "On approval
Methodical recommendations on the organization of providing emergency medical aid to victims of chemical agents during the evacuation stages".
2. Order of the Ministry of Health of Ukraine dated 17.03.2022 No. 496 "Some issues of providing
of primary medical care in the conditions of martial law".
3. Helsinki declaration of the World Medical Association "Ethical principles of medical research involving a person as a research object" dated June 1, 1964, last access October 28, 2021, https://zakon.rada.gov.ua/laws/show/990_005#Text .
4. Notes on Clinical Airway Management. D. John Doyle. January 2018.- 150 p.
5. Atlas of common pain syndromes. Steven D. Waldman. Fourth edition. Philadelphia, PA: Elsevier, 2019. – 555 p.
6. Complications of Regional Anesthesia: Principles of Safe Practice in Local and Regional Anesthesia. Brendan T. Finucane, Ban CH Tsui/ Springer Internat. Publ. 2017. – 494 p.
7. Hiroyuki S, Eichi I. General anesthesia for elective cesarean section in resource-limited settings. J World Fed Soc Anaesth. 2019 September
8. Pediatric Anesthesiology Review: Clinical Cases for SelfAssessmentRobert Holzman, Thomas Mancuso, Joseph Cravero, James DiNardoEdition 3 (2021)

Information resources

1. Ministry of Health of Ukraine - https://moz.gov.ua/
2. Association of Anesthesiologists of Ukraine - https://aaukr.org/
3. Association of obstetric anesthesiologists of Ukraine - https://aaau.org.ua/
4. Official website of the American Association of Anesthesiologists http://www.asahq.org/homepageie.html
5. Official website of the American Association of Pediatric Anesthesiology http://www.pedsanesthesia.org
6. Official website of the Association of Anesthesiologists of Kyiv http://http://criticalcare.kiev.ua
7. The official website of the Association of Anesthesiologists of Ukraine - http://aay.org.ua
8. The official website of the British scientific periodical "British Journal of Anaesthesia" - http://www.bja.oupjournals.org
9. The official website of the British scientific periodical "British Medical Journal" - http://www.bmj.com
10. The official site of the British scientific periodical "History of Anesthesia Society" - http://www.histansoc.org.uk
11. Official website of the British Association of Obstetric Anaesthesiology http://www.oaa-anaes.ac.uk
12. Official website of the European Association of Anesthesiologists http://www.euroanesthesia.org
13. Official website of the European Intensive Care Association http://www.esicm.org
14. The official website of the European Association of Parenteral and Enteral nutrition - http://www.espen.org
15. Official website of the European Association of Regional Anesthesia http://www.esraeurope.org
16. The official website of the Canadian scientific periodical "Canadian Journal of Anaesthesia" - http://www.cja-jca.org
17. The official website of the international scientific periodical "Anesthesiology" - http://www.anesthesiology.org
18. The official website of the international scientific periodical "Anesthesia and Analgesia" - http://www.anesthesia-analgesia.org
19. The official website of the international scientific periodical "The Lancet" - http://www.thelancet.com
20. Search resource of medical literature: section "Anesthesiology and intensive therapy" - http://www.twirpx.com/files/medicine/anaesthesiology/anesthesiology/
21. Search resource of medical literature "Cochrane Collaboration" http://www.cochrane.org
22. Medical literature search resource "PubMed"

http://www.ncbi.nlm.nih.gov/PubMed/
23. Search resource of scientific literature "Scopus" - https://www.scopus.com
Search resource of scientific literature "Web os Science"
http://ipscience.thomsonreuters.com/product/web-of-science/

EVALUATION

Current control is carried out at seminar classes in accordance with formulated tasks for each topic. When evaluating educational activities, preference is given to standardized control methods: oral survey, structured written works, discussions, role-playing games, reports. When mastering each topic for the current educational activity, the student is given grades on a 4-point traditional scale. The current academic performance is calculated as the average current score, i.e., the arithmetic average of all grades received by the graduate student (student) on a traditional scale, rounded to 2 (two) decimal places, for example 4.75.

Evaluation of current discipline control:

The meaning of the **"excellent" rating** : the graduate student shows special creative abilities, knows how to acquire knowledge independently, finds and processes the necessary information without the help of a teacher, knows how to use the acquired knowledge and skills to solve problems, is able to produce innovative ways of solving problems, convincingly argues answers, independently reveals his own gifts and inclinations.
The value of the **"good" grade** : the graduate student is fluent in the studied amount of material, applies it in practice, freely solves exercises and problems in standard situations, independently corrects the mistakes made, the number of which is insignificant.
The value of the rating is **"satisfactory"** : the graduate student is able to master a significant part of the theoretical material, but mainly in a reproductive form, demonstrates knowledge and understanding of the main provisions, can analyze the educational material with the help of the teacher, correct errors, among which there are a significant number of essential ones.
The value of the rating **is "unsatisfactory"** : the graduate student has mastered the material at the level of individual fragments, which constitute a small part of the educational material. Only those graduate students who have no academic debt and have an average score for the current educational activity of at least 3.00 are admitted to the final certification.

Forms and methods of final control

The final control in the discipline "Anesthesiology" is an exam.

At the end of the study of the discipline, the current success rate is calculated as the average current score, that is, the arithmetic average of all the grades received by the graduate student on a traditional scale, rounded to two decimal places .
A graduate student (seeker) is admitted to the final examination (examination) only if there is no academic debt and the average score for the current educational activity is not less than 3.00. The grade for the discipline is the arithmetic average of two components (calculated as a number rounded to a whole):

1) average current score as the arithmetic average of all current grades;
2) traditional exam grade.

The obtained average score for the discipline is converted into a score on a 200-point scale by multiplying the arithmetic average by 40.

Scale for assessing the level of mastery of the discipline

Assessment on a 200-point scale	Evaluation on a national scale	
185 - 200	Perfectly	5
151 - 184	Fine	4
120-150	Satisfactorily	3
<120.0	Unsatisfactorily	2

Evaluation of self-education work:

Assessment of students' self-education work, which is provided for in the topic along with classroom work, is carried out during the current control of the topic in the corresponding classroom session, as well as at the final control (exam).

The assessment of success in the discipline is a rating and is given on a 200-point scale and is defined according to the E CTS system and the traditional scale adopted in Ukraine.

COURSE POLICY ("rules of the game")

Deadlines and Rescheduling Policy

Tasks must be completed on time according to the deadline. For untimely completion of the assignment, the graduate student receives an unsatisfactory grade. If the student of higher education was absent from classes for any reason, then the practice is carried out within the deadlines set by the teacher in accordance with the "Regulations on the organization of the educational process at ONMedU" (link to the regulations on the university's website https://onmedu.edu.ua/wp - content/uploads/2020/01/osvitnijproces.pdf) . Reassembly is carried out in accordance with the approved schedule. Policy on academic integrity The policy of the educational component is based on the principles of academic integrity (link to the regulations on the university website https://onmedu.edu.ua/wp-content/uploads/2020/07/polozhennja-prodobrochesnist.pdf) and is determined by the system of requirements, which the teacher presents to the applicant when studying the educational component:

- independent performance of educational tasks, tasks of current and final control of learning results (for persons with special educational needs, this requirement is applied taking into account their individual needs and capabilities);
- references to sources of information in the case of using ideas, developments, statements, information.

Attendance and Tardiness Policy

To obtain a satisfactory grade, it is mandatory to attend and work in classroom classes. A graduate student is allowed to be late for no more than 10 minutes.

Mobile devices

It is permissible to use mobile devices during the lesson with the teacher's permission.

Behavior in the audience

While in the audience, the following values should be cultivated: respect for colleagues; tolerance for others; receptivity and impartiality; argumentation of agreement or disagreement with the opinion of other participants in the discussion, as well as one's own opinion; respecting the dignity of the opponent's personality during communication; compliance with the ethics of academic relationships.