



Syllabus on the discipline “Anesthesiology”

| 1. General information | |
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| Faculty Faculty of Post-graduate Education | dentistry |
| Educational program (field, specialty, level of higher education, form of education) | 22 Healthcare, 221 “Dentistry”, second (Master’s) level of higher education, full-time |
| Academic year | 5th |
| Discipline name, code (electronic identification at the Danylo Halytskyi Lviv National Medical University website) | OK 42.1. Anesthesiology and Intensive Care |
| Department (name, address, phone, e-mail) | Department of Anesthesiology and intensive care, 70010, Lviv, 7 Chernihivska str. |
| Chair of the Department (e-mail) | Verbovsky R.M., MD, PhD, associate professor kaf_anesthesiology_FPGE@meduniv.lviv.ua |
| Educational year (year of the discipline study) | 5th |
| Semester (semester of the discipline study) | IX-X |
| Type of the discipline/module (mandatory/optional) | Mandatory |
| Teaching staff (names, surnames, scientific degrees and titles, e- mails) | Olha Filyk, MD, PhD, associate professor, doctor_555@ukr.net Volodymyr Mishchuk, MD, PhD, associate professor, mishchukdoc@gmail.com Myroslava Harbar, MD, PhD, associate professor, mirasvit@yahoo.com Oleksandr Kolupayev, MD, assistant professor, kolupayevs@gmail.com Ostap Turkevych, MD, assistant professor, turkevychostap@gmail.com |
| Person, responsible for syllabus (the person to whom comments on the syllabus should be given, e-mail) | Olesya Ilchyshyn, MD, assistant professor, head teacher, lesja.rav@gmail.com Myroslava Harbar, MD, PhD, associate professor, mirasvit@yahoo.com |
| Number of ECTS credits | 1,5 |
| Number of hours (lectures / practical classes / self-reliance work) | 45 (lectures – 0, practical classes – 24, self-work – 21) |
| Language | Ukrainian, English |
| Information on the consultations | Consultations are held in accordance with the schedule approved by the Chair of the department |
| Address, telephone and rules of operation of the clinical base, office | Lviv Regional Clinical Hospital, 79010, Lviv, Chernihivska str., 7, ph. +38(032) 2368470; +38 (050)5379519; +38 (067) 7314938 First Medical Union St. Panteleimon Hospital, Lviv, |

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| | Mykolaichuka str., 9, First Medical Union St. Luka Hospital, Lviv, Navrotskogo str., 23, First Medical Union St. Nicholas Hospital, Lviv, P.Orlyka str, 4, |
| 2. Short resume of the discipline | |
| Studying anesthesiology and intensive care will help students to get a complete understanding of anesthesiology and intensive care as an independent section of clinical discipline that studies and develops the theory and practice of protecting the body from extreme influences (aggression) and uses common methods for regulating or temporarily substitution of vital functions when they are injured (terminal states, anesthesia, special research methods, etc.). | |
| 3. Objective and tasks of the discipline | |
| <p>Anesthesiology and intensive care as an academic discipline is an integral part of clinical medicine, so the study of the basic principles of this field of science is an important point in training a doctor of any specialty.</p> <p>It is based on the study of human anatomy, histology, biochemistry, physiology, pathomorphology, pathophysiology, pharmacology of internal medicine, pediatrics and integrates with these disciplines.</p> <p>This discipline is a fundamental for students concerning intensive care and emergencies that occur in the clinic of internal medicine, pediatrics, surgery, traumatology and orthopedics, neurosurgery, urology, obstetrics and gynecology and other disciplines, which use methods of anesthesia and intensive care. This involves the integration of teaching with these disciplines and the formation of skills to apply knowledge in the process of further study and professional activities.</p> <p>The study the discipline provides an opportunity to gain practical skills and develop professional skills for diagnosis, emergency and intensive care in clinical practice.</p> | |
| 4. Goals and Objectives of the discipline | |
| <ol style="list-style-type: none"> 1. Goals. The purpose of the course is developing student's competence in the field of clinical medicine. The study of anesthesiology and intensive care will help students gain a holistic view of anesthesiology and intensive care as an independent section of clinical disciplines, which studies and develops the theory and practice of protecting the body from extreme influences (aggression) and uses common methods of regulation or temporary replacement of vital functions in cases of their violation (terminal conditions, anesthesia, special research methods, etc.). 2. Objectives. Acquisition of knowledge by students, in particular, to be able to interpret the main clinical manifestations and laboratory data of disorders of vital functions; be able to plan examinations and treatment of patients with disorders of vital functions; demonstrate mastery of diagnosis and care for major syndromes; diagnose signs of clinical death and terminal conditions, perform cardiopulmonary resuscitation; apply general principles and methods of anesthesiological support of various surgical interventions; use the basic principles of emergency care for victims of man-made and natural disasters; apply the basic algorithms of intensive care of emergencies. 3. Competencies and results of course completion, the formation of which provides the study of the discipline (general and specific competencies). <p>General:</p> <ul style="list-style-type: none"> - Ability to abstract thinking, analysis and synthesis. - Ability to apply knowledge in practical situations. - Ability to conduct research at the appropriate level. - Ability to learn and master modern knowledge. - Ability to identify, pose and solve problems. - Ability to team work. <p>Specific (professional, subject):</p> <ul style="list-style-type: none"> - To know etiology, pathogenesis, pathophysiology of clinical death and terminal states; - To know diagnostic methods and clinical course of the main syndromes, which | |

- accompany serious violations of vital functions;
- To know algorithms of intensive care of urgent states;
 - To know general principles and methods of anesthetic provision of surgical interventions;
 - To be able to establish a diagnosis of clinical death and conduct reanimation measures;
 - To be able to determine the scope of surveys and to evaluate them in case of violations of vital functions;
 - To be able to make an intensive care plan for urgent conditions;
 - To be able to must acquire practical skills:
 - To be able to ensure airways patency;
 - To be able to intubate of the trachea on the mannequin;
 - To be able to perform mechanical ventilation of the lungs by the simple techniques ("mouth to mouth", "mouth to nose");
 - To be able to perform mechanical ventilation of the lungs with the Ambu bag;
 - To be able to calculate and correct daily water balance;
 - To be able to calculate deficiencies and correct the main electrolytes (potassium, sodium, chlorine);
 - To be able to determine and correct the type of acid-bace disorders.

4. Course prerequisites

To successfully exquisite and master the competencies of this discipline, it is advisable to obtain knowledge in such disciplines as: "Human Anatomy", "Histology", "Biochemistry", "Physiology", "Pathomorphology", "Pathophysiology", "Pharmacology of Internal Medicine", "Pediatrics".

5. Study results according to the Program

| Code of the result of study. (categories: <i>Kn – knowledge,</i> <i>Ab – ability,</i> <i>C – competence,</i> <i>AR – autonomy and</i> <i>responsibility).</i> | Content of the study result | Link to the code in the matrix of competencies. <i>Symbol of the Program</i> <i>Result of study Code in the Higher Education Standard.</i> |
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| Kn-1 | Knowlegy on the etiology, pathogenesis, pathophysiology hypoxia and hypercapnia | PR-1 |
| Kn-2 | Knowlegy on the methods of diagnosis and clinical course of the main syndromes that accompany severe disorders of vital functions | PR-2 |
| Kn-3 | Knowlegy on the algorithms of intensive care of emergencies | PR-3 |
| Kn-4 | Knowlegy on the general principles and methods of anesthesiological support of surgical interventions | PR-4 |
| Ab-1 (2) | Ability to determine the scope of examinations and evaluate them in violation of vital functions | PR-6 |
| Ab-2 (3) | Ability to make a plan of intensive care in emergencies; | PR-7 |
| Ab-3 (4) | Ability to learn and master modern knowledge | PR-8 |
| Ab-4 (5) | Ability to identify, pose and solve problems | PR-9 |
| Ab-5 (6) | Ability to work independently with the protocols of the Ministry of Health of | PR-10 |

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| | Ukraine and international and regional standards in the field of health care | |
| Ab-6 (7) | Ability to ensure airway patency | PR-11 |
| Ab-7 (8) | Ability to intubate the trachea on a mannequin | PR-12 |
| Ab-8 (9) | Ability to perform mechanical lung ventilation with an Ambu bag | PR-13 |
| Ab-9 (11) | Ability to calculate and adjust the daily water balance | PR-15 |
| Ab-10 (12) | Ability to determine the type of disorders of acid-base status and their correction | PR-16 |
| C-1 | Ability to analyse medical information. | PR-17 |
| C-2 | Ability to do research at the appropriate level. | PR-18 |
| Ar-1 | To work independently with the modern Ukrainian and international protocols. | PR-19 |
| Ar-2 | To create clinical cases for group discussion. | PR-20 |

6. Discipline format and scope

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| Discipline format (full-time/parttime) | Full-time | |
| Type of classes | Number of hours | Number of groups |
| practical classes | 24 | 1 |
| self-work | 21 | |

7. Topics and scope of the discipline

| Code of the class type | Topic | Scope of study | Code of the result of study | Teaching staff |
|------------------------|-------------------------|--|---|---|
| P-1 (2) | General Anesthesiology | 1. Checking the mastering of the list of questions from the thematic plan. 2. Discussion of issues for self-control. 3. Solving clinical cases. 4. Clarification of problematic issues. 5. Summarizing the class | Kn-1, Kn-2, Kn-4, Ab-1, Ab-3, Ab-4, Ab-5, Ab-6, Ab-7, Ab-8, Ab-9, Ab-10, C-1 | Kolupayev Oleksandr, MD Olha Filyk, MD, PhD Myroslava Harbar, MD, PhD Ostap Turkevych, MD Volodymyr Mishchuk, MD, PhD |
| P-2 (3) | Clinical Anesthesiology | 1. Checking the mastering of the list of questions from the thematic plan. 2. Discussion of issues for self-control. 3. Solving clinical cases. | Kn-2, Kn-3, Kn-4, Ab-1, Ab-2, Ab-3, Ab-4, Ab-5, Ab-6, Ab-7, Ab-8, Ab-9, C-1, Ar-1 | Kolupayev Oleksandr, MD Olha Filyk, MD, PhD Myroslava Harbar, MD, PhD Ostap Turkevych, MD Volodymyr |

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| | | 4. Clarification of problematic issues. 5. Summarizing the class | | Mishchuk, MD, PhD |
| P-3 (4) | Diagnosis and Management of Fluid, Electrolyte and Acid-Base Balance Disorders | 1. Checking the mastering of the list of questions from the thematic plan. 2. Discussion of issues for self-control. 3. Solving clinical cases. 4. Clarification of problematic issues. 5. Summarizing the class | Kn-2, Kn-3, Ab-1, Ab-2, Ab-3, Ab-4, Ab-5, Ab-9, Ab-10, C-1 | Kolupayev Oleksandr, MD Olha Filyk, MD, PhD Myroslava Harbar, MD, PhD Ostap Turkevych, MD Volodymyr Mishchuk, MD, PhD |
| P-4 (6) | Acute Poisonings and Comatose Conditions. | 1. Checking the mastering of the list of questions from the thematic plan. 2. Discussion of issues for self-control. 3. Solving clinical cases. 4. Clarification of problematic issues. 5. Summarizing the class | Kn-2, Kn-3, Ab-1, Ab-4, Ab-5, Ab-9, Ab-10, Ar-1, Ar-2, C-1 | Kolupayev Oleksandr, MD Olha Filyk, MD, PhD Myroslava Harbar, MD, PhD Ostap Turkevych, MD Volodymyr Mishchuk, MD, PhD |
| P-5 (7) | Acute Respiratory Failure | 1. Checking the mastering of the list of questions from the thematic plan. 2. Discussion of issues for self-control. 3. Solving clinical cases. 4. Clarification of problematic issues. 5. Summarizing the class | Kn-2, Kn-3, Ab-1, Ab-4, Ab-5, Ab-6, Ab-7, Ab-8, Ar-1, Ar-2, C-1 | Kolupayev Oleksandr, MD Olha Filyk, MD, PhD Myroslava Harbar, MD, PhD Ostap Turkevych, MD Volodymyr Mishchuk, MD, PhD |
| P-6 (8) | Diseases of the Respiratory System | 1. Checking the mastering of the list of questions from the thematic | Kn-2, Kn-3, Ab-1, Ab-4, Ab-5, Ab-6, Ab-7, Ab-8, Ar-1, Ar-2, C- | Kolupayev Oleksandr, MD Olha Filyk, MD, PhD |

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| | | <p>plan. 2. Discussion of issues for self-control.</p> <p>3. Solving clinical cases.</p> <p>4. Clarification of problematic issues.</p> <p>5. Summarizing the class</p> | 1 | <p>Myroslava Harbar, MD, PhD</p> <p>Ostap Turkevych, MD</p> <p>Volodymyr Mishchuk, MD, PhD</p> |
| P-7 (9) | Acute Disorders of Circulation | <p>1. Checking the mastering of the list of questions from the thematic plan. 2. Discussion of issues for self-control.</p> <p>3. Solving clinical cases.</p> <p>4. Clarification of problematic issues.</p> <p>5. Summarizing the class</p> | Kn-1, Kn-3, Kn-2, Ab-1, Ab-2, Ab-3, Ab-4, Ab-5, Ab-9, Ar-1, Ar-2, C-1 | <p>Kolupayev Oleksandr, MD</p> <p>Olha Filyk, MD, PhD</p> <p>Myroslava Harbar, MD, PhD</p> <p>Ostap Turkevych, MD</p> <p>Volodymyr Mishchuk, MD, PhD</p> |
| P-8 (10) | Shock and Traumatic Injuries | <p>1. Checking the mastering of the list of questions from the thematic plan. 2. Discussion of issues for self-control.</p> <p>3. Solving clinical cases.</p> <p>4. Clarification of problematic issues.</p> <p>5. Summarizing the class</p> | Kn-1, Kn-2, Kn-3, Ab-1, Ab-2, Ab-3, Ab-4, Ab-5, Ab-9, Ar-1, Ar-2, C-1 | <p>Kolupayev Oleksandr, MD</p> <p>Olha Filyk, MD, PhD</p> <p>Myroslava Harbar, MD, PhD</p> <p>Ostap Turkevych, MD</p> <p>Volodymyr Mishchuk, MD, PhD</p> |
| SW-1 (<i>self-work</i>) | Intensive care in trauma, crash-syndrome, electric shock | <p>List of questions to the topic processing.</p> <p>Preparation of answers to selfcontrol questions.</p> <p>Preparation of clinical cases.</p> | Kn-1, Kn-2, Kn-3, Ab-1, Ab-2, Ab-3, Ab-4, Ab-5, Ab-10, C-1, C-2, Ar-1 | <p>Kolupayev Oleksandr, MD</p> <p>Olha Filyk, MD, PhD</p> <p>Myroslava Harbar, MD, PhD</p> <p>Ostap Turkevych, MD</p> <p>Volodymyr Mishchuk, MD, PhD</p> |
| SW-2 | Clinic and | List of questions | Kn-1, Kn-2, Kn- | Kolupayev |

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| | Diagnosis of Acute heart failure and arrhythmias. Basic principles of intensive care. | to the topic processing. Preparation of answers to self control questions. Preparation of clinical cases. | 3, Ab-1, Ab-2, Ab-3, Ab-4, Ab-5, Ab-6, Ab-7, Ab-8, C-1, C-2, Ar-1, Ar-2 | Oleksandr, MD Olha Filyk, MD, PhD Myroslava Harbar, MD, PhD Ostap Turkevych, MD Volodymyr Mishchuk, MD, PhD |
| SW-3 | Intensive care of seizures and hyperthermia. | List of questions to the topic processing. Preparation of answers to selfcontrol questions. Preparation of clinical cases. | Kn-1, Kn-2, Kn-3, Ab-1, Ab-2, Ab-3, Ab-4, Ab-5, C-1, C-2, Ar-1, Ar-2 | Kolupayev Oleksandr, MD Olha Filyk, MD, PhD Myroslava Harbar, MD, PhD Ostap Turkevych, MD Volodymyr Mishchuk, MD, PhD |
| SW-4 | Clinical signs of hypoxia and hypercapnia | List of questions to the topic processing. Preparation of answers to selfcontrol questions. Preparation of clinical cases. | Kn-1, Kn-2, Kn-3, Ab-1, Ab-3, Ab-4, Ab-5, C-1, C-2, Ar-1, Ar-2 | Kolupayev Oleksandr, MD Olha Filyk, MD, PhD Myroslava Harbar, MD, PhD Ostap Turkevych, MD Volodymyr Mishchuk, MD, PhD |
| SW-5 | Adult Respiratory Distress Syndrome. | List of questions to the topic processing. Preparation of answers to selfcontrol questions. Preparation of clinical cases. | Kn-2, Kn-3, Ab-1, Ab-4, Ab-5, Ab-6, Ab-7, Ab-8, Ar-1, Ar-2, C-1, C-2 | Kolupayev Oleksandr, MD Olha Filyk, MD, PhD Myroslava Harbar, MD, PhD Ostap Turkevych, MD Volodymyr Mishchuk, MD, PhD |
| SW-6 | Newborn Respiratory Distress Syndrome. | List of questions to the topic processing. Preparation of answers to selfcontrol questions. | Kn-2, Kn-3, Ab-1, Ab-4, Ab-5, Ab-6, Ab-7, Ab-8, Ar-1, Ar-2, C-1, C-2 | Kolupayev Oleksandr, MD Olha Filyk, MD, PhD Myroslava Harbar, MD, PhD |

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| | | Preparation of clinical cases. | | Ostap Turkevych, MD Volodymyr Mishchuk, MD, PhD |
| SW-7 | History of Anesthesia. | List of questions to the topic processing. Preparation of answers to selfcontrol questions. Preparation of clinical cases. | Kn-2, Kn-3, Kn-4, Ab-1, Ab-2, Ab-3, Ab-4, Ab-5, Ab-6, Ab-7, Ab-8, Ar-1, C-1, C-2 | Kolupayev Oleksandr, MD Olha Filyk, MD, PhD Myroslava Harbar, MD, PhD Ostap Turkevych, MD Volodymyr Mishchuk, MD, PhD |
| SW-8 | Tactic in infusion therapy in shock. | List of questions to the topic processing. Preparation of answers to selfcontrol questions. Preparation of clinical cases. | Kn-1, Kn-3, Kn-2, Ab-1, Ab-2, Ab-3, Ab-4, Ab-5, Ab-9, Ar-1, Ar-2, C-1, C-2 | Kolupayev Oleksandr, MD Olha Filyk, MD, PhD Myroslava Harbar, MD, PhD Ostap Turkevych, MD Volodymyr Mishchuk, MD, PhD |
| SW-9 | Intracranial pressure as a criterion of adequacy of intensive care in coma. | List of questions to the topic processing. Preparation of answers to selfcontrol questions. Preparation of clinical cases. | Kn-2, Kn-3, Ab-1, Ab-4, Ab-5, Ab-9, Ab-10, Ar-1, Ar-2, C-1, C-2 | Kolupayev Oleksandr, MD Olha Filyk, MD, PhD Myroslava Harbar, MD, PhD Ostap Turkevych, MD Volodymyr Mishchuk, MD, PhD |
| SW-10 | Current methods of extracorporeal detoxiation. | List of questions to the topic processing. Preparation of answers to selfcontrol questions. Preparation of clinical cases. | Kn-1, Kn-2, Kn-3, Ab-1, Ab-2, Ab-3, Ab-4, Ab-5, Ab-9, C-1, C-2 | Kolupayev Oleksandr, MD Olha Filyk, MD, PhD Myroslava Harbar, MD, PhD Ostap Turkevych, MD Volodymyr Mishchuk, MD, PhD |
| 8. Results of study verification | | | | |

Current control

is carried out during the training sessions and aims to check the assimilation of educational material by students (it is necessary to describe the forms of current control during the training sessions). Forms of assessment of current educational activities should be standardized and include control of theoretical and practical training. The final grade for the current educational activity is set on a 4point (national) scale

| Result of study code | Code of the class | Result of study verification method | Enrollment criteria |
|----------------------|--|---|--|
| Kn-1 | P-7, P-8, SW-1, SW-2, SW-3, SW-4, SW-8, SW-10 | Attending lectures and practical classes. Execution of written tasks on the topic (questions for self-control and creative tasks). Participation in discussions, discussion of issues submitted for independent study. | To enroll in the study of the discipline it is necessary: to comply with the requirements of the curriculum; to solve tasks both in class and those offered for independent study correctly. |
| Kn-2 | P-1, P-2, P-3, P-4, P-5, P-6, P-7, P-8, SW-1, SW-2, SW-3, SW-4, SW-5, SW-6, SW-7, SW-8, SW-9, SW10 | | |
| Kn-3 | P-2, P-3, P-4, H-5, P-6, P-7, P-8, SW-1, SW-2, SW-3, SW-4, SW-5, SW-6, SW-7, SW-8, SW-9, SW10 | | |
| Kn-4 | P-1, P-2, SW-7 | | |
| Ab-1 | P-2, P-7, P-8, SW-1, SW-2, SW-3, SW-7, SW-8, SW-9 | | |
| Ab-2 | P-1, P-2, P-3, P-4, P-5, P-6, P-7, P-8, SW-1, SW-2, SW-3, SW-4, SW-5, SW-6, SW-7, SW-8, SW-9, SW10 | | |
| Ab-3 | P-1, P-2, P-3, P-7, P-8, SW-1, SW-2, SW-3, SW-7, SW-8, SW10 | | |
| Ab-4 | P-1, P-2, P-3, P-7, P-8, SW-1, SW-2, SW-3, SW-7, SW-8, SW10 | | |
| Ab-5 | P-1, P-2, P-3, P-4, P-5, P-6, P-7, P-8, SW-1, SW-2, SW-3, SW-4, SW-5, SW-6, SW-7, SW-8, SW-9, SW10 | | |
| Ab-6 | P-2, P-3, P-4, P-5, P-6, P-7, P-8, SW-1, SW-2, SW-3, SW-4, SW-5, SW-6, SW-7, SW-8, SW-9, SW10 | | |
| Ab-7 | P-1, P-2, P-5, P-6, SW-2, SW-5, SW-6, | | |

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| | SW-7 | | |
| Ab-8 | P-1, P-2, P-5, P-6, SW-2, SW-5, SW-6, SW-7 | | |
| Ab-9 | P-1, P-2, P-5, P-6, SW-2, SW-5, SW-6, SW-7 | | |
| Ab-10 | P-1, P-2, P-7, P-8, SW-2, SW-7, SW-8 | | |
| Ab-11 | P-6, P-9, SW-8, SW-9 | | |
| Ab-12 | P-3, P-4, SW-1 | | |
| C-1 | P-2, P-4, P-4, P-5, P-6, P-7, P-8, SW-1, SW-2, SW-3, SW-4, SW-5, SW-6, SW-7, SW-8, SW-9, SW10 | | |
| C-2 | P-1, SW-1, SW-2, SW-3, SW-4, SW-5, SW-6, SW-7, SW-8, SW-9, SW10 | | |
| Ar-1 | P-2, P-3, P-4, P-5, P-6, P-7, P-8, SW-1, SW-2, SW-3, SW-4, SW-5, SW-6, SW-7, SW-8, SW-9 | | |
| Ar-2 | P-4, P-5, P-6, P-7, P-8, SW-2, SW-3, SW-4, SW-5, SW-6, SW-8, SW-9 | | |

Final control

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| General evaluation system | Participation to the classes during the semester - 100% on a 200-point scale | |
| Evaluation scales scale | Traditional 4-point scale, multi-point (200-point) scale, ECTS rating | |
| Conditions of admission to the final control | The student attended all practical (laboratory, seminar) classes and received at least 120 points for current performance | |
| Type of final control | Methods of final control | Enrollment criteria |
| Credit | It is necessary to enroll all topics submitted for current control. Grades from the 4-point scale are converted into points on a multi-point (200-point) scale in accordance with the Regulation "Criteria, rules and procedures for evaluating the results of students' learning activities". | The maximum number of points is 200. The minimum number of points is 120. |

9. Policy of the discipline

Academic Integrity: Students' work is expected to be their original research or reasoning. Lack of references to sources used, fabrication of sources, copying, interference in the work of other students, etc. are examples of possible academic dishonesty. Identification of signs of academic

dishonesty in the student's work is the basis for non-enrollment by the teacher, regardless of the extent of plagiarism or deception. Sources of training: the source base can be provided by the teacher exclusively for educational purposes without the right to transfer it to third parties. Students are encouraged to use other literature that is not listed in available thematic plans.

10. Literature

1. Anesthesiology and intensive care 2nd Edition. Edited by Hlumcher F.S. - Kyiv AUS Medicine Publishing. – 2017. - 312 p.
2. European Resuscitation Council Guidelines for Resuscitation 2015 / Koenraad G. Monsieurs, Jerry P. Nolan et al on behalf of the ERC Guidelines 2015 Writing Group // Resuscitation. – 2015. - Vol. 95. - P.1-80. <https://cprguidelines.eu/>
3. Intensive Care Medicine, 6th Edition. Irwin R.S., Rippe J.M. – Lippincott Williams & Wilkins. – 2008;
4. ICU Book, 3rd Edition. P. Marino. – Lippincott Williams & Wilkins. – 2007;
5. Clinical Anesthesia, 6th Edition. P.G.Barash, B.F.Cullen et al. – Lippincott Williams Wilkins. – 2009;
6. Miller's Anesthesia 2 volume set, 7th edition. R. Miller, L. Eriksson, L. Fleisher et al.- Churchill Livingstone.- 2010.- 3312p.;
7. Acute Respiratory Distress Syndrome. The Berlin Definition / V. Marco Ranieri, Gordon D. Rubinfeld, B. Taylor Thompson et al. // JAMA. – 2012. – Vol. 307(23). – P. 2526-2533. doi:10.1001/jama.2012.5669.
8. Pneumonia in adults: diagnosis and management Clinical guideline. NICE 2014. P. 1-28. Published: 3 December 2014. nice.org.uk/guidance/cg191.
9. ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure 2012. The Task Force for the Diagnosis and Treatment of Acute and Chronic Heart Failure 2012 of the European Society of Cardiology. Developed in collaboration with the Heart Failure Association (HFA) of the ESC. European Heart Journal. - 2012. – Vol. 33. – P. 1787–1847. doi:10.1093/eurheartj/ehs104
10. Surviving Sepsis Campaign: International Guidelines for Management of Sepsis and Septic Shock: 2016 / Andrew Rhodes, Laura E. Evans, Waleed Alhazzani [et al] // Critical Care Medicine. - March 2017. – Vol.45 (3P). – P. 1-67. <http://www.survivingsepsis.org/About-SSC/Pages/Leadership.aspx>.

Syllabus compilers:

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