

*Federal State Autonomous Institution of Higher Education
«Peoples' Friendship University of Russia»*

Medical Institute

Recommended MCSD

WORKING PROGRAM OF DISCIPLINE

Course name

Anesthesiology, reanimatology and intensive therapy

Recommended for the direction of training (specialty)

31.05.01 General Medicine

Program (profile, specialization)

General Medicine

1. Goals and objectives of the discipline:

Purpose - formation of the concept of "anesthesiology-resuscitation" among students, development mechanisms of critical conditions, methods of their diagnosis and treatment; train students to provide resuscitation care in case of circulatory arrest; first aid in case of emergency (shock, acute respiratory failure, coma).

Discipline objectives:

- To give a clear idea of the possibilities of the modern specialized anesthetic and intensive care service.
- Give the necessary amount of theoretical knowledge about the development of critical conditions.
- Provide an understanding of the diagnosis of emergency conditions.
- To teach how to carry out a full range of resuscitation measures in case of circulatory arrest.
- To acquaint with the principles of modern methods of intensive treatment of patients in critical conditions diagnosed with circulatory failure, respiratory failure, blood loss, or during surgical interventions.

2. Place of discipline in the structure of EP HE:

Discipline "Anesthesiology, resuscitation, intensive care" refers to the basic part of block 1 of the curriculum.

Table 1 shows the previous and subsequent disciplines aimed at the formation of discipline competencies in accordance with the competence matrix of EP HE.

Table No. 1

Preceding and subsequent disciplines aimed at the formation of competencies

No.	Code and name of competence	Preceding disciplines	Subsequent disciplines (groups of disciplines)
General competences			
1	UC-1	Physics; Mathematics; Anatomy; Hospital Therapy; Hygiene; Public health and health care, health economics	Phthisiology
2	UC-8	Life safety	Emergency Medicine
General Professional competencies			
1	GPC-1	Jurisprudence	
2	GPC-2	Biology; biochemistry	
3	GPC- 4	Physics	
4	GPC-5	Biology; biochemistry; MICROBIOLOGY; VIROLOGY	
5	GPC-6	Life safety; Biology; Biochemistry; Topographic	Emergency Medicine

		anatomy and operative surgery; Immunology	
6	GPC-8	Medical rehabilitation	Endoscopic urology
7	GPC-10	Medical rehabilitation; general surgery; professional diseases	Telemedicine
Professional competence (type of professional activity)			
1	PC-1	Pathophysiology, Clinical Pathophysiology; Epidemiology; Medical rehabilitation; Infectious diseases; Pediatrics; obstetrics and gynecology	Outpatient therapy; Emergency Medicine; Oncology, radiation therapy
2	PC-2	General surgery	Oncology, radiation therapy; Reproductive health
3	PC-3	Medical rehabilitation	Forensic Medicine

3. Requirements of mastering the discipline.

The process of studying the discipline is aimed at the formation of the following competencies:

Table 2

Formed competencies

Competency	Details of competency	Competence achievement indicators
UC-1	Being able to implement critical analysis of problem situations based on systems approach, develop an action strategy	UC-1.1. Analysing scientific and technical literature and regulatory documents of medical institutions. UC-1.2. Assessing in a critical way the reliability of information sources, working with contradictory information from different sources. UC-1.3. Understanding the trends, strategic goals, problems in the field of healthcare/ being aware of regulatory framework to develop a strategy. UC-1.4. Analysing and assessing the economic potential, financial viability and risks of an organization.
UC-8	Being able to create and maintain safe conditions in everyday life and professional activity to protect natural environment, ensure	UC-8.1. Being aware of the causes, signs and consequences of hazards, methods of protection against emergencies; basics of life safety, phones of rescue services. UC-8.2. Being able to identify signs, causes and conditions of emergencies; assess the

	sustainable development of society, including in the event of a threat and occurrence of emergencies and military conflicts	likelihood of a potential hazard for a student and take measures to prevent it in an educational institution; provide first aid in emergencies. UC-8.3. Being able to use the methods of predicting the hazardous or emergency situations; mastering skills to maintain a safe living environment.
GPC-1	Being able to implement moral and legal norms, ethical and deontological principals in professional activity	GPC-1.1. Being able to abide by the ethical standards and legal regulations in professional activity. GPC-1.2. Being able to present professional information in the process of intercultural interaction observing the principles of ethics and deontology.
GPC-2	Being able to monitor the effectiveness of preventive measures, healthy lifestyle formation and sanitary and hygienic education of the population	GPC-2.1. Being able to analyse the awareness of the population of a healthy lifestyle and medical literacy. GPC-2.2. Being able to develop a plan of organizational and methodical measures aimed at increasing the awareness of the population of a healthy lifestyle, its literacy concerning disease prevention issues. GPC-2.3. Being able to prepare an oral presentation or a printed text which promote a healthy lifestyle and increase the population's literacy concerning disease prevention issues.
GPC-4	Being able to use medical devices provided for by the procedure for medical care, and conduct patient examinations in order to determine a diagnosis	GPC-4.1. Being able to use medical devices in accordance with the current procedures for the provision of medical care, clinical guidelines (treatment protocols) on the provision of medical care, care taking into account the medical care standards. GPC-4.2. Being able to assess the effectiveness and safety of medical devices. GPC-4.3. Mastering the technique of performing typical medical procedures using medical devices provided for by the procedures for medical care provision.
GPC-5	Being able to assess morpho-functional, physiological conditions and pathological processes in the human body to solve professional tasks	GPC-5.1. Mastering the algorithm of clinical, laboratory and functional diagnosis when dealing with professional tasks. GPC-5.2. Being able to evaluate the results of clinical, laboratory and functional diagnosis when dealing with professional tasks. GPC-5.3. Being able to determine morpho-functional, physiological states and pathological processes of the human body.
GPC-6	Being able to organize patient care, provide primary health care, arrange work and make	GPC-6.1. Mastering the algorithm for providing first aid in emergency conditions, including in extreme conditions and foci of mass destruction.

	<p>professional decisions in emergency conditions at the prehospital stage, in emergency situations, epidemics and in foci of mass destruction</p>	<p>GPC-6.2. Being able to identify the conditions which require emergency medical care, including clinical signs of sudden cessation of blood circulation and respiration.</p> <p>GPC-6.3. Being able to provide emergency medical care to patients in conditions that pose a threat to the life of a patient, including clinical death (cessation of the vital bodily functions (blood circulation and (or) breathing).</p>
GPC-8	<p>Being able to implement and monitor the efficacy of medical rehabilitation of a patient, including when implementing individual rehabilitation and habilitation programmes for persons with disabilities; assess the patient's ability to work</p>	<p>GPC-8.1. Being able to determine the medical indications for medical rehabilitation measures, including when implementing an individual rehabilitation or habilitation programme for persons with disabilities.</p> <p>GPC-8.2. Being able to carry out measures of medical rehabilitation of a patient in accordance with the current procedures for the provision of medical care, clinical guidelines (treatment protocols) on the provision of medical care taking into account the medical care standards.</p> <p>GPC-8.3. Being able to determine medical specialists for carrying out rehabilitation measures to a patient in need of medical rehabilitation taking into account the diagnosis and in accordance with the current procedures for the provision of medical care.</p> <p>GPC-8.4. Being able to prescribe sanatorium-resort therapy to a patient in need of medical rehabilitation, including when implementing an individual rehabilitation or habilitation programme for persons with disabilities.</p> <p>GPC-8.5. Being able to monitor the implementation of rehabilitation measures and evaluate their efficacy and safety, including when implementing an individual programme for the rehabilitation or habilitation of persons with disabilities, taking into account the diagnosis in accordance with the current procedures for the provision of medical care.</p>
GPC-10	<p>Being able to understand the operation principles of modern IT and use them to solve professional tasks</p>	<p>GPC-10.1. Being able to use information technology in professional activity.</p> <p>GPC-10.2. Being able to observe the information security rules in professional activity.</p> <p>GPC-10.3. Being able to use information and communication technologies, including applied software for general and special purposes in dealing with professional tasks.</p>

PC-1	Being able to provide emergency or urgent medical care to a patient	<p>PC-1.1. Being able to assess the condition of a patient who needs emergency or urgent medical care.</p> <p>PC-1.2. Being able to recognize conditions that arise from sudden acute diseases, exacerbation of chronic diseases without obvious signs of a threat to the patient's life and which require emergency medical care.</p> <p>PC-1.3. Being able to provide emergency medical care to patients with sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life.</p> <p>PC-1.4. Being able to recognize conditions which pose a threat to the patient's life, including conditions of clinical death (cessation of the vital bodily functions (blood circulation and/or respiration) which require emergency medical care.</p> <p>PC-1.5. Being able to provide emergency medical care to patients in conditions which pose a threat to the patient's life, including clinical death (cessation of the vital bodily functions (blood circulation and/or respiration).</p> <p>PC-1.6. Being able to use drugs and medical devices when providing medical care in emergency or urgent forms.</p>
PC-2	Being able to examine a patient in order to determine a diagnosis	<p>PC-2.1. Mastering the skills to collect complaints, anamnesis of the patient's life and disease, as well as conduct a complete physical examination of the patient (examination, palpation, percussion, auscultation).</p> <p>PC-2.2. Being able to make a preliminary diagnosis and make up a plan of laboratory and instrumental examinations of a patient.</p> <p>PC-2.3. Being able to refer a patient to a laboratory examination in case there are medical indications in accordance with the current procedures for the provision of medical care, clinical guidelines (treatment protocols) on the provision of medical care taking into account the medical care standards.</p> <p>PC-2.4. Being able to refer a patient to an instrumental examination in case there are medical indications in accordance with the current procedures for the provision of medical care, clinical guidelines (treatment protocols) on the provision of medical care taking into account the standards of medical</p>

		<p>care.</p> <p>PC-2.5. Being able to refer a patient to consult with a medical specialist if there is a medical indication in accordance with the current procedures for the provision of medical care, clinical guidelines (treatment protocols) on the provision of medical care taking into account the standards of medical care.</p> <p>PC-2.6. Being able to refer a patient to be provided with specialized medical care in an inpatient setting or in a day hospital in case there are medical indications in accordance with the current procedures for the provision of medical care, clinical guidelines (treatment protocols) on the provision of medical care taking into account the standards of medical care.</p> <p>PC-2.7. Being able to carry out differential diagnosis with other diseases/conditions, including the urgent ones, as well as to make a diagnosis taking into account the current international statistical classification of diseases and problems related to health (ICD).</p>
PC-4	<p>Being able to implement and monitor the patient's medical rehabilitation efficacy, including when implementing individual rehabilitation and habilitation programmes for persons with disabilities; assess the patient's ability to work</p>	<p>PC-4.1. Being able to conduct an examination of temporary disability and work as part of a medical commission which examines temporary disability.</p> <p>PC-4.2. Being able to prepare necessary medical documentation to carry out medical and social examination in federal state institutions of medical and social examination.</p> <p>PC-4.3. Being able to carry out medical rehabilitation measures for a patient, including when implementing an individual rehabilitation or habilitation programme for persons with disabilities, in accordance with the current procedures for the provision of medical care, clinical guidelines (treatment protocols) on the provision of medical care taking into account the standards of medical care.</p> <p>PC-4.4. Being able to refer a patient who needs medical rehabilitation to a medical specialist so that they prescribe and carry out medical rehabilitation measures, including when implementing an individual rehabilitation or habilitation programme for persons with disabilities, in accordance with the current procedures for the provision of medical care, clinical guidelines (treatment</p>

		<p>protocols) on provision of medical care taking into account the standards of medical care.</p> <p>PC-4.5. Being able to refer a patient who needs medical rehabilitation to a medical specialist so that they prescribe and carry out sanatorium treatment, including when implementing an individual rehabilitation or habilitation programme for persons with disabilities, in accordance with the current procedures for the provision of medical care, clinical guidelines (treatment protocols) on the provision of medical care taking into account the standards of medical care.</p> <p>PC-4.6. Being able to assess the efficacy and safety of medical rehabilitation measures for a patient in accordance with the current procedures for the provision of medical care, clinical guidelines (treatment protocols) on the provision of medical care taking into account the standards of medical care.</p> <p>PC-4.7. Being able to refer a patient with a persistent bodily dysfunction caused by diseases, the consequences of trauma or defects to a medical and social examination.</p>
--	--	--

As a result of studying the discipline, the student must:

Know:

- Pharmacological and clinical features of the main medicines used in anesthesiology, resuscitation and intensive care
- Physical foundations of the functioning of medical equipment, design and purpose of medical equipment used in intensive care and resuscitation.
- Types and methods of modern general anesthesia (mask, endotracheal, intravenous), methods and methods of prevention of postoperative pulmonary complications.
- Pathogenesis of critical conditions
- Features of the management of patients in a coma, intensive care for patients who have undergone a critical condition.
- Modern diagnostic methods and principles of intensive treatment of critical conditions (acute blood loss, respiratory failure, shock, coma, cardiac arrest)
- Features of first aid and resuscitation measures to victims of road traffic injuries, drowning, electrical injury, strangulation asphyxia, methods of restoring patency of the upper respiratory tract.

Be able to:

- Master the methods of analgesia in the early postoperative period.
- Master the methods of analgesia for chronic pain syndrome.
- Be able to carry out differential diagnosis of various types of pain.
- Be able to differentiate the state of clinical, cerebral and biological death, to determine the criteria for the duration and termination of resuscitation measures.
- Be able to diagnose types of circulatory arrest using clinical and ECG signs (asystole, electromechanical dissociation, ventricular fibrillation).
- Be able to perform basic cardiopulmonary resuscitation on a mannequin.

- Be able to carry out mechanical ventilation using a mask and an air duct, a self-inflating bag.
- Be able to carry out specialized cardiopulmonary resuscitation.
- Determine indications for electrical defibrillation.
- Diagnose acute respiratory failure based on clinical, instrumental and laboratory data.
- Be able to help with upper airway obstruction.
- Provide oxygen therapy with a nasal catheter and oxygen mask.
- Be able to determine the indications for transfer to mechanical ventilation.
- Conduct antibacterial therapy in patients with severe pneumonia.
- Diagnose and conduct intensive therapy for pulmonary embolism.
- Diagnose and conduct intensive care in acute cardiovascular failure.
- Be able to diagnose hypovolemia and hypervolemia by clinical and laboratory signs (CVP, Volume of blood circulating, blood pressure, heart rate, diuresis, etc.).
- Determine the volume and quality of infusion - transfusion therapy in shock.
- Be able to diagnose and conduct intensive therapy for anaphylactic shock.
- Be able to diagnose and intensively treat DIC - syndrome.
- Be able to correct electrolyte and ABG disturbances.
- Determine indications for puncture and catheterization of great vessels.
- Know the basic principles of diagnostics of coma.
- Be able to assess the depth of coma on the Glasgow scale.
- Know the basic principles of carrying out intensive therapy in patients in a coma.
- Be able to conduct intensive care in patients with cerebral edema.

Own:

- Correct management of medical records
- Methods of general clinical examination
- Skills in making a preliminary diagnosis based on the results of biochemical studies
- Interpretation of biochemical analyzes, functional studies of blood circulation and respiration in critical conditions of various etiologies
- The method of drug administration for the correction of critical conditions
- Basic methods of cardiopulmonary resuscitation
- Skills in the use of medicines in the treatment, rehabilitation and prevention of various diseases and pathological conditions;

4. Scope of discipline and types of educational work

The total workload of the course is 3 credit points.

types of educational work	total hours	Semesters			
		11			
Classroom lessons (total)	51	51			
Includes:	-	-		-	-
<i>Lectures</i>					
<i>Practical classes (PC)</i>	51	51			
<i>Seminars (S)</i>					
<i>Laboratory work (LW)</i>					
Independent work (total)	57	57			
Total labor intensity	hours	108	108		
	Credit points	3	3		

5. Content of the discipline

5.1. Contents of discipline sections

№	The name of the discipline section	Section Contents
1.	Anesthesiology	Fundamentals of modern anesthesiology.
2.	Resuscitation	Fundamentals of modern resuscitation.
3	Intensive therapy	Therapy of critical conditions

5.2 Sections of disciplines and types of classes

№	Name of section	Lecture	Practical classes	Lab class	Seminar	CPC	Total hours
1.	Anesthesiology			17		18	35
2.	Resuscitation			17		18	35
3	Intensive therapy			17		21	38
	Total			51		57	108

6. Laboratory workshop is not provided.

7. Practical training

№	Name of section	Name of practical work	Total hours
1.	Anesthesiology	Fundamentals of modern anesthesiology.	17
2.	Resuscitation	Fundamentals of modern resuscitation.	17
3	Intensive therapy	Therapy of critical conditions	17

8. Material and technical support of the discipline:

- the following components of the material and technical base of the RUDN University are used:
- classrooms, material and technical resources, library resources
- Lecture hall, classrooms, operating rooms and intensive care units at clinical sites for practical training at City Clinical Hospital No. 64

9. List of information technologies

Information support of the discipline

a) software licensed software. Sites on the Internet, corresponding to individual subjects of the discipline, resources of the electronic library of the university d) databases, information and reference and search systems.

b) databases, reference and search systems.

1. RUDN Electronic Library System - RUDN University Library System

<http://lib.rudn.ru/MegaPro/Web>

2. University library online <http://www.biblioclub.ru>

3. ЭБС Юрайт <http://www.biblio-online.ru>

4. НЭБ Elibrary <http://elibrary.ru>

5. Student advisor www.studentlibrary.ru

6. ЭБС «Лань» <http://e.lanbook.com/>

7. Medical portal meduniver. Contains a medical photo-atlas, videos on various branches of medicine, medical electronic library <http://meduniver.com/>
8. Russian anesthetic server Rusanesth.com
9. State Central Medical Library of Moscow State Medical University named after I.M. Sechenov Scsml.rssi.ru

10. Educational and methodological support of the discipline:

a) main literature

- Методические рекомендации по проведению реанимационных мероприятий Европейского Совета по реанимации. Москва. 2015
- Неотложные состояния. Учебное пособие для студентов. Под редакцией проф. С.А.Сумина. 9-е изд., - Москва, 2017.
- Долина О.А. «Анестезиология и реаниматология» Учебник для ВУЗов, ГЭОТАР, 2010г.
- Сумин. С.А. и др. Анестезиология и реаниматология. Учебное пособие в 2-х т.– М.: ООО «Медицинское информационное агентство», 2015. – 928 С

b) additional literature

- Лилли Л. Патология сердечно-сосудистой системы. М.Бином. 2010
- Терапевтическая Гипотермия. Шевелёв О.А., Гречко А.В., Петрова М.В. - Москва, 2019.
- Федоровский Н.М. Руководство к практическим занятиям по анестезиологии, реаниматологии и интенсивной терапии : учебное пособие / Н.М. Федоровский – МИА, 2003. – 280 с
- Беляевский А.Д. Анестезиология и реаниматология: задачи, вопросы и ответы с разъяснениями: учебное пособие / А.Д. Беляевский – Феникс, 2016. – 315 с.
-

11. Methodical instructions for students on mastering the discipline "Anesthesiology, resuscitation, intensive therapy"

Teaching students helps them develop the skills of communicating with the patient, taking into account the ethical and deontological characteristics of pathology and patients.

The student is required to attend classes, fulfill the tasks given by the person in charge of the discipline, familiarize himself with the recommended literature, etc. During the certification of the student, the quality of work in the classroom, the level of preparation for independent activity in the chosen field, the quality of the tasks completed given by the person in charge of the discipline, the ability to independently study the educational material are assessed.

In practical classes in the classroom, the relevant topics are analyzed using multimedia technology (computer, projector).

Independent work outside the classroom can take place both in the classrooms of the department and in the computer class, where students can study material on the presentations prepared by the teachers of the department, as well as on computer tests.

Presentations on the topics of the classes can be recorded on CDs or flash cards for self-study by the student on the home computer.

Textbooks in electronic form on a number of topics studied are posted on the pages of the department and the staff of the department on the RUDN University Educational Portal, as well as on the local resources of the RUDN University electronic library system.

Independent work - the planned educational, educational-research, research work of students, performed during extracurricular (classroom) time on the assignment and with the

methodological guidance of the teacher, but without his direct participation (with the partial direct participation of the teacher, leaving the leading role for the work of students).

As one of the forms of independent work, the preparation of abstracts for various sections of the course is provided, as well as the presentation of reports at the scientific seminar of the department.

Extracurricular independent work includes:

study of material from a textbook, teaching aids on paper and electronic media; preparation of an abstract message on a selected topic; preparation for the test and tasks.

12. Available assessment tools for intermediate assessment of students in the discipline of "Anesthesiology, resuscitation, intensive care".

Materials for assessing the level of mastering the educational material of the "Anesthesiology, resuscitation, intensive care " discipline, including a list of competencies with an indication of the stages of their formation, a description of indicators and criteria for assessing competencies at various stages of their formation, a description of the assessment scales, standard control tasks or other materials , necessary for the assessment of knowledge, abilities, skills and (or) experience of activities that characterize the stages of the formation of competencies in the process of mastering the educational program, methodological materials that determine the procedures for assessing knowledge, skills, skills and (or) experience of activities that characterize the stages of formation of competencies, have been developed in full and are available for students on the discipline page at Telecommunication training information system RUDN.

The program has been drawn up in accordance with the requirements of the Federal State Educational Standard of Higher Education.

Developers:

Associate Professor

Department of Anesthesiology and Reanimatology
with a course of medical rehabilitation

V.A. Moroz

Head of the Department

Department of Anesthesiology and Reanimatology
with a course of medical rehabilitation

M.V. Petrova

Head of the Program

I.V. Radysh