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**Federal State Autonomous Educational Institution of Higher Education
PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA
RUDN University**

Institute of Medicine

educational division (faculty/institute/academy) as higher education programme developer

COURSE SYLLABUS

Anesthesiology, Resuscitation, Intensive Care

course title

Recommended by the Didactic Council for the Education Field of:

31.05.01 General Medicine

field of studies / speciality code and title

The course instruction is implemented within the professional education programme of higher education:

General Medicine

higher education programme profile/specialisation title

2022-2023

1. COURSE GOAL(s)

The goal of the course “Anesthesiology, Resuscitation and Intensive care” is to equip students with the basic knowledge for this course, develop mechanisms of critical conditions, methods of their diagnosis and treatment; train students to provide cardiac pulmonary resuscitation; provide adequate medical care in critical conditions (shock, acute respiratory failure, coma).

2. REQUIREMENTS FOR LEARNING OUTCOMES

Mastering the course (module) “**Anesthesiology, Resuscitation and Intensive care**” is aimed at the development of the following competences /competences in part: GC-1, GC-8, GPC-1, GPC-2, GPC-4, GPC-5, GPC-6, GPC-8, GPC-10, PC-1, PC-4.

Table 2.1. List of competences that students acquire through the course study

| Competence code | Competence descriptor | Competence formation indicators (within this course) |
|------------------------|---|--|
| GC-1 | Being able to implement critical analysis of problem situations based on systems approach, develop an action strategy | GC-1.1. Analyzing scientific and technical literature and regulatory documents of medical institutions. |
| | | GC-1.2. Assessing in a critical way the reliability of information sources, working with contradictory information from different sources. |
| | | GC-1.3. Understanding the trends, strategic goals, problems in the field of healthcare/ being aware of regulatory framework to develop a strategy. |
| | | GC-1.4. Analyzing and assessing the economic potential, financial viability and risks of an organization. |
| GC-8 | Being able to create and maintain safe conditions in everyday life and professional activity to | GC-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. |

| Competence code | Competence descriptor | Competence formation indicators (within this course) |
|-----------------|---|--|
| | protect natural environment, ensure sustainable development of society, including in the event of a threat and occurrence of emergencies and military conflicts | <p>GC-8.2. Being able to identify signs, causes and conditions of emergencies; assess the likelihood of a potential hazard for a student and take measures to prevent it in an educational institution; provide first aid in emergencies.</p> <p>GC-8.3. Being able to use the methods of predicting the hazardous or emergency situations; mastering skills to maintain a safe living environment.</p> |
| GPC-1 | Being able to implement moral and legal norms, ethical and deontological principals in professional activity | <p>GPC-1.1. Being able to abide by the ethical standards and legal regulations in professional activity.</p> <p>GPC-1.2. Being able to present professional information in the process of intercultural interaction observing the principles of ethics and deontology.</p> |
| GPC-2 | Being able to monitor the effectiveness of preventive measures, healthy lifestyle formation and sanitary and hygienic education of the population | <p>GPC-2.1. Being able to analyze the awareness of the population of a healthy lifestyle and medical literacy.</p> <p>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.</p> <p>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.</p> |
| GPC-4 | Being able to use medical devices provided for by the procedure for medical care, and conduct patient examinations in order to | 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 accounts the medical care standards. |

| Competence code | Competence descriptor | Competence formation indicators (within this course) |
|------------------------|--|---|
| | determine a diagnosis | <p data-bbox="788 253 1441 331">GPC-4.2. Being able to assess the effectiveness and safety of medical devices.</p> <p data-bbox="788 387 1441 566">GPC-4.3. Mastering the technique of performing typical medical procedures using medical devices provided for by the procedures for medical care provision.</p> |
| GPC-5 | Being able to assess morpho-functional, physiological conditions and pathological processes in the human body to solve professional tasks | <p data-bbox="788 604 1441 728">GPC-5.1. Mastering the algorithm of clinical, laboratory and functional diagnosis when dealing with professional tasks.</p> <p data-bbox="788 784 1441 907">GPC-5.2. Being able to evaluate the results of clinical, laboratory and functional diagnosis when dealing with professional tasks.</p> <p data-bbox="788 963 1441 1086">GPC-5.3. Being able to determine morpho-functional, physiological states and pathological processes of the human body.</p> |
| GPC-6 | Being able to organize patient care, provide primary health care, arrange work and make professional decisions in emergency conditions at the prehospital stage, in emergency situations, epidemics and in foci of mass destruction. | <p data-bbox="788 1115 1441 1283">GPC-6.1. Mastering the algorithm for providing first aid in emergency conditions, including in extreme conditions and foci of mass destruction.</p> <p data-bbox="788 1339 1441 1507">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 data-bbox="788 1574 1441 1832">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 | Being able to implement and monitor the efficacy of medical rehabilitation of a patient, including | GPC-8.1. Being able to determine the medical indications for medical rehabilitation measures, including when implementing an individual rehabilitation or habilitation |

| Competence code | Competence descriptor | Competence formation indicators (within this course) |
|------------------------|---|---|
| | when implementing individual rehabilitation and habilitation programs for persons with disabilities; assess the patient's ability to work | <p data-bbox="788 250 1326 286">programs for persons with disabilities.</p> <p data-bbox="788 479 1445 786">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 data-bbox="788 846 1417 1111">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 data-bbox="788 1171 1430 1386">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 programs for persons with disabilities.</p> |

| Competence code | Competence descriptor | Competence formation indicators (within this course) |
|------------------------|---|---|
| | | GPC-8.5. Being able to monitor the implementation of rehabilitation measures and evaluate their efficacy and safety, including when implementing an individual programs 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. |
| GPC-10 | Being able to understand the operation principles of modern IT and use them to solve professional tasks | <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 | PC-1.1. Being able to assess the condition of a patient who needs emergency or urgent |

| Competence code | Competence descriptor | Competence formation indicators (within this course) |
|------------------------|---|--|
| | medical care to a patient | <p>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> |

| Competence code | Competence descriptor | Competence formation indicators (within this course) |
|------------------------|------------------------------|---|
| | | <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 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> |

| Competence code | Competence descriptor | Competence formation indicators (within this course) |
|------------------------|---|---|
| | | 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). |
| C-4 | Being able to implement and monitor the patient's medical rehabilitation efficacy, including when implementing individual rehabilitation and habilitation programmes for persons with | <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> |

| Competence code | Competence descriptor | Competence formation indicators (within this course) |
|------------------------|--|---|
| | disabilities; assess the patient's ability to work | <p data-bbox="788 297 1442 741">PC-4.3. Being able to carry out medical rehabilitation measures for a patient, including when implementing an individual rehabilitation or habilitation programs 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 data-bbox="788 757 1442 1249">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 program for persons with disabilities, in accordance with the current procedures for the provision of medical care, clinical guidelines (treatment protocols) on provision of medical care taking into account the standards of medical care.</p> <p data-bbox="788 1265 1442 1749">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 programs 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> |

| Competence code | Competence descriptor | Competence formation indicators (within this course) |
|-----------------|-----------------------|---|
| | | 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 accounts the standards of medical care. |
| | | 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. |

3. COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE

The course refers to the core/variable/elective* component of (B1) block of the higher educational programme curriculum.

* - Underline whatever applicable.

Within the higher education programme students also master other (modules) and / or internships that contribute to the achievement of the expected learning outcomes as results of the course study.

Table 3.1. The list of the higher education programme components/disciplines that contribute to the achievement of the expected learning outcomes as the course study results

| Competence code | Competence descriptor | Previous courses/modules* | Subsequent courses/modules* |
|------------------------|---|--|------------------------------------|
| GC-1 | Being able to implement critical analysis of problem situations based on systems approach, develop an action strategy | Physics; Mathematics; Anatomy; Hospital Therapy; Hygiene; Public Health and Healthcare, Healthcare Economics | Phthisiology |
| GC-8 | Being able to create and maintain safe conditions in everyday life and professional activity to protect natural environment, ensure sustainable development of society, including in the event of a threat and occurrence of emergencies and military conflicts | Health and Safety | Disaster Medicine |
| GPC-1 | Being able to implement moral and legal norms, ethical and deontological principals in professional activity | Jurisprudence (Law Fundamentals) | |

| | | | |
|-------|--|--|--|
| GPC-2 | Being able to monitor the effectiveness of preventive measures, healthy lifestyle formation and sanitary and hygienic education of the population | Biology; biochemistry | |
| 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 | Physics | |
| GPC-5 | Being able to assess morpho-functional, physiological conditions and pathological processes in the human body to solve professional tasks | Biology; Biochemistry; microbiology, Virology | |

| | | | |
|--------|--|--|--------------------|
| GPC-6 | Being able to organize patient care, provide primary health care, arrange work and make professional decisions in emergency conditions at the prehospital stage, in emergency situations, epidemics and in foci of mass destruction. | Health and Safety; Biology; Biochemistry; Topographic anatomy and operative surgery; Immunology | Disaster Medicine |
| GPC-8 | Being able to implement and monitor the efficacy of medical rehabilitation of a patient, including when implementing individual rehabilitation and habilitation programs for persons with disabilities; assess the patient's ability to work | Medical rehabilitation | Endoscopic urology |
| GPC-10 | Being able to understand the operation principles of modern IT and use them to solve professional tasks | Medical rehabilitation; general surgery; professional diseases | |

| | | | |
|------|--|---|---|
| PC-1 | Being able to provide emergency or urgent medical care to a patient | Pathophysiology, Clinical Pathophysiology; Epidemiology; Medical rehabilitation; Infectious diseases; Pediatrics; obstetrics and gynecology | General Practitioner: Outpatient Physician's Assistant ; Disaster Medicine; Oncology, radiation therapy |
| PC-2 | Being able to examine a patient in order to determine a diagnosis | General surgery | Oncology, radiation therapy; Reproductive health |
| PC-4 | 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 | Medical rehabilitation | Forensic Medicine |

* To be filled in according to the competence matrix of the higher education programme.

4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

The total workload of the course "Anesthesiology, Resuscitation, Intensive Care" is 3 credits (108 academic hours).

Table 4.1. Types of academic activities during the periods of higher education programme mastering

| Type of academic activities | Total academic hours | Semesters/training modules | |
|-----------------------------------|----------------------|----------------------------|--|
| | | B | |
| Classroom learning , <i>ac.h.</i> | 108 | 108 | |

| Type of academic activities | Total academic hours | Semesters/training modules | |
|---|----------------------|----------------------------|-----|
| | | B | |
| Including: | | | |
| Lectures (LC) | | | |
| Lab work (LW) | 51 | 51 | |
| Seminars (workshops/tutorials) (S) | | | |
| <i>Self-studies</i> | 39 | 39 | |
| <i>Evaluation and assessment (exam/passing/failing grade)</i> | 18 | 18 | |
| Course workload | Academic hours | 108 | 108 |
| | credits | 3 | 3 |

* To be filled in regarding the higher education programme correspondence training mode.

5. COURSE CONTENTS

Table 5.1. Course contents and academic activities types

| Course module title | Course module contents (topics) | Academic activities types |
|----------------------|---|---------------------------|
| 1. Anesthesiology | Basics and clinical aspects of modern anesthesiology. | LW |
| 2. Resuscitation | Fundamentals of modern resuscitation. | LW |
| 3. Intensive therapy | Diagnostics, Evaluation and treatments of critical illnesses. | LW |

* - to be filled in only for **full**-time training: LC - lectures; LW - lab work; S - seminars.

6. CLASSROOM EQUIPMENT AND TECHNOLOGY SUPPORT REQUIREMENTS

Table 6.1. Classroom equipment and technology support requirements

| Type of academic activities | Classroom equipment | Specialised educational / laboratory equipment, software, and materials for course study (if necessary) |
|-----------------------------|---------------------------------------|---|
| Lecture | Multimedia projector, Internet access | Sets of videos, multimedia presentations made by the department. |

| Type of academic activities | Classroom equipment | Specialised educational / laboratory equipment, software, and materials for course study (if necessary) |
|-----------------------------|--|---|
| Lab work | Multimedia projector, Internet access | Sets of videos, multimedia presentations made by the department. |
| Computer Lab | Classes are equipped with access to the RUDN electronic library system, the Internet | Computer/laptop with installed software. |
| Self-studies | Classroom for student's self-studies (can be used for seminars and consultations.) | Computer/laptop with installed software. Technical equipment: multimedia projector Installed software. multimedia projector with screen - Sets of videos, multimedia presentations made by the department |

7. RESOURCES RECOMMENDED FOR COURSE STUDY

Main readings:

Metodicheskiye rekomendatsii po provedeniyu reanimatsionnykh meropriyatiy Soveta Yevropy po reanimatsii. Moskva. 2015

Neotlozhnyye sostoyaniya. Uchebnoye posobiye dlya studentov. Pod redaktsiyey prof. S.A.Sumina. 9-ye izd., - Moskva, 2017.

Dolina O.A. «Anesteziologiya i reanimatologiya» Uchebnik dlya VUZov, GEOTAR, 2010g.

Sumin. S.A. i dr. Anesteziologiya i reanimatologiya. Uchebnoye posobiye v 2-kh t.– M.: OOO «Meditsinskoye informatsionnoye agentstvo», 2015. – 928 S.

Additional readings:

Lilli L. Patofiziologiya serdechno-sosudistoy sistemy. M..Binom. 2010

Terapevticheskaya Gipotermiya. Shevelov O.A., Grechko A.V., Petrova M.V. - Moskva, 2019.

Fedorovskiy N.M. Rukovodstvo k prakticheskim zanyatiyam po anesteziologii, reanimatologii i intensivnoy terapii : uchebnoye posobiye / N.M. Fedorovskiy – MIA, 2003. – 280 s

Belyayevskiy A.D. Anesteziologiya i reanimatologiya: zadachi, voprosy i otvety s

raz"yasneniyami: uchebnoye posobiye / A.D. Belyayevskiy – Feniks, 2016. – 315 s.

Electronic libraries with access for RUDN students:

- Electronic library network of RUDN – ELN RUDN <http://lib.rudn.ru/MegaPro/Web>
- ELN «University Library online» <http://www.biblioclub.ru>
- ELN Urait <http://www.biblio-online.ru>
- ELN «Student Advisor» www.studentlibrary.ru
- ELN «Lan» <http://e.lanbook.com/>

Databases and search engines:

- electronic fund of legal and regulatory and technical documentation <http://docs.cntd.ru/>
- search system Yandex <https://www.yandex.ru/>
- search system Google <https://www.google.ru/>
- Medical portal meduniver. Contains a medical photo-atlas, videos on various branches of medicine, medical electronic library <http://meduniver.com/>
- Russian anesthetic server Rusanesth.com

Training toolkit for self- studies to master the course *:

1. The set of lectures on the course “Anesthesiology, Resuscitation, Intensive Care”
2. The laboratory workshop (if any).on the course “Anesthesiology, Resuscitation, Intensive Care”
3. The guidelines for writing a course paper / project (if any) on the course “Anesthesiology, Resuscitation, Intensive Care”.

* The training toolkit for self- studies to master the course is placed on the course page in the university telecommunication training and information system under the set procedure.

8. ASSESSMENT TOOLKIT AND GRADING SYSTEM* FOR EVALUATION OF STUDENTS’ COMPETENCES LEVEL UPON COURSE COMPLETION

The assessment toolkit and the grading system* to evaluate the competences formation level (GC-1, GC-8, GPC-1, GPC-2, GPC-4, GPC-5, GPC-6, GPC-8, GPC-10, PC-1, PC-4) upon the course study completion are specified in the Appendix to the course syllabus.

* The assessment toolkit and the grading system are formed on the basis of the requirements of the relevant local normative act of RUDN University (regulations / order).

DEVELOPERS:

Associate professor of the
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and Resuscitation with Medical
Rehabilitation Course

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HEAD OF EDUCATIONAL DEPARTMENT:

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