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

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**MEDICAL INSTITUTE**

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

**COURSE SYLLABUS**

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**TOPOGRAPHIC ANATOMY AND OPERATIVE SURGERY**

course title

**Recommended by the Didactic Council for the Education Field of:**

**31.05.01 General Medicine**

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field of studies / speciality code and title

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

**General Medicine**

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higher education programme profile/specialisation title

## 1. COURSE GOAL(s)

The goal of the course "Topographic anatomy and operative surgery" is to equip students with the knowledge in the field of anatomical and surgical training of students necessary for subsequent work in clinical, primarily surgical, departments and subsequent independent activity.

## 2. REQUIREMENTS FOR LEARNING OUTCOMES

Mastering the course (module) «**Topographic anatomy and operative surgery**» is aimed at the development of the following competences /competences in part: GPC-4, GPC-5, GPC-6.

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

<b>Competence code</b>	<b>Competence descriptor</b>	<b>Competence formation indicators (within this course)</b>
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-5.3. 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 professional decisions in emergency conditions at the prehospital stage, in emergency situations, epidemics and in foci of mass destruction	GPC-6.1. Mastering the algorithm for providing first aid in emergency conditions, including in extreme conditions and foci of mass destruction. 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)).

## 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*

<b>Competence code</b>	<b>Competence descriptor</b>	<b>Previous courses/modules*</b>	<b>Subsequent courses/modules*</b>
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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	General Surgery; Biotechnology; Physics; Chemistry; Bioorganic chemistry; Pharmacology; Introductory practice for obtaining primary professional skills: patient care (simulation center); Introductory practice for obtaining primary professional skills: patient care; Practice of diagnostic profile: assistant ward nurse; Practice in obtaining primary professional skills: assistant to junior medical staff;	Neurology, medical genetics, neurosurgery; Endocrinology; Anesthesiology, intensive care, intensive care; Traumatology, orthopedics; General medical skills; Urgent conditions; Hospital surgery, pediatric surgery; Oncology, radiation therapy; Experimental oncology;
GPC-5	Being able to assess morpho-functional, physiological conditions and pathological processes in the human body to solve professional tasks	Biochemistry; Normal physiology; General Surgery; Biology; Microbiology, virology; Pathophysiology, clinical pathophysiology; Propaedeutics of internal diseases; Immunology; Pathological anatomy, clinical pathological anatomy; Chemistry; Pharmacology; Bioorganic chemistry; Anatomy; Histology, embryology, cytology;	Obstetrics and gynecology; Oncology, radiation therapy; Molecular genetic methods; Methods of microbiological diagnostics; Phthisiology; Anesthesiology, intensive care, intensive care; Ophthalmology; Methods of cell biology and histology; Forensic medicine; Maxillofacial surgery; Medical forensics; Otorhinolaryngology; Pediatrics;
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	General Surgery; The basics of military training. Life safety; Introductory practice for obtaining primary professional skills: patient care (simulation center);	Disaster Medicine; Urgent conditions; Infectious diseases;

\* 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 «**Topographic anatomy and operative surgery**» is **6** credits (216 academic hours)..

*Table 4.1. Types of academic activities during the periods of higher education programme mastering (**full-time training**)\**

Type of academic activities		Total academic hours	Semesters/training modules			
			6	7		
<i>Contact academic hours</i>		<b>140</b>	<b>68</b>	<b>72</b>		
including:						
Lectures (LC)						
Lab work (LW)		140	68	72		
Seminars (workshops/tutorials) (S)		0	0	0		
<i>Self-studies</i>		37	19	18		
<i>Evaluation and assessment (exam/passing/failing grade)</i>		39	21	18		
<b>Course workload</b>	academic hours_	<b>216</b>	<b>108</b>	<b>108</b>		
	credits	<b>6</b>	<b>3</b>	<b>3</b>		

\* 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
<b>Module 1.</b> Topographic anatomy of the extremities	<b>Topic 1.1.</b> Theoretical foundations of topographic anatomy. Topographic anatomy and operative surgery as an educational discipline and its place in the training of doctors. Applied anatomy: its main types. Operative surgery, its content and methods of studying. Fascias, cellular spaces and their clinical value.	LW
	<b>Topic 1.2.</b> Shoulder girdle: subclavian, deltoid, scapular, axillary regions. Shoulder. The elbow region. The borders. External landmarks. Layers. Blood vessels and nerves. Surgical anatomy of the shoulder and elbow joints. Capsules, extra-articular and intra-articular formations. Blood supply and innervation of joints.	LW
	<b>Topic 1.3.</b> Forearm, hand. The borders. External landmarks. Layers. Surgical anatomy of the wrist joint. Capsule, extra-articular and intra-articular formations. Blood supply and innervation of the joint.	LW
	<b>Topic 1.4.</b> The gluteal region: borders, external relief, layers. Hip: boundaries, external landmarks, division into areas, layers. Femoral triangle. Neurovascular bundles. Inguinal lymph nodes. Surgical anatomy of the femoral canal, occlusion canal, adductor muscle canal. Surgical anatomy of the hip joint. Capsule, extra-articular and intra-articular formations. Blood supply and innervation of the joint.	LW
	<b>Topic 1.5.</b> Knee region. Knee joint: ligaments, synovial bags. Shin. Foot. The borders. External relief. Division into regions. Layers. Surgical anatomy of the medial malleolar, calcaneal and plantar canals. Surgical anatomy of the knee and ankle joints. Capsules, extra-articular and intra-articular formations. Blood supply and innervation.	LW

<b>Module 2.</b> Topographic anatomy of the head, neck, thorax	<b>Topic 2.1.</b> Head. Borders, departments and regions. External landmarks. Cranial vault. Frontal - parietal - occipital region. Temporal region. Meninges and intermembranous space. Topographic anatomy of the venous sinuses of the dura mater. Face. Superficial and deep lateral face regions.	LW
	<b>Topic 2.2.</b> Neck. Borders, areas, layers of the neck. Connections of the neck cellular spaces with the cellular spaces of the head, thorax and upper limb. Fascias and fat cellular spaces of the neck. The anterior neck region: submandibular triangle, carotid triangle, scalenovertebral triangle. Sternoclavicular mastoid region and lateral region of the neck. Surgical anatomy of the neck organs: the esophagus, trachea, thyroid gland.	LW
	<b>Topic 2.3.</b> Thorax. Chest wall. The mammary gland. Topography of intercostal spaces. Surgical anatomy of the diaphragm. Pleura and pleural sinuses.	LW
	<b>Topic 2.4.</b> Thoracic cavity. Surgical anatomy of the lungs. Clinical anatomy of the heart. Mediastinum. Surgical anatomy of organs of the anterior and posterior mediastinum.	LW
<b>Module 3.</b> Topographic anatomy of the abdomen, pelvis and perineum	<b>Topic 3.1.</b> Abdomen. The borders. External relief, landmarks. Division into departments and regions. Projection of the abdominal organs onto the anterolateral wall of the abdomen. Blood, lymphatic vessels and nerves. Topographic anatomy of the abdomen. Anterolateral wall of the abdomen. Weak points of the anterior abdominal wall. Linea alba and the umbilical ring. Inguinal region. Surgical anatomy of the inguinal canal. Surgical anatomy of the spermatic cord. Surgical anatomy of the inguinal, femoral and umbilical hernias.	LW
	<b>Topic 3.2.</b> Abdominal cavity. Peritoneum. Ligaments, bursae, channels, sinuses, great and small omentum. Surgical anatomy of abdominal cavity upper floor organs: stomach, duodenum, liver, gallbladder and extrahepatic bile ducts, spleen, pancreas.	LW
	<b>Topic 3.3.</b> Surgical anatomy of the abdominal cavity lower floor organs: small intestine, large intestine. Posterior abdominal wall. Musculoaponeurotic and fascial formation of posterior abdominal wall.	LW
	<b>Topic 3.4.</b> Retroperitoneal space. Fascia and cellular spaces. Surgical anatomy of organs and neurovascular structures: the kidney, ureter, adrenal glands, abdominal aorta, vena cava inferior, thoracic lymph duct.	LW
	<b>Topic 3.5.</b> Topographic anatomy of the pelvis. fascia, cellular spaces. surgical anatomy of the male pelvis: the rectum, urinary bladder, ureter, prostate, seminal vesicles, vas deferens. surgical anatomy of the female pelvis: the rectum, uterus and its appendages, the bladder, ureter.	LW
	<b>Topic 3.6.</b> Topographic anatomy of the perineum. fascia, cellular spaces. pelvic and urogenital diaphragm. surgical anatomy of the perineum in men and women: the urethra, scrotum, testicle, spermatic cord, vagina. Operations for wounds of the rectum and urinary bladder. operations for an ectopic (tubal) pregnancy.	LW
<b>Module 4.</b>	<b>Topic 4.1.</b> Operative surgery: content and methods of study.	LW

Operative surgery	The basics of the doctrine of surgery. Modern trends and prospects of operative surgery. Preparation for surgery and anesthesia. General surgical technique. Surgical instruments. Basic operational techniques: separation of tissues, stop bleeding, put on and removal of skin nodes sutures, tying surgical knots.	
	<b>Topic 4.2.</b> Transplantation of organs and tissues. Types of transplantation. Features of organ transplant surgery. Main problems and prospects for the development of transplantology.	LW
	<b>Topic 4.3.</b> Intestinal suture. Intestinal anastomoses. Suturing of wounds of the stomach, small intestine and colon. Resection of the small intestine. Intestinal suture. Anatomical and physiological basis. Types. Requirements for the seam.	LW
	<b>Topic 4.4.</b> Surgical approach to abdominal cavity organs: traditional, endoscopic. Abdominal wall hernias. Hernioplastic operations. Operations in wounds of the liver. Extrahepatic biliary tract surgery. Cholecystectomy. Pancreatic surgery.	LW
	<b>Topic 4.5.</b> Operations on abdominal cavity organs: tradition and laparoscopic. Revision of the abdominal cavity with penetrating wounds. Appendectomy. Operations on the stomach: gastrostomy, gastro-intestinal anastomosis (gastrojejunostomy), resection of the stomach. Operations on the stomach.	LW
	<b>Topic 4.6.</b> Primary surgical treatment of wounds of the extremities. Amputation of limbs. Operations on the joints of the limbs. Operations on blood vessels of the limbs. Vascular suture. Anatomical and physiological basis. Types. Requirements for the seam. Operations on the peripheral nerves and tendons: suture of nerve, suture of tendon. Anatomical and physiological basis. Types. Requirements for the seam.	LW
	<b>Topic 4.7.</b> Trepanation of the skull. Trepanation of the mastoid process. Primary surgical treatment of wounds head and neck. Operations in phlegmons and abscesses of the neck. Operations on the thyroid gland. Tracheostomy.	LW
	<b>Topic 4.8.</b> Primary surgical treatment of wounds of the thorax. Operations on the mammary gland. Operative access to the organs of the thoracic cavity. Principles of surgical interventions on lungs, heart, esophagus.	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)
Lab work № 2 (234)	Classroom for seminars (workshops), group and individual consultations, interim and mid-term assessments,	List of visual anatomical posters, tables, models, bas-reliefs. plastinated materials (preserved

Type of academic activities	Classroom equipment	Specialised educational / laboratory equipment, software, and materials for course study (if necessary)
	equipped with a set of specialized furniture; whiteboard (screen) and multimedia presentation equipment.	(cadaveric) plastinated biomaterial); wet anatomical specimens (preserved (cadaveric) biomaterial in formalin solution in glass containers). Technology support: Epson EMP-S1 multimedia projector; a stable wireless Internet connection. Software: Microsoft Windows, MS Office / Office 365, MS Teams, Chrome (latest stable release), Skype.
Lab work № 3 (235)	Classroom for seminars (workshops), group and individual consultations, interim and mid-term assessments, equipped with a set of specialized furniture; whiteboard (screen) and multimedia presentation equipment.	Set of specialized equipment: operating microscope "Carl Zeiss Jena"; endovideosurgical complex "Azimuth"; anatomical table "Anatamage" (interactive 3D-visualization, 3D-visualization table); sets of general and special surgical instruments; visual posters, tables, stands. Technology support: NEC VT59 multimedia projector; stable wireless Internet connection. Software: Microsoft Windows, MS Office / Office 365, MS Teams, Chrome (latest stable release), Skype. Simulators for operative surgery: human skin, vascular, intestinal simulator, suture kits, surgical instruments.
Seminar № 4, 5	Classroom for seminars (workshops), group and individual consultations, interim and mid-term assessments, equipped with a set of specialized furniture; whiteboard (screen) and multimedia presentation equipment.	Set of specialized furniture: desk with faux stone top; portable shadowless lamp. Negatoscope H-48. Technology support: Epson EB-W29 multimedia projector, stable wireless Internet connection. Software: Microsoft Windows, MS Office / Office 365, MS Teams, Chrome (latest stable release), Skype.
Self-studies № 1 (232)	Classroom for seminars (workshops), group and individual consultations, interim and mid-term assessments, equipped with a set of specialized furniture; whiteboard (screen) and multimedia presentation equipment.	Technology support: Epson EMP-S1 multimedia projector, internet access. Software: Microsoft Windows, MS Office / Office 365, MS Teams, Chrome (latest stable release), Skype. Simulators for operative surgery: human skin,

Type of academic activities	Classroom equipment	Specialised educational / laboratory equipment, software, and materials for course study (if necessary)
		vascular, intestinal simulator, suture kits, surgical instruments.

\* The premises for students' self-studies are subject to **MANDATORY** mention

## 7. RESOURCES RECOMMENDED FOR COURSE STUDY

### *Main readings:*

Topographic anatomy and operative surgery: textbook/A.V.Nikolaev.-Moscow.-Geotar-Media, 3-rd ed.-2021.-671 p.

- 1) Topographic anatomy and operative surgery: textbook/A.V.Nikolaev.-Moscow.-Geotar-Media/- 2021.-672 p.  
[https://lib.rudn.ru:443/MegaPro/UserEntry?Action=Link\\_FindDoc&id=497916&idb=0](https://lib.rudn.ru:443/MegaPro/UserEntry?Action=Link_FindDoc&id=497916&idb=0)
- 2) Netter's Clinical Anatomy / J.T. Hansen, F.H. Netter. - 4th Edition. - Philadelphia: Elsevier, 2019. - 588 p.
- 3) Gray's Anatomy for Students / R.L. Drake, W.A. Vogl, Mitchell Adam W.M. - Third Edition. - Philadelphia: Elsevier, 2015. - 1161 p.: il.
- 4) Topographic and surgical anatomy of the abdomen: educational manual for students of 3-4 courses of the Faculty of Medicine Specialty «Medicine»/ А.В. Протасов, Мекхаэль Шехата Факхри Мекхаэль, А.Л. Кулакова, Д.Л.Титаров.- Moscow:2022.-52p.
- 5) Topographo-surgical anatomy and operative surgery of Thorax. Textbooks// М.Ш.Ф. Мекхаэль, М.Ю. Персов, А.В. Протасов.-Moscow:2022.-73p.
- 6) Topographo-surgical anatomy and operative surgery of Upper Limb. Textbooks// М.Ш.Ф. Мекхаэль, К.А. Лаймуна, М.Ю. Персов, А.В. Протасов.-Moscow:2022.-86p.

### *Additional readings:*

1. Topographic and clinical anatomy the human body/I.I.Kagan, S.N.Lyashchenko, A.O.Mironchev.- Moscow.-Geotar-Media, 2022.-253.
2. Topographic and anatomy of the human body: the teaching aid for foreign students/I.I.Kagan, S.N.Lyashchenko, A.O.Mironchev.- Moscow.-Geotar-Media, 2022.-256 p.  
[https://lib.rudn.ru:443/MegaPro/UserEntry?Action=Link\\_FindDoc&id=508879&idb=0](https://lib.rudn.ru:443/MegaPro/UserEntry?Action=Link_FindDoc&id=508879&idb=0)
3. General surgery / V.K. Gostishchev. - Moscow.-Geotar-Media, 5<sup>th</sup> ed.-2021.-799p.
4. General surgery. The manual/ V.K. Gostishchev. - Moscow.-Geotar-Media.-2020.-220p.  
[https://lib.rudn.ru:443/MegaPro/UserEntry?Action=Link\\_FindDoc&id=497901&idb=0](https://lib.rudn.ru:443/MegaPro/UserEntry?Action=Link_FindDoc&id=497901&idb=0)
5. Anatomy for plastic surgery of the Face, Head and Neck/ Koichi Watanabe-Mohammadali M. Shoja, Marios Loukas, R.Shane Tubbs.-2016.-242.  
[https://lib.rudn.ru/MegaPro/Web/SearchResult/ToPage/1#:~:text=https%3A/lib.rudn.ru%3A443/MegaPro/UserEntry%3FAction%3DRudn\\_FindDoc%26id%3D513494%26idb%3D0](https://lib.rudn.ru/MegaPro/Web/SearchResult/ToPage/1#:~:text=https%3A/lib.rudn.ru%3A443/MegaPro/UserEntry%3FAction%3DRudn_FindDoc%26id%3D513494%26idb%3D0)
6. Atlas of human anatomy/ F.H. Netter. - 6th ed.; International edition. - Philadelphia: Saunders : Elsevier, 2014. - 591 p.: il.

### *Internet sources*

1. Electronic libraries (EL) of RUDN University and other institutions, to which university students have access on the basis of concluded agreements:

- RUDN Electronic Library System (RUDN ELS) <http://lib.rudn.ru/MegaPro/Web>
- EL "University Library Online" <http://www.biblioclub.ru>

- EL "Yurayt" <http://www.biblio-online.ru>
- EL "Student Consultant" [www.studentlibrary.ru](http://www.studentlibrary.ru)
- EL "Trinity Bridge"

*2. Databases and search engines:*

- electronic foundation of legal and normative-technical documentation <http://docs.cntd.ru/>
- Yandex search engine [https:// www .yandex.ru/](https://www.yandex.ru/)
- Google search engine <https://www.google.ru/>
- Scopus abstract database <http://www.elsevierscience.ru/products/scopus/>

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

1. The set of lectures on the course “Topographic Anatomy and Operative Surgery”
2. The laboratory workshop (if any) on the course “Topographic Anatomy and Operative Surgery”
3. The guidelines for writing a course paper / project (if any) on the course “Topographic Anatomy and Operative Surgery”.
4. ....

\* 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 (GPC-4, GPC-5, GPC-6) 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  
Department of Operative surgery  
and Clinical anatomy named for  
I.D. Kirpatovsky

\_\_\_\_\_  
position, department

\_\_\_\_\_  
signature

D.L. Titarov

\_\_\_\_\_  
name and surname

Head of Operative surgery  
and Clinical anatomy named for  
I.D. Kirpatovsky

\_\_\_\_\_  
position, department

\_\_\_\_\_  
signature

A.V. Protasov

\_\_\_\_\_  
name and surname

**HEAD OF EDUCATIONAL DEPARTMENT:**

\_\_\_\_\_  
of Operative surgery

and Clinical anatomy named for

I.D. Kirpatovsky

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name of department

---

signature

A.V. Protasov

---

name and surname

**HEAD  
OF HIGHER EDUCATION PROGRAMME:**

Deputy Director for International

Affairs of Medical Institute of the

RUDN University

---

position, department

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signature

Y.Sh.Gushchina

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name and surname