

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

Medical Institute

Recommended MCSD

SYLLABUS
(STUDY GUIDE)

Subject

Topographic Anatomy and Operative Surgery

Recommended for the direction of training (specialty)

31.05.01 General Medicine

Program (profile, specialization)

General Medicine

1. Aims and objectives of discipline: anatomical and surgical training of students to get the basic knowledge and skills necessary for the future studies in a clinical departments and for independent medical practice in order to achieve training purposes. Forming students' general culture (GC) and professional competence (PC).

The tasks of discipline:

- Obtaining knowledge of topographic anatomy of the regions, organs and systems.
- application of topographic anatomical knowledge to justify the diagnosis, anatomical understanding of "risk factors", explain the features of the pathological processes, solve diagnostic and operative surgical problems.
- mastering of the basic elements of operative manipulations and several types of surgical skills and techniques.

2. Place of discipline in the structure of OP HE

Discipline topographic anatomy and operative surgery refers to the *basic* part of block B.1. of the curriculum.

In table №1 you can see former and later disciplines directed at developing students' competence according to the matrix of competence OP HE.

Former and later disciplines directed on developing students' competence

№ π/π	Code and name of the competence	Preceding disciplines	Following disciplines
General cultural competence			
1		Philosophy	
General professional competence			
2	GPC-5; (GPC-5.3) GPC-6 (GPC-6.1; 6.3)	Pathological physiology Pathological anatomy Human anatomy Histology with cytology and embryology	Hospital therapy, endocrinology Hospital surgery, pediatric surgery Traumatology, orthopedics Facultative therapy Facultative surgery
Professional competence (research, diagnostic and treatment activities)			
3	PC-1 (PC-1.3)	General surgery, Propaedeutics of Internal Diseases	Obstetrics and gynecology, Hospital therapy, Endocrinology and Hospitalized surgery, pediatric surgical Neurology, Neurosurgical Oncology, Radiational Therapy Traumatology, Orthopedics, Facultative therapy, Facultative surgery, Urology

3. Requirements to results of development of discipline

A specialist's programme is to establish the following competences:

General Professional Competence Category	General Professional Competence Code and Name	General Professional Competence Achievement Indicator Code and Name

Etiology and pathogenesis	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.
Primary health care	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).
	Professional Competence Code and Name	Professional Competence Achievement Indicator Code and Name
	PC-1. Being able to provide emergency or urgent medical care to a patient.	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.

Getting started studying the discipline the student should:

Know:

- basic concepts of topographic anatomy;
- the principle of layered structure of regions and the ability to use this knowledge in surgical interventions;
- general information of the structure of fascial-cellular tissue structures;
- topography fascial-cellular spaces, the principles of incision and drainage of purulent cavities, possible ways to drain the pus ;
- topography of the "weak points" of the walls of the abdomen and topographic substantiation of herniation; on the basis of this knowledge to provide methods of diagnostics and treatment of hernias;
- topography of the internal organs (holotopy, skeletopy, syntopy) and topographic anatomical substantiation of a choice of methods of examination and diagnosis, access to organs and principles of surgical interventions;
- topography of neurovascular structures and use this knowledge for access to main vessels and nerve trunks; the main sources of collateral circulation in the different regions of the human body in order to predict the consequences of thrombosis or ligation of the main vessels at different levels and methods of eliminating its consequences;
- zones of sensory and motor innervation, the elements of topical diagnosis of diseases of the peripheral nerves.
- the basic concepts and principles of operative surgery, choice and the stages of surgical operations.
- know the principles and the basic stages of operations:
 - primary surgical treatment of wounds.
 - tracheostomy.
 - abscess incision of mammary gland.
 - puncture of subclavian vein, pleural, pericardial, peritoneal cavity, urinary bladder.

- suturing wounds penetrating the chest wall (open pneumothorax);
- operations on wounds of the heart;
- opening and drainage of pleural and abdominal cavities;
- surgery for inguinal, femoral and umbilical hernia, hernias of linea alba, postoperative incisional hernias;
- revision of the abdominal cavity in penetrating wounds of the abdomen; intestine wound closure;
- resection of loops of the small and large intestines;
- resection of the stomach in Bilroth-1, Billroth-2 modification Hofmeister-Finsterer;
- appendectomy;
- cholecystectomy;
- splenectomy;
- nephrectomy;
- fistula formation: the stomach, small intestine, sigmoid and cecum, and gallbladder;
- formation of colostomy;
- operations at ruptured ectopic pregnancy;
- amputation: arm, forearm, hip, shin of tibia.
- know the principles of performance difficult surgical interventions:
 - osteoplastic and resection trepanation of the skull;
 - subtotal subfascial resection of the thyroid gland;
 - breast cancer surgery: radical mastectomy; sectoral resection of mammary gland;
 - surgical treatment of ischemic heart disease, open arterial duct, coarctation of the aorta;
 - suturing of liver wounds, anatomical and atypical liver resection;
 - plastic and reconstructive surgery on blood vessels;
 - surgery for varicose veins of the lower extremities;
 - microsurgical operations;
 - endovascular surgery;
 - endoscopic surgery.

Be ready to:

- use knowledge of topographic anatomy for understanding the pathogenesis of pathological process, its localization, distribution and manifestation in the form of symptoms and syndromes, justify the diagnosis, selection and holding of treatment and prevention of diseases;
- the use of external orienters to determine the boundaries of the regions of the human body to construct projections of internal organs and neurovascular bundles during various medical manipulations and surgical approaches to the organs, for diagnostics of diseases;
- carry on biomodel (anatomical material) and simulators basic elements of operational technique, using surgical instruments of general purpose and suture material;
- identify the surgical instruments and their parts, the purpose and use during surgical procedures tools of the following groups:
 - separation of tissues;
 - temporarily stop the bleeding;
 - join of tissues' parts;
 - accessory.
- dissect the soft tissue (skin, subcutaneous tissue, fascia, muscles, aponeuroses);
- produce temporary and final stop bleeding in the wound;
- knit surgical knots (simple, marine and double surgical);
- connect the soft tissue using sutures;
- suture the wound of the small intestine;

- apply a vascular suture;
- perform the primary surgical treatment of wounds on the anatomical biomodel;
- work independently with educational, scientific, regulatory, and reference books.

Manage:

- the main elements of the operational technique needed to provide emergency surgery using surgical instruments of general purpose:
 - dissection of soft tissues;
 - knitting surgical knots
 - carrying out temporary and terminal stop of bleeding in the wound;
 - soft tissues suturing.
- primary surgical treatment of wounds;
- intestinal wound closure.

4. Volume of discipline and types of study

General credit value of the discipline is 6 credit units.

Type of educational work	Total hours	semester	
		6	7
Classroom training (academic hours)	140	72	68
Including:			
<i>Lectures</i>			
<i>Practical trainings (PT)</i>	140	72	68
<i>Seminars (S)</i>			
<i>Laboratory work (LW)</i>			
Self study	76	36	40
The total course load (academic hours)	216	108	108
Credit Unit	6	3	3

5. Contents of the Discipline

5.1. The content of the disciplinary sections

№ п/п	Name of the section of discipline	Contents of the section
1.	Introduction to the discipline	Operative surgery and clinical anatomy as a discipline for study. Practical anatomy: classification of types. Operative surgery: content and methods of study. Surgical anatomy and clinical significance of fascias. Topographic anatomy of the limbs (introduction).
2.	Topographic anatomy of the upper and lower limbs	Shoulder girdle areas: subclavian, deltoid, scapular, axillary regions. Topographic anatomy of the shoulder and ulnar areas. Surgical anatomy of the shoulder and elbow joints. Topographic anatomy of the forearm and hand. Surgical anatomy of the wrist joint. Topographic anatomy of the gluteal region and thigh. Surgical anatomy of the femoral, obturator and adductor canals. Surgical anatomy of the hip joint. Topographic anatomy of the knee region, the popliteal fossa and shin. Topographic anatomy of the ankle joint region and foot. Surgical anatomy of the medial malleolus, calcaneal and plantar canals.

		Surgical anatomy of the knee joint, of the ankle joint.
3.	Operative surgery of the upper and lower limbs	<p>Surgical instruments. Basic operational techniques: separation of tissues, stop bleeding, put on and removal of skin node sutures, tying surgical knots in a ligature.</p> <p>Vascular suture (arteries and veins). Suture tendon. Nerve suture.</p> <p>Primary surgical treatment of wounds of the extremities.</p> <p>Amputation of limbs. Operations on the joints of the limbs.</p> <p>Operations on blood vessels of the limbs. Vascular suture.</p> <p>Operations on the peripheral nerves and tendons: suture of nerve, suture of tendon.</p>
4.	Topographic anatomy of the head, neck, thorax	<p>Cranial vault. Frontal - parietal - occipital region. Temporal region. Meninges and intermeningeal space. Topographic anatomy of the venous sinuses of the dura mater. Face. Superficial and deep lateral face regions.</p> <p>Fascias and fat spaces of the neck. The anterior neck region: submandibular triangle, carotid triangle, scalenovertebral triangle. Sternoclavicular and mastoid region and lateral region of the neck.</p> <p>Surgical anatomy of the neck organs: the esophagus, trachea, thyroid gland.</p> <p>Chest wall. Topography of intercostal spaces. The mammary gland.</p> <p>Thoracic cavity. Pleura and pleural sinuses. Thoracic cavity. Surgical anatomy of the lungs. Mediastinum. Surgical anatomy of organs of the anterior and posterior mediastinum. Surgical anatomy of the diaphragm.</p>
5.	Operative surgery of the head, neck, thorax	<p>Primary surgical treatment of head wounds. Trepanation of the skull.</p> <p>Operations on the thyroid gland. Tracheostomy. Operations in phlegmons and abscesses of the neck. Topographic-anatomic substantiation of incisions.</p> <p>Operative access to the organs of the thoracic cavity.</p> <p>Operations on the breast.</p> <p>Principles of surgical interventions on lungs, heart, esophagus.</p>
6.	Topographic anatomy of the abdomen	<p>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.</p> <p>Topographic anatomy of the abdomen. Abdominal cavity. Peritoneum. Ligaments, bursae, channels, sinuses, great and small omentum.</p> <p>Surgical anatomy of upper floor of the abdominal cavity: stomach, duodenum, liver, gallbladder and extrahepatic bile ducts, spleen, pancreas.</p> <p>Topographic anatomy of the abdomen. Surgical anatomy of the lower floor of the abdominal cavity: small intestine, large intestine.</p> <p>Posterior abdominal wall. Musculoaponeurotic and fascial formation of posterior abdominal wall.</p> <p>Retroperitoneal space. Fascia and cellular spaces. Surgical anatomy of organs and neurovascular structures: the kidney,</p>

		ureter, adrenal glands, abdominal aorta, vena cava inferior, thoracic lymph duct.
7.	Operative surgery of the abdomen	Intestinal suture. Intestinal anastomoses. Suturing of wounds of the stomach, small intestine and colon. Resection of the small intestine. Surgical approach to abdominal cavity organs: traditional, endoscopic. Abdominal wall hernias. Hernia repair operations. Operations during wounds of the liver. Extrahepatic biliary tract surgery. Cholecystectomy. Pancreatic surgery. 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 (gastrojejunosomy), resection of the stomach. Operations on the stomach. Kidney operations-nephrectomy.
8.	Topographic anatomy of the pelvis and perineum	Topographic anatomy and operative surgery of the pelvis. Fascia, cellular spaces. Surgical anatomy of organs of the male pelvis: the rectum, bladder, urethra, prostate, seminal vesicles, vas deferens. Surgical anatomy of organs of the female pelvis: rectum, uterus and its appendages, bladder, ureter. Topographic anatomy of the perineum. Fascia, cellular spaces. Pelvic and urogenital diaphragm. Surgical anatomy of organs of the perineum in males and females: the urethra, scrotum, testis, spermatic cord, vagina.
9.	Operative surgery of the pelvis and perineum	Operations for wounds of the rectum and urinary bladder. Operations for an ectopic (tubal) pregnancy.

5.2. Contents of Disciplinary Units and types of classes

№	Name of Unit	Lecture	PT	LW	S	Self-study	Total hours
1.	Introduction	-	2	-	-	2	4
2.	Topographic anatomy of the upper and lower limbs		20		-	9	29
3.	Operative surgery of the upper and lower limbs	-	12	-	-	8	20
4.	Topographic anatomy of the head, neck, thorax		20		-	9	29
5.	Operative surgery of the head, neck, thorax	-	18	-	-	8	26
6.	Topographic anatomy of the abdomen	-	25	-	-	12	37
7.	Operative surgery of the abdomen	-	9	-	-	8	17
8.	Topographic anatomy of the pelvis and perineum	-	25	-	-	12	37
9.	Operative surgery of the pelvis and perineum	-	9	-	-	8	17
Final			140			76	216

6. Laboratory training (*Is not provided*)

7. Seminars (*Is not provided*)

8. Material and technical support of the discipline:

Specially equipped classrooms. Museum of anatomical preparations, training topographo-anatomical tables, models, skeletons, waxworks, simulators for operational skills. General and specialized surgical sets of tools. Anatomical table (Anatontage) with 3D- visualization.

Multimedia complex (laptop, projector, screen), multimedia visual materials on various topics of the discipline. Videos. Situational tasks, computer tests on all subject topics.

9. Information support of the Discipline

a) The basic literature

Database of tests and presentations of classes on the subjects of the discipline in TUIS

b) Database, Information and Search Systems:

RUDN library : <http://lib.rudn.ru/>

The information platform : <https://esystem.rudn.ru/course/view.php?id=1572>

University library ONLINE: <http://www.biblioclub.ru/>

Vestnik RUDN. Series "Medicine": <http://journals.rudn.ru/medicine>

Universal database of East View: <http://online.ebiblioteka.ru/>

Scientific electronic library: <http://elibrary.ru/defaultx.asp>

On-line access to the logs. A database of information on all branches of science and electronic document delivery: <https://www.swetswise.com>

The electronic library of Elsevier: <http://www.elsevier.com/about/open-access/open-archives>

10. Educational and methodical support of the discipline:

a) *Main Literature*

1. Topographic anatomy and operative surgery: textbook/A.V.Nikolaev.-Moscow.-Geotar-Media, 2019.

http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=497916&idb=0

б) *Additional literature sources.*

- 1) General surgery. The manual/ V.K. Gostishchev. - Moscow.-Geotar-Media, 2020. http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=497901&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; Книга на английском языке. - Philadelphia: Elsevier, 2015. - 1161 p.: il.
- 4) Atlas of human anatomy/ F.H. Netter. - 6th ed.; International edition. - Philadelphia: Saunders : Elsevier, 2014. - 591 p.: il.

11. Guidelines for students on the development of the discipline:

The training consists of classroom classes, including practical exercises and independent work. The main study time is allocated for practical work on topographic anatomy and operative surgery.

When studying the discipline, it is necessary to use knowledge and master practical skills.

Practical classes are held in the form of practicing surgical operations, demonstrating anatomical material, preparations, using visual aids, educational films and presentations, solving situational problems, and answering test tasks.

During the study of operative surgery, students practice practical skills on the main elements of operative techniques.

Independent work of students involves preparation for classes, for a computer test control, for an oral survey and includes the study of visual aids (tables, anatomical preparations) and educational materials.

Work with educational literature is considered as a type of educational work in the discipline of topographic anatomy and operative surgery and is performed within the hours allotted for its study (in the section extra study material).

Educational materials in electronic form for the study of the discipline are available in the TUIS, on the local resources of the electronic library system of the RUDN. Presentations on the topics of classes can be recorded on CDs or flash cards for students to work independently on their home computer.

The initial level of knowledge of students is determined by testing, the current control of the assimilation of the subject is determined by an oral survey during classes, during analysis, when solving typical situational problems.

At the end of the study of the discipline, an intermediate certification is conducted in the form of an exam, which includes: test control, an oral survey on anatomical material, testing of practical skills, solving situational problems.

Questions on the discipline are included in the program of the final state certification.

12. Fund of estimated means for the interim assessment of students in the discipline:

Materials for assessing the level of development of educational material of the discipline "Topographic anatomy and Operative surgery" (evaluation materials), including a list of competencies indicating the stages of their formation, a description of indicators and criteria for evaluating competencies at various stages of their formation, a description of assessment scales, standard control tasks or other materials necessary for assessing knowledge, skills, and (or) experience of activities that characterize the stages of competence formation in the process of mastering the educational program, methodological materials, the defining procedures for assessing knowledge, skills, and (or) experience of activities that characterize the stages of competence formation are fully developed and are available to students on the discipline page in the TUIS RUDN.

The program is compiled in accordance with the requirements of the FSES HE.

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