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Federal State Budget Educational Institution
of Higher Education
Pacific State Medical University
of the Ministry of Health of the Russian Federation

APPROVED BY

Director of the Institute of
Simulation and Training Technology
_____ / Gnezdilov V.V./
"10th" of April 2025

SUBJECT GUIDE FOR TEACHERS AND STUDENTS FOR

Б1.О.11 Topographic anatomy and operative surgery

Specialty	**31.05.01 General Medicine** for international students (in English)
Degree	Specialist's degree
Profile	02 "Healthcare" (in the field of providing primary health care to the population in medical organizations: polyclinics, outpatient clinics, inpatient/outpatient facilities of the municipal health care system)
Mode of study	**Full-time**
Period of mastering the BEP	**6 years**
Institute	of Simulation and Training Technology

Vladivostok, 2025

Subject guide for teachers and students for **Б1.О.11 Topographic anatomy and operative surgery** is based on:

1) Federal State Educational Standard of Higher Education for the specialty approved by the Order No. 988 of Ministry of Science and Higher Education of the Russian Federation
dated August 12, 2020

2) Curriculum for the 31.05.01 General Medicine for international students (in English), profile 02 "Healthcare" (in the field of providing primary health care to the population in medical organizations: polyclinics, outpatient clinics, inpatient/outpatient facilities of the municipal health care system), approved by the Academic Council of FSBEI HE PSMU of the Ministry of Health of Russia, Report No. 8/24-25 dated March 31, 2025.

Subject guide for teachers and students for the discipline was developed by the writing team of the Institute of Simulation and Training Technology of the FSBEI HE PSMU of the Ministry of Health of Russia, under the guidance of the Director of the Institute Gnezdilov V.V.

Developed by:

Senior lecturer	Candidate of Medical Sciences	Korolev D.V.
(position held)	(academic degree, academic title)	(full name)
Assistant		Stepanyugina A.K.
(position held)	(academic degree, academic title)	(full name)

1. GENERAL PROVISIONS

Subject guide for **Б1.О.11 Topographic anatomy and operative surgery** is a set of recommendations and explanations that facilitate to optimal organization of mastering this discipline.

Regular analysis of lecture materials and work with end-of-the-text questions are necessary for better understanding of the material and systematization of knowledge of **Б1.О.11 Topographic anatomy and operative surgery**. Particular attention should be paid to emerging questions, confusing terms, and conflicts of points of view during the independent review of the lecture material. If necessary, a student should contact the teacher for advice. Lecture material streamlines students' thinking, while practical classes provide deeper insight into the material of the discipline.

Special attention should be paid to the content of the main provisions and conclusions, explanation of phenomena and facts, and clarification of the practical application of theoretic aspects of topic when preparing for a practical class. During this process students should aim to understand and remember the main provisions of the material under consideration, examples provided, as well as understand the illustrative material.

Collections of assessment tools are used to organize independent study of topics of the discipline.

Independent work of students is facilitated by the following:

1. availability and accessibility of the necessary educational and reference material;
2. a system of regular quality control of completed independent work;
3. availability of teacher's advice.

Subject guides for self-study are presented as literary sources and visual aids. Subject guides for independent work of students include a list of library resources of the educational institution and other materials accessible to students.

Independent work is a type of in-person extracurricular work of teachers and students of **Б1.О.11 Topographic anatomy and operative surgery**. Control of independent work is conducted by the leading teacher. Evaluation of independent work results is taken into account when conducting interim examination of students throughout the **Б1.О.11 Topographic anatomy and operative surgery** course.

Continuous assessment during the **Б1.О.11 Topographic anatomy and operative surgery** course is implemented in order to check indicators of achieving competencies, to stimulate students' academic work, and improve methods of mastering new knowledge. Continuous assessment during the **Б1.О.11 Topographic anatomy and operative surgery** course is conducted during the semester to assess all types and sections of the academic discipline that encompass the competencies developed by the discipline: classroom questioning, conducting discussions, working with tests, and writing library-research papers. Continuous assessment of students' knowledge and results of their preparation for practical classes is conducted during every class session.

Interim assessment aims to determine the level of mastery of competency indicators. It is conducted in the exam format after the student has mastered all sections of **Б1.О.11 Topographic anatomy and operative surgery** and takes into account learning outcomes for all types of student work over the entire period of mastering the **Б1.О.11 Topographic anatomy and operative surgery** course.

Time allotted for interim assessment is indicated in the schedule.

Assignments given during practical classes, as well as assignments aimed to prepare students for continuous and interim assessment, are included in the collection of assessment tools for **Б1.О.11 Topographic anatomy and operative surgery**. If necessary, students should contact the teacher for advice. It is necessary to thoroughly think over questions that need clarification before seeking teacher's advice.

2. SUBJECT GUIDES FOR LECTURE CLASSES

Table 1. Subject Guides for **Б1.О.11 Topographic anatomy and operative surgery** Lectures

Topic No.1 Introduction. Objectives and methods of studying topographic anatomy and operative surgery	
Duration of the lecture (in academic hours):	2
Purpose of the lecture: 1. tell students about the history of surgical intervention and topographic anatomy, as well as the methods of studying these subjects; 2. define key terms: surgical intervention (surgical approach and technique, requirements, and classification); 3. analyze issues of deontology in surgery and experimental research.	
Lecture plan, order of presentation of its sections: 1. Pirogov N.I.: key milestones. Contribution to the creation and development of topographic anatomy ("ice" anatomy, Pirogov's laws, etc.) and surgery (the beginnings of osteoplastic amputations, the use of anesthesia, rhinoplasty, triage of the wounded, plaster casts, etc.). Domestic topographic-anatomical schools: F.I. Inozemtsev, A.A. Bobrov, P.I. Dyakonov, N.N. Burdenko, V.N. Shevkunenko, G.E. Ostroverkhov, V.V. Kovanov, F.I. Valker, E.M. Margorin, and others 2. Surgical approach: physiological suitability, cosmesis, objective criteria for assessing approaches according to Sozon-Yaroshevich 3. Surgical approach: requirements according to N.N. Burdenko (anatomical accessibility, technical feasibility, physiological permissibility), types (-tomy, -stomy, resection, etc.) 4. Ethical rules for work in the morgue and on experimental animals-	
Recommended reading: 1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.; 2. Kagan, I. I. Topographic anatomy and operative surgery: textbook [Electronic resource] / I. I. Kagan, S. V. Chemezov, etc. - 2nd ed., revised. - M.: GEOTAR-Media, 2022. - 672 p. URL: http://www.studentlibrary.ru; 3. Kalmin, O. V. Topography of organs in tables and diagrams: textbook. Manual [Electronic resource] / O. V. Kalmin. - St. Petersburg: SpetsLit, 2017. - 151 p. URL: http://books-up.ru; 4. Nikolaev, A. V. Topographic Anatomy and Operative Surgery: Textbook [Electronic resource] / A. V. Nikolaev. - 3rd ed., corrected. and additional - Moscow: GEOTAR-Media, 2019. - 736 p. URL: http://www.studentlibrary.ru/ 5. Operative Surgery: Textbook on Manual Skills [Electronic resource] / edited by A. A. Vorobyov, I. I. Kagan. - Moscow: GEOTAR-Media, 2015. URL: http://www.studentlibrary.ru/	
Topic No.2 Fundamentals of surgical interventions on blood vessels	
Duration of the lecture (in academic hours):	2
Purpose of the lecture: 1. tell students about general blood supply in the human body; 2. define key terms: collateral circulation; 3. review basic vascular surgeries; 4. introduce the concept of intravascular surgery; 5. review methods of vascular ligation, techniques, and methods of vascular suturing.	

Lecture plan, order of presentation of its sections:

1. General diagram of the main blood flow. External landmarks and projection lines of the main vascular-nerve bundles
2. Ligation of vessels in and along the wound: indications and rules. Types of arterial (intra-, intersystemic, and distant) and venous (porto- and cavacaval) anastomoses
3. Vessel suturing: history of use, requirements, classification. Vascular suturing devices (Goodov, 1947). Carrel suturing technique
4. Basic vascular surgeries: anastomosis, plastic surgery, prosthetics, bypass grafting
5. Materials, instruments, and equipment for intravascular surgeries. Types of surgeries: embolectomy, thrombectomy, vascular occlusion, X-ray vascular dilation and prosthetics

Recommended reading:

1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.;
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3. Kalmin, O. V. Topography of organs in tables and diagrams: textbook. Manual [Electronic resource] / O. V. Kalmin. - St. Petersburg: SpetsLit, 2017. - 151 p. URL: http://books-up.ru;
4. Nikolaev, A. V. Topographic Anatomy and Operative Surgery: Textbook [Electronic resource] / A. V. Nikolaev. - 3rd ed., corrected. and additional - Moscow: GEOTAR-Media, 2019. - 736 p. URL: http://www.studentlibrary.ru/
5. Operative Surgery: Textbook on Manual Skills [Electronic resource] / edited by A. A. Vorobyov, I. I. Kagan. - Moscow: GEOTAR-Media, 2015. URL: http://www.studentlibrary.ru/

Topic No.3 Fundamentals of surgical interventions on the spine, spinal cord, autonomic nervous system and peripheral nerves

Duration of the lecture (in academic hours):	2

Purpose of the lecture:

1. provide students with a general overview of the nervous system and spine;
2. discuss topical diagnostics of nerve damage to the extremities;
3. review the basics of spinal and peripheral nerve surgery.

Lecture plan, order of presentation of its sections:

1. Sections and structure of the spine and spinal cord. Autonomic and somatic nervous systems. Reflex arc. Structure of the peripheral nerve
2. Somatic nervous system: plexuses, zones of sensory and motor innervation, levels and symptoms of nerve damage in the upper and lower extremities
3. Neurolysis, suturing, and nerve grafting. Laminectomy. Anterior and posterior spinal fusion with autologous and explanted cancellous tissue

Recommended reading:

1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.;
2. Kagan, I. I. Topographic anatomy and operative surgery: textbook [Electronic resource] / I. I. Kagan, S. V. Chemezov, etc. - 2nd ed., revised. - M.: GEOTAR-Media, 2022. - 672 p. URL: http://www.studentlibrary.ru;
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Topic No.4 Fascia and tissue planes (potential spaces) of the limbs. Phlegmon and paronychia surgeries

Duration of the lecture (in academic hours):	2

Purpose of the lecture:
1. define the fascial bed and cellular spaces of the extremities;
2. review the general principles of surgical treatment of soft tissue suppurations;
3. discuss the general principles of surgical anatomy of the hand;
4. discuss paronychias and phlegmons of the hand.

Lecture plan, order of presentation of its sections:
1. Fascial beds and cellular spaces of the upper and lower extremities. Patterns and routes of cellulitis spread, abscess localization
2. Timeliness of surgery, physiological and cosmetic incisions, drainage of abscesses taking into account muscle compartments and cellular spaces or by the closest route, wound drainage, etc.
3. Structural features of the skin and subcutaneous fat and their significance. Fascial beds and cellular spaces of the hand, their contents, palmar aponeurosis and commissural openings. Innervation and blood supply of the hand. Synovial sheaths of the hand, Y-shaped cellulitis
4. Paronychias and phlegmons of the hand: etiology, classification, treatment (conservative and surgical). Anesthesia (types, methods), bleeding, incisions for various types of paronychia with maximum consideration of the surgical anatomy of the fingers

Recommended reading:
1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.;
2. Kagan, I. I. Topographic anatomy and operative surgery: textbook [Electronic resource] / I. I. Kagan, S. V. Chemezov, etc. - 2nd ed., revised. - M.: GEOTAR-Media, 2022. - 672 p. URL: http://www.studentlibrary.ru;
3. Kalmin, O. V. Topography of organs in tables and diagrams: textbook. Manual [Electronic resource] / O. V. Kalmin. - St. Petersburg: SpetsLit, 2017. - 151 p. URL: http://books-up.ru;
4. Nikolaev, A. V. Topographic Anatomy and Operative Surgery: Textbook [Electronic resource] / A. V. Nikolaev. - 3rd ed., corrected. and additional - Moscow: GEOTAR-Media, 2019. - 736 p. URL: http://www.studentlibrary.ru/
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Topic No.5 Fundamentals of surgical interventions on the organs of musculoskeletal system. Amputations and exarticulations

Duration of the lecture (in academic hours):	2

Purpose of the lecture:

1. describe the morphological and clinical principles of bone fracture consolidation;
2. describe the basic principles of bone fracture treatment;
3. review surgical interventions on long tubular bones;
4. describe the main surgeries on limb joints;
5. classify amputations;
6. describe the general rules and techniques of amputations;
7. examine specific amputation methods;
8. discuss the specific features of amputations in military field conditions.

Lecture plan, order of presentation of its sections:

1. Morphological substrates of bone regeneration (periosteum, endosteum, extravasate, etc.). Morphological phases and clinical stages of bone regeneration according to Kaplan. General and local factors influencing bone regeneration
2. Principles of bone fracture treatment: choice of treatment method, functionality of techniques, prevention of wound infection, reduction of fragments, tight alignment and stabilization of the fracture site, etc.
3. Methods of treating bone fractures (skeletal traction, plaster casts, extra- and intramedullary osteosynthesis, compression-distraction osteosynthesis) and their critical evaluation. Osteotomy: linear and segmental
4. Joint surgeries: arthrotomy, arthrodesis, arthroplasty, joint replacement. 5. Classification of amputations by time (primary, secondary, reamputations), indications according to V.A. Babosh
5. Main stages of amputations:
    a. skin and subcutaneous fat dissection (single- and two-flap methods, circular, flap calculation)
    b. soft tissue dissection (single-, two-, and three-stage methods, guillotine)
    c. bone and periosteum preparation (sub- and aperiosteal methods)
    d. vessel and nerve preparation
    e. wound suturing
6. 3-stage amputation according to Pirogov, osteoplastic amputation according to Pirogov and Gritti-Shimanovsky, amputations of phalanges and fingers. 8. Features of amputations in military field conditions: circular amputation may be used, the wound may not be sutured, additional stripe incisions may be made, the lower limb indicated for amputation may be widened

Recommended reading:

1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.;
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Topic No.6 Surgical anatomy and fundamentals of head surgery

Duration of the lecture (in academic hours):	2

Purpose of the lecture:
1. introduce the surgical anatomy of the cranial vault;
2. introduce the surgical anatomy of the skull base;
3. describe the main operations on the cranial region of the head.

Lecture plan, order of presentation of its sections:
1. Fronto-parieto-occipital, temporal, and mammillary regions
2. Features of the blood supply to the soft tissues of the skull and their practical significance. Shipo's triangle: boundaries and significance
3. The foramina of the base of the skull and their contents for topical diagnosis of basal fractures. The meninges
4. The cerebrospinal fluid system. Blood supply to the brain. Venous sinuses
5. Primary surgical treatment of penetrating and non-penetrating head wounds. Craniotomy: types and main stages. Cranioplasty
6. Surgical anatomy and treatment of congenital defects: cerebral hernias, hydrocephalus

Recommended reading:
1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.;
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Topic No.7 Surgical anatomy and fundamentals of neck surgeries

Duration of the lecture (in academic hours):	2

Purpose of the lecture:
1. define the fascia and cellular spaces of the neck;
2. describe the main vascular and nerve bundles of the neck and nerve plexuses;
3. review the main operations on the neck.

Lecture plan, order of presentation of its sections:
1. Classification of the cervical fascia according to Shevkunenko and M.A.N. Superficial and deep, limited and communicating cellular spaces, routes of spread of cervical cellulitis
2. Neurovascular bundles of the internal and external triangles of the neck
3. Cervical and brachial plexuses, stellate ganglion. Vagus, phrenic, and recurrent nerves. Thoracic duct. Details of the topography of the neck organs. Approaches to the organs and vessels of the neck. Incisions for opening cervical cellulitis
4. Lymphosorption. Fundamentals of thyroid surgery. Tracheostomy

Recommended reading:
1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.;
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Topic No.8 Fundamentals of surgical interventions on the thoracic wall and organs of the chest cavity

Duration of the lecture (in academic hours):	2

Purpose of the lecture:
1. surgical anatomy of the chest wall;
2. topography of the mammary gland;
3. fundamentals of surgical interventions on the chest wall;
4. surgical anatomy of the pleural cavity;
5. Surgical anatomy of the mediastinum;
6. Basic operations on the organs of the chest cavity.

Lecture plan, order of presentation of its sections:
1. Skeleton, layers, fascia, and cellular spaces of the chest wall, particular features in children. Topography of the intercostal space
2. Diaphragm: openings, contents, weak points. Topography and significance of the internal thoracic artery
3. Mammary gland: structure, lymph drainage. Incision of mastitis and retromammary phlegmon
4. Puncture and drainage of the pleural cavity. Types of thoracotomy, assessment
5. Pleural cavities and sinuses. Lungs: division into lobes, segments, root of the lung
6. Mediastinum: sections, cellular spaces. Topography of the organs of the anterior (heart and great vessels, thymus gland, phrenic and vagus nerves) and posterior (esophagus, aorta, thoracic duct, vagus nerves, and sympathetic trunk) mediastinum
7. Surgeries for penetrating chest wounds. Pneumothorax classification and first aid features. Lung surgery: pneumotomy, resections. Concept of surgery for coronary insufficiency
8. Surgical anatomy and surgical treatment of congenital heart defects (patent ductus arteriosus, septal defects, tetralogy of Fallot, coarctation of the aorta, pulmonary artery stenosis)

Recommended reading:
1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.;
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Topic No.9 Fundamentals of surgical interventions on the anterior abdominal wall

Duration of the lecture (in academic hours):	2

Purpose of the lecture:
1. topographic anatomy of the lateral and medial abdominal wall;
2. describe the weak points of the anterior abdominal wall;
3. review the surgical anatomy of hernias;
4. fundamentals of surgery for external abdominal hernias.

Lecture plan, order of presentation of its sections:
1. The structure of the abdominal wall in the lateral and medial sections, blood supply and innervation, venous anastomoses
2. Topography of the internal surface of the anterior abdominal wall
3. The inguinal and femoral canals, umbilical ring, white line, and Spigelian line: structure, characteristics in adults and children
4. Topography of the scrotum in relation to the surgical anatomy of hernias
5. Classification of hernias, component parts. Surgical anatomy of direct, oblique (congenital and acquired), sliding, strangulated inguinal hernias, hernias of the umbilical ring and white line, femoral canal, and incisional hernias
6. Stages of herniotomy, principles of surgery for oblique and direct hernias, hernias in other locations. Laparoscopic herniotomy

Recommended reading:
1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.;
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Topic No.10 Surgical anatomy of abdominal cavity

Duration of the lecture (in academic hours):	2

Purpose of the lecture:

1. describe the topography of the peritoneum and its derivatives;
2. review the topography of the abdominal organs;
3. surgical approaches to the abdominal organs.

Lecture plan, order of presentation of its sections:

1. Topography of the peritoneum of the upper abdominal cavity: hepatic, proventriculus, omental bursa, omental foramen; boundaries and significance. Lesser omentum: ligaments, contents, topography, and significance of the elements of the hepatoduodenal ligament. Greater omentum: significance and features in children
2. Derivatives of the peritoneum of the lower abdominal cavity: canals, sinuses, mesentery of organs, and practical significance
3. Stomach: ligaments, blood supply and innervation, lymphatic drainage, features of venous outflow. Duodenum and duodenojejunal flexure: relationship to the peritoneum, blood supply, duct entry points, and practical significance. Topography of the small and large intestines, iliocaecal angle, and appendix
4. Stomach: ligaments, blood supply and innervation, lymphatic drainage, features of venous outflow. Duodenum and duodenojejunal flexure: relationship to the peritoneum, blood supply, duct entry points, and practical significance. Topography of the small and large intestines, iliocaecal angle, and appendix

Recommended reading:

1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.;
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Topic No.11 Principles of abdominal surgery

Duration of the lecture (in academic hours):	2

Purpose of the lecture:

1. classify the types of intestinal anastomoses;
2. review intestinal suture options;
3. discuss specific surgical techniques on the gastrointestinal tract.

Lecture plan, order of presentation of its sections:

1. Main surgical objectives (removal of the pathological lesion, restoration of the integrity of the gastrointestinal tract, maximum possible preservation of secretory-motor functions, sealing of the wound of a hollow organ). Intestinal anastomosis: types, critical assessment
2. Intestinal suture: requirements (tightness, hemostasis, asepticity), classification (clean and dirty, continuous and interrupted, single- and multi-layer). Features of anastomosis formation in the small and large intestine

3. Gastrotomy and gastrostomy (temporary and permanent), types of gastroenterostomy. Types of gastric resection: diagrams, critical assessment
4. Colostomy and artificial anus. Abdominal cavity exploration

Recommended reading:
1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.;
2. Kagan, I. I. Topographic anatomy and operative surgery: textbook [Electronic resource] / I. I. Kagan, S. V. Chemezov, etc. - 2nd ed., revised. - M.: GEOTAR-Media, 2022. - 672 p. URL: http://www.studentlibrary.ru;
3. Kalmin, O. V. Topography of organs in tables and diagrams: textbook. Manual [Electronic resource] / O. V. Kalmin. - St. Petersburg: SpetsLit, 2017. - 151 p. URL: http://books-up.ru;
4. Nikolaev, A. V. Topographic Anatomy and Operative Surgery: Textbook [Electronic resource] / A. V. Nikolaev. - 3rd ed., corrected. and additional - Moscow: GEOTAR-Media, 2019. - 736 p. URL: http://www.studentlibrary.ru/
5. Operative Surgery: Textbook on Manual Skills [Electronic resource] / edited by A. A. Vorobyov, I. I. Kagan. - Moscow: GEOTAR-Media, 2015. URL: http://www.studentlibrary.ru/

Topic No.12 Fundamentals of surgical interventions on liver and pancreas

Duration of the lecture (in academic hours):	2

Purpose of the lecture:
1. surgical anatomy of the liver and extrahepatic bile ducts;
2. fundamentals of surgical interventions on the liver and bile ducts;
3. surgical anatomy and basics of operations on the pancreas.

Lecture plan, order of presentation of its sections:
1. Liver: relationship to the peritoneum, ligaments along the visceral and diaphragmatic surfaces, types of hepatic porta structure, segmental structure along the portal and caval systems. Blood supply: intra- and extra-organ anastomoses, venous blood flow characteristics, porto- and cavacaval anastomoses. Topography of the gallbladder and extrahepatic bile ducts
2. Methods for stopping liver bleeding: mechanical, physical, and chemical. Hemostatic liver sutures
3. Liver resection methods: anatomical and atypical. Portal hypertension: types of hepatic blood flow blockade, 4 groups of surgeries for portal hypertension
4. Cholecystectomy (including laparoscopic), bile duct drainage
5. Pancreas: blood supply and innervation. Annular gland. Approaches and basic surgeries for pancreatitis, cysts, and pancreatic trauma

Recommended reading:
1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.;
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Topic No.13 Fundamentals of surgical interventions on the organs of the retroperitoneal space and lesser pelvis

Duration of the lecture (in academic hours):	2

Purpose of the lecture:

1. examine the fascia and cellular structures of the retroperitoneal space;
2. analyze the topography of the organs, vessels, and nerves of the retroperitoneal space;
3. basic operations on the kidneys and ureters;
4. define the pelvic floors, fascia, and cellular spaces and determine their practical significance;
5. topography of the pelvic organs; basic operations on the pelvic organs;
6. topographic anatomy of the perineum;
7. surgical anatomy and features of surgical interventions on the pelvic organs and perineum.

Lecture plan, order of presentation of its sections:

1. Features of the topography of the fascia and layers of retroperitoneal tissue, the routes of cellulitis, and approaches for their incision
2. The kidneys: syntopy, capsules, and blood supply. Topography of the ureters
3. The aorta: parietal and visceral branches. Autonomic and somatic nerve plexuses of the lumbar region
4. Intra- and extraperitoneal approaches to the kidneys, adrenal glands, and ureters: critical assessment. Organ-preserving surgery for kidney trauma. Nephrectomy, pyelotomy. Suture and plastic surgery on the ureters
5. The peritoneal, subperitoneal, and subcutaneous pelvic floors: contents, cellular spaces, routes of cellulitis, and options for their incision. The pouches of Douglas and their significance. Vessels and nerves of the pelvis
6. Topography of the pelvic organs: bladder, rectum, uterus and appendages, prostate gland, seminal vesicles, and vas deferens
7. Features of urinary tract surgery. Cystostomy, bladder plastic surgery. Approaches to the prostate gland. Surgeries on the uterus and its appendages. Surgery for hemorrhoids
8. Topographic anatomy of the male and female perineum: vascular and nerve bundles, cellular spaces, rectum, scrotum

Recommended reading:

1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.;
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Topic No.14 Fundamentals of organ and tissue transplantation	
Duration of the lecture (in academic hours):	2
Purpose of the lecture: 1. examine the legal and deontological aspects of organ and tissue transplantation; 2. classify transplant procedures; 3. examine issues of organ and tissue preservation; 4. examine specific methods of organ and tissue transplantation.	
Lecture plan, order of presentation of its sections: 1. Legal issues of establishing the fact of death, issues of "legal consent" for transplantation on the part of a living donor or their relatives, deviations from the basic rule "do no harm!", etc. 2. Classification of surgeries by type of transplant (auto-, iso-, etc.), its location (ortho- and heterotopic), viability (allostatic and allovital) 3. Preservation of tissues (low-temperature and deep freezing, lyophilization, chemical and enzymatic treatment) and organs (hypothermia, hyperbaric oxygenation, organ perfusion) 4. Skin grafting: plastic surgery with local tissues, free grafting (thin- and full-layer flaps), pedicle grafting (Italian method and Filatov method) 5. Heart transplantation (Lower and Shumway method, 1961), kidney transplantation, and liver transplantation (orthotopic and heterotopic) 6. Lung and heart-lung complex transplantation options 7. Pancreas transplantation (with preservation of endocrine and exocrine function, cell culture transplantation)	
Recommended reading: 1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.; 2. Kagan, I. I. Topographic anatomy and operative surgery: textbook [Electronic resource] / I. I. Kagan, S. V. Chemezov, etc. - 2nd ed., revised. - M.: GEOTAR-Media, 2022. - 672 p. URL: http://www.studentlibrary.ru; 3. Kalmin, O. V. Topography of organs in tables and diagrams: textbook. Manual [Electronic resource] / O. V. Kalmin. - St. Petersburg: SpetsLit, 2017. - 151 p. URL: http://books-up.ru; 4. Nikolaev, A. V. Topographic Anatomy and Operative Surgery: Textbook [Electronic resource] / A. V. Nikolaev. - 3rd ed., corrected. and additional - Moscow: GEOTAR-Media, 2019. - 736 p. URL: http://www.studentlibrary.ru/ 5. Operative Surgery: Textbook on Manual Skills [Electronic resource] / edited by A. A. Vorobyov, I. I. Kagan. - Moscow: GEOTAR-Media, 2015. URL: http://www.studentlibrary.ru/	

3. SUBJECT GUIDES FOR PRACTICAL CLASSES

Table 2. Subject Guides for Practical **Б1.О.11 Topographic anatomy and operative surgery** Classes

Topic No.1 Methods of studying topographic anatomy. Surgical instruments	
Duration of the practical class (in academic hours):	2

Purpose of the practical class: 1. consolidate knowledge acquired on the classification and stages of surgical interventions, as well as the specifics of their implementation; 2. during the discussion, outline the main groups of surgical instruments; 3. thoroughly go over the techniques of working with general surgical instruments; 4. develop practical skills in separating and suturing tissues.
Practical classes requirements: classrooms equipped with multimedia equipment, blackboards, simulation equipment, and subject guides for the discipline. Surgical instrument sets (general and specialized) and suture material for demonstration. A simulator for practicing basic surgical skills with a tissue sample
Independent work of the student: writing a research paper. Preparing a report on a completed lecture. Working with study materials.
Methods of evaluation of acquired knowledge and skills: discussion of reports, classroom questioning, tests.
Recommended reading: 1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.; 2. Kagan, I. I. Topographic anatomy and operative surgery: textbook [Electronic resource] / I. I. Kagan, S. V. Chemezov, etc. - 2nd ed., revised. - M.: GEOTAR-Media, 2022. - 672 p. URL: http://www.studentlibrary.ru; 3. Kalmin, O. V. Topography of organs in tables and diagrams: textbook. Manual [Electronic resource] / O. V. Kalmin. - St. Petersburg: SpetsLit, 2017. - 151 p. URL: http://books-up.ru; 4. Nikolaev, A. V. Topographic Anatomy and Operative Surgery: Textbook [Electronic resource] / A. V. Nikolaev. - 3rd ed., corrected. and additional - Moscow: GEOTAR-Media, 2019. - 736 p. URL: http://www.studentlibrary.ru/ 5. Operative Surgery: Textbook on Manual Skills [Electronic resource] / edited by A. A. Vorobyov, I. I. Kagan. - Moscow: GEOTAR-Media, 2015. URL: http://www.studentlibrary.ru/
Topic No.2 Suturing and surgical incisions: rules and techniques. Arrest of bleeding: temporary and complete

Duration of the practical class (in academic hours):	2

Purpose of the practical class: 1. consolidate knowledge acquired on methods of suturing and surgical incisions; 2. during the discussion, outline main methods of stopping bleeding; 3. thoroughly go over definitions and concepts of hemostasis; 4. examine patterns of and distinctive features of venous and arterial bleeding; 5. develop practical skills in separating and suturing tissues.
Practical classes requirements: classrooms equipped with multimedia equipment, blackboards, simulation equipment, and subject guides for the discipline. Surgical instrument sets (general and specialized) and suture material for demonstration. A simulator for practicing basic surgical skills with a tissue sample
Independent work of the student: writing a research paper. Preparing a report on a completed lecture. Working with study materials.
Methods of evaluation of acquired knowledge and skills: discussion of reports, classroom questioning, tests.

Recommended reading:
1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.;
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5. Operative Surgery: Textbook on Manual Skills [Electronic resource] / edited by A. A. Vorobyov, I. I. Kagan. - Moscow: GEOTAR-Media, 2015. URL: http://www.studentlibrary.ru/

Topic No.3 Topographic anatomy of the spine and spinal cord. Spinal tap. Laminectomy. Surgical methods of spine fracture fixation

Duration of the practical class (in academic hours):	2

Purpose of the practical class:
1. consolidate knowledge acquired on the topographic anatomy of the spine and spinal cord;
2. during the discussion, outline main methods of lumbar puncture and laminectomy;
3. thoroughly go over surgical methods of spinal fixation in fractures;
4. reinforce practical skills in separating and suturing tissues.

Practical classes requirements: classrooms equipped with multimedia equipment, blackboards, simulation equipment, and subject guides for the discipline. Surgical instrument sets (general and specialized) and suture material for demonstration. A simulator for practicing basic surgical skills with a tissue sample

Independent work of the student: writing a research paper.
Preparing a report on a completed lecture. Working with study materials.

Methods of evaluation of acquired knowledge and skills: discussion of reports, classroom questioning, tests.

Recommended reading:
1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.;
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Topic No.4 Topographic anatomy of the deltoid, scapular, subclavian, and axillary regions. Shoulder joint, joint puncture (arthrocentesis)

Duration of the practical class (in academic hours):	2

Purpose of the practical class:
1. study the topographic anatomy of the deltoid region, paying attention to external landmarks and boundaries, muscle topography, vessel and nerve projections, fascia, and cellular spaces;
2. study the topographic anatomy of the subclavian region, paying attention to external landmarks and boundaries, muscle topography, vessel and nerve projections, fascia, and cellular spaces;
3. study the topographic anatomy of the scapular region, paying attention to external landmarks and boundaries, muscle topography, vessel and nerve projections, fascia, and cellular spaces;
4. study the topographic anatomy of the axillary region, paying attention to external landmarks and boundaries, muscle topography, wall, vessel and nerve projections, fascia, and cellular spaces;
5. provide topographic and anatomical justifications for the possible pathways of spread of purulent and inflammatory processes, hematomas in the above-mentioned areas;
6. provide a topographic and anatomical justification for rational approaches and techniques in the surgical treatment of purulent processes in the shoulder girdle;
7. study projection lines and surgical approaches to the axillary artery;
8. reinforce practical skills in separating and suturing tissues.

Practical classes requirements: classrooms equipped with multimedia equipment, blackboards, simulation equipment, and subject guides for the discipline. Surgical instrument sets (general and specialized) and suture material for demonstration. A simulator for practicing basic surgical skills with a tissue sample

Independent work of the student: writing a research paper.
Preparing a report on a completed lecture. Working with study materials.

Methods of evaluation of acquired knowledge and skills: discussion of reports, classroom questioning, tests.

Recommended reading:
1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.;
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Topic No.5 Topographic anatomy of the arm and forearm. Ulnar fossa. Elbow and wrist joints, joint puncture (arthrocentesis)

Duration of the practical class (in academic hours):	2

Purpose of the practical class:
1. study the topographic anatomy of the shoulder, paying attention to external landmarks and boundaries, projections of vessels and nerves, fascia and cellular spaces, and age-related characteristics;
2. study the topographic anatomy of the elbow, paying attention to external landmarks and boundaries, projections of vessels and nerves, fascia and cellular spaces, and age-related characteristics;

3. study the topographic anatomy of the forearm, paying attention to external landmarks and boundaries, projections of vessels and nerves, fascia and cellular spaces, and age-related characteristics;
4. provide a topographic and anatomical justification for the possible routes of spread of purulent and inflammatory processes and hematomas;
5. provide a topographic and anatomical justification for rational surgical approaches and techniques for purulent processes in the areas studied;
6. reinforce practical skills in separating and suturing tissues.

Practical classes requirements: classrooms equipped with multimedia equipment, blackboards, simulation equipment, and subject guides for the discipline. Surgical instrument sets (general and specialized) and suture material for demonstration. A simulator for practicing basic surgical skills with a tissue sample

Independent work of the student: writing a research paper.
Preparing a report on a completed lecture. Working with study materials.

Methods of evaluation of acquired knowledge and skills: discussion of reports, classroom questioning, tests.

Recommended reading:
1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.;
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Topic No.6 Topographic anatomy of the hand
Knowledge control: the upper limb

Duration of the practical class (in academic hours):	2

Purpose of the practical class:
1. study the topographic anatomy of the palmar surface and dorsum of the hand, paying particular attention to the course of the fasciae, the location and connections of the cellular spaces, synovial sheaths and sacs, osteofibrous canals, and their age-related characteristics;
2. provide a topographic and anatomical justification for the possible routes of spread of purulent and inflammatory processes and hematomas;
3. analyze the classification of purulent diseases of the fingers and hand (according to their location);
4. provide a topographic and anatomical justification for surgical treatment methods for felons, phlegmons of the hand, and Pirogov's space;
5. reinforce practical skills in separating and suturing tissues, performing punctures of joints and vessels of the extremities.

Practical classes requirements: classrooms equipped with multimedia equipment, blackboards, simulation equipment, and subject guides for the discipline. Surgical instrument sets (general and

specialized) and suture material for demonstration. A simulator for practicing basic surgical skills with a tissue sample

Independent work of the student: writing a research paper.
Preparing a report on a completed lecture. Working with study materials.

Methods of evaluation of acquired knowledge and skills: discussion of reports, classroom questioning, tests.

Recommended reading:
1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.;
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Topic No.7 Topographic anatomy of the gluteal region and thigh. Femoral, obturator, and adductor canals. Hip joint, joint puncture

Duration of the practical class (in academic hours):	2

Purpose of the practical class:
1. study the topographic anatomy of the gluteal region, paying attention to external landmarks and boundaries, muscle and canal topography, vessel and nerve projections, fascia and cellular spaces, and age-related characteristics;
2. study the topographic anatomy of the knee region, paying attention to external landmarks and boundaries, muscle and canal topography, vessel and nerve projections, fascia and cellular spaces, and age-related characteristics;
3. study the topographic anatomy of the thigh region, paying attention to external landmarks and boundaries, muscle and canal topography, vessel and nerve projections, fascia and cellular spaces, and age-related characteristics;
4. study the topographic anatomy of the popliteal fossa, paying attention to boundaries, external landmarks, topography, and projections of vascular-nerve bundles, fascia, and cellular spaces;
5. provide topographic and anatomical justifications for the possible routes of spread of purulent and inflammatory processes and hematomas;
6. using topographic anatomical data, substantiate rational surgical approaches and techniques for purulent processes in the areas studied;
7. reinforce practical skills in separating and suturing tissues.

Practical classes requirements: classrooms equipped with multimedia equipment, blackboards, simulation equipment, and subject guides for the discipline. Surgical instrument sets (general and specialized) and suture material for demonstration. A simulator for practicing basic surgical skills with a tissue sample

Independent work of the student: writing a research paper.
Preparing a report on a completed lecture. Working with study materials.

Methods of evaluation of acquired knowledge and skills: discussion of reports, classroom questioning, tests.

Recommended reading:
1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.;
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5. Operative Surgery: Textbook on Manual Skills [Electronic resource] / edited by A. A. Vorobyov, I. I. Kagan. - Moscow: GEOTAR-Media, 2015. URL: http://www.studentlibrary.ru/

Topic No.8 Topographic anatomy of the popliteal fossa and calf. Knee and ankle joints, joint puncture

Duration of the practical class (in academic hours):	2

Purpose of the practical class:
1. study the topographic anatomy of the anterior and posterior regions of the leg in children, paying attention to the boundaries, external landmarks, topography, and projections of the vascular-nerve bundles, fascia, and cellular spaces;
2. provide a topographic-anatomical analysis of the pathways of suppurative and inflammatory processes and hematomas in these areas;
3. provide a topographic-anatomical justification for rational surgical approaches and techniques to vascular-nerve structures and for purulent processes in these areas;
4. reinforce practical skills in separating and suturing tissues.

Practical classes requirements: classrooms equipped with multimedia equipment, blackboards, simulation equipment, and subject guides for the discipline. Surgical instrument sets (general and specialized) and suture material for demonstration. A simulator for practicing basic surgical skills with a tissue sample

Independent work of the student: writing a research paper.
Preparing a report on a completed lecture. Working with study materials.

Methods of evaluation of acquired knowledge and skills: discussion of reports, classroom questioning, tests.

Recommended reading:
1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.;
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4. Nikolaev, A. V. Topographic Anatomy and Operative Surgery: Textbook [Electronic resource] / A. V. Nikolaev. - 3rd ed., corrected. and additional - Moscow: GEOTAR-Media, 2019. - 736 p. URL: http://www.studentlibrary.ru/

5. Operative Surgery: Textbook on Manual Skills [Electronic resource] / edited by A. A. Vorobyov, I. I. Kagan. - Moscow: GEOTAR-Media, 2015. URL: http://www.studentlibrary.ru/

Topic No.9 Topography of the foot.
Knowledge control: the lower limb

Duration of the practical class (in academic hours):	2

Purpose of the practical class:
1. study the topographic anatomy of the ankle joint and foot, paying attention to the boundaries, external landmarks, topography, and projections of the vascular-nerve bundles, fascia, and cellular spaces;
2. provide a topographic-anatomical analysis of the pathways of suppurative and inflammatory processes and hematomas in these areas;
3. provide a topographic-anatomical justification for rational surgical approaches and techniques to vascular-nerve structures and for purulent processes in these areas;
4. reinforce practical skills in separating and suturing tissues, performing punctures of joints and vessels of the extremities.

Practical classes requirements: classrooms equipped with multimedia equipment, blackboards, simulation equipment, and subject guides for the discipline. Surgical instrument sets (general and specialized) and suture material for demonstration. A simulator for practicing basic surgical skills with a tissue sample

Independent work of the student: writing a research paper.
Preparing a report on a completed lecture. Working with study materials.

Methods of evaluation of acquired knowledge and skills: discussion of reports, classroom questioning, tests.

Recommended reading:
1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.;
2. Kagan, I. I. Topographic anatomy and operative surgery: textbook [Electronic resource] / I. I. Kagan, S. V. Chemezov, etc. - 2nd ed., revised. - M.: GEOTAR-Media, 2022. - 672 p. URL: http://www.studentlibrary.ru;
3. Kalmin, O. V. Topography of organs in tables and diagrams: textbook. Manual [Electronic resource] / O. V. Kalmin. - St. Petersburg: SpetsLit, 2017. - 151 p. URL: http://books-up.ru;
4. Nikolaev, A. V. Topographic Anatomy and Operative Surgery: Textbook [Electronic resource] / A. V. Nikolaev. - 3rd ed., corrected. and additional - Moscow: GEOTAR-Media, 2019. - 736 p. URL: http://www.studentlibrary.ru/
5. Operative Surgery: Textbook on Manual Skills [Electronic resource] / edited by A. A. Vorobyov, I. I. Kagan. - Moscow: GEOTAR-Media, 2015. URL: http://www.studentlibrary.ru/

Topic No.10 Phlegmon and paronychia surgeries. Tendon suture. Nerve suture

Duration of the practical class (in academic hours):	2

Purpose of the practical class:
1. explore surgical options for phlegmons of the extremities and paronychias;
2. develop skills in tendon and nerve suturing;
3. reinforce practical skills in separating and suturing tissues.

Practical classes requirements: classrooms equipped with multimedia equipment, blackboards, simulation equipment, and subject guides for the discipline. Surgical instrument sets (general and

specialized) and suture material for demonstration. A simulator for practicing basic surgical skills with a tissue sample
Independent work of the student: writing a research paper. Preparing a report on a completed lecture. Working with study materials.
Methods of evaluation of acquired knowledge and skills: discussion of reports, classroom questioning, tests.
Recommended reading: 1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.; 2. Kagan, I. I. Topographic anatomy and operative surgery: textbook [Electronic resource] / I. I. Kagan, S. V. Chemezov, etc. - 2nd ed., revised. - M.: GEOTAR-Media, 2022. - 672 p. URL: http://www.studentlibrary.ru; 3. Kalmin, O. V. Topography of organs in tables and diagrams: textbook. Manual [Electronic resource] / O. V. Kalmin. - St. Petersburg: SpetsLit, 2017. - 151 p. URL: http://books-up.ru; 4. Nikolaev, A. V. Topographic Anatomy and Operative Surgery: Textbook [Electronic resource] / A. V. Nikolaev. - 3rd ed., corrected. and additional - Moscow: GEOTAR-Media, 2019. - 736 p. URL: http://www.studentlibrary.ru/ 5. Operative Surgery: Textbook on Manual Skills [Electronic resource] / edited by A. A. Vorobyov, I. I. Kagan. - Moscow: GEOTAR-Media, 2015. URL: http://www.studentlibrary.ru/
Topic No.11 Surgical accesses to vessels and nerves of limbs. Ligation of the great vessels; types, rules and techniques. Vessel suture. Venesection

Duration of the practical class (in academic hours):	2

Purpose of the practical class: 1. study approaches to vessels and nerves of the extremities; 2. develop vascular suturing skills; 3. reinforce practical skills in separating and suturing tissues.
Practical classes requirements: classrooms equipped with multimedia equipment, blackboards, simulation equipment, and subject guides for the discipline. Surgical instrument sets (general and specialized) and suture material for demonstration. A simulator for practicing basic surgical skills with a tissue sample
Independent work of the student: writing a research paper. Preparing a report on a completed lecture. Working with study materials.
Methods of evaluation of acquired knowledge and skills: discussion of reports, classroom questioning, tests.
Recommended reading: 1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.; 2. Kagan, I. I. Topographic anatomy and operative surgery: textbook [Electronic resource] / I. I. Kagan, S. V. Chemezov, etc. - 2nd ed., revised. - M.: GEOTAR-Media, 2022. - 672 p. URL: http://www.studentlibrary.ru; 3. Kalmin, O. V. Topography of organs in tables and diagrams: textbook. Manual [Electronic resource] / O. V. Kalmin. - St. Petersburg: SpetsLit, 2017. - 151 p. URL: http://books-up.ru;

4. Nikolaev, A. V. Topographic Anatomy and Operative Surgery: Textbook [Electronic resource] / A. V. Nikolaev. - 3rd ed., corrected. and additional - Moscow: GEOTAR-Media, 2019. - 736 p. URL: http://www.studentlibrary.ru/
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Topic No.12 Amputations: classification, debridement of soft tissues, bone and periosteum, vessels and nerves in amputation surgery. Pirogow's amputation at the ankle, Gritti-Shimanovsky (Gritti-Stokes) amputation at the knee. Osteosynthesis

Duration of the practical class (in academic hours):	2

Purpose of the practical class:
1. consolidate knowledge acquired on the topographic anatomy of the hip, knee, and ankle joints, and their age-related characteristics;
2. provide a topographic and anatomical justification for puncture points of the knee and ankle joints;
3. master the technique of puncture of lower extremity joints;
4. provide a topographic and anatomical justification for amputation and disarticulation methods in the lower extremity.

Practical classes requirements: classrooms equipped with multimedia equipment, blackboards, simulation equipment, and subject guides for the discipline. Surgical instrument sets (general and specialized) and suture material for demonstration. A simulator for practicing basic surgical skills with a tissue sample

Independent work of the student: writing a research paper.
Preparing a report on a completed lecture. Working with study materials.

Methods of evaluation of acquired knowledge and skills: discussion of reports, classroom questioning, tests.

Recommended reading:
1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.;
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Topic No.13 Topographic anatomy of the calvaria: frontal-parietal-occipital, temporal, and mastoid areas. Blood supply of the soft tissues of the skull surface. Blood supply of the brain. Dura mater sinuses. Craniocerebral topography. Primary surgical debridement of skull wounds. Craniotomy

Duration of the practical class (in academic hours):	2

Purpose of the practical class:
1. study the topographic anatomy of the fronto-parieto-occipital, temporal, and mastoid regions, focusing on their layered structure, age-related characteristics, skeletal base, and the course of blood vessels and nerves;
2. examine the topography of the membranes and the blood supply to the brain, as well as the venous levels of the cerebral cortex;
3. provide a topographic and anatomical explanation of the routes of spread of purulent processes and methods of their surgical treatment;
4. discuss options for surgical treatment of cranial wounds and craniotomy.

Practical classes requirements: classrooms equipped with multimedia equipment, blackboards, simulation equipment, and subject guides for the discipline. Surgical instrument sets (general and specialized) and suture material for demonstration. A simulator for practicing basic surgical skills with a tissue sample

Independent work of the student: writing a research paper.
Preparing a report on a completed lecture. Working with study materials.

Methods of evaluation of acquired knowledge and skills: discussion of reports, classroom questioning, tests.

Recommended reading:
1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.;
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Topic No.14 Skull base topography. Topographic anatomy of the face: buccal, parotideomasseteric, deep facial regions. Topography of facial and trigeminal nerves. Primary surgical debridement of facial wounds. Incisions in phlegmons of maxillofacial localization

Duration of the practical class (in academic hours):	2

Purpose of the practical class:
1. study the topographic anatomy of the superficial areas of the lateral face (buccal, parotid-masticatory) and its age-related characteristics;
2. study the topographic anatomy of the deep area of the lateral face and its age-related characteristics;
3. analyze congenital malformations of this region and methods of their surgical correction;
4. provide a topographic and anatomical justification for the spread of purulent processes in these areas;
5. discuss options for primary surgical treatment of facial wounds;
6. study incisions for suppurative diseases of the maxillofacial region.

Practical classes requirements: classrooms equipped with multimedia equipment, blackboards, simulation equipment, and subject guides for the discipline. Surgical instrument sets (general and

specialized) and suture material for demonstration. A simulator for practicing basic surgical skills with a tissue sample

Independent work of the student: writing a research paper.
Preparing a report on a completed lecture. Working with study materials.

Methods of evaluation of acquired knowledge and skills: discussion of reports, classroom questioning, tests.

Recommended reading:
1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.;
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Topic No.15 Topographic anatomy of the neck: triangles, fascia, and tissue planes (potential spaces). Topography of suprahyoid region, carotid triangle, lateral triangle of the neck, neurovasculature of upper extremity, pre- and interscalene spaces. Topography of the neck organs: thyroid and parathyroid glands, larynx, trachea, pharynx, esophagus. surgical accesses and ligation of carotid artery. Incisions in phlegmons of neck. Vagosympathetic block according to Vishnevsky. Puncture and catheterization of the subclavian vein. Tracheostomy. Thyroidectomy

Duration of the practical class (in academic hours):	3

Purpose of the practical class:
1. study the topographic anatomy of the neck (division into triangles), fascia, and cellular spaces;
2. study the topographic anatomy of the suprahyoid region, carotid triangle, lateral triangle of the neck, vascular-nerve bundle of the upper limb, prescalene and interscalene spaces;
3. study the topography of the neck organs: thyroid and parathyroid glands, larynx, trachea, pharynx, esophagus;
4. provide a topographic-anatomical justification for the routes of spread of purulent processes in these areas;
5. discuss approaches and ligation of the carotid artery;
6. discuss incisions for suppurative diseases of the neck;
7. study the implementation of the Vishnevsky vagosympathetic block;
8. analyze tracheostomy options;
9. study methods of thyroid gland resection.

Practical classes requirements: classrooms equipped with multimedia equipment, blackboards, simulation equipment, and subject guides for the discipline. Surgical instrument sets (general and specialized) and suture material for demonstration. A simulator for practicing basic surgical skills with a tissue sample

Independent work of the student: writing a research paper.
Preparing a report on a completed lecture. Working with study materials.

Methods of evaluation of acquired knowledge and skills: discussion of reports, classroom questioning, tests.

Recommended reading:
1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.;
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Topic No.16 Topographic anatomy of the thoracic wall: layers, tissue planes (potential spaces), blood vessels, nerves. Intercostal space topography. Internal thoracic artery. Breast topography. Diaphragm: openings, hiatuses, blood vessels, nerves. Incisions in purulent mastitis. Puncture of the pleura and pericardium, Thoracocentesis, drainage of the pleural cavity. Thoracotomy: types, techniques

Duration of the practical class (in academic hours):	3

Purpose of the practical class:
1. study the topographic anatomy of the chest wall (layers, cellular spaces, vessels, nerves), the topography of the intercostal space, and the course of the internal mammary artery;
2. study the topographic anatomy of the mammary gland and incisions for purulent mastitis;
3. study the diaphragm (openings, fissures, vessels, nerves);
4. analyze pleural and pericardial puncture;
5. analyze thoracentesis and pleural drainage;
6. thoracotomy: types and technique.

Practical classes requirements: classrooms equipped with multimedia equipment, blackboards, simulation equipment, and subject guides for the discipline. Surgical instrument sets (general and specialized) and suture material for demonstration. A simulator for practicing basic surgical skills with a tissue sample

Independent work of the student: writing a research paper.
Preparing a report on a completed lecture. Working with study materials.

Methods of evaluation of acquired knowledge and skills: discussion of reports, classroom questioning, tests.

Recommended reading:
1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.;
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Topic No.17 Thoracic cavity: topography of the pleura and lungs, heart and pericardium, esophagus. Blood vessels and nerves of the anterior and posterior mediastinum. Thoracic duct. Pneumothorax: types, surgical treatment. Heart and lung suture. Surgical interventions for purulent diseases of the lungs and pleura

Duration of the practical class (in academic hours):	3

Purpose of the practical class:
1. study the topographic anatomy of the thoracic cavity (the topography of the pleura and lungs, the heart and pericardium, and the esophagus);
2. study the topographic anatomy of the vessels and nerves of the anterior and posterior mediastinum, and the thoracic duct;
3. examine pneumothorax, its types, surgical treatment, and cardiac and lung suturing;
4. examine surgical interventions for suppurative diseases of the lungs and pleura.

Practical classes requirements: classrooms equipped with multimedia equipment, blackboards, simulation equipment, and subject guides for the discipline. Surgical instrument sets (general and specialized) and suture material for demonstration. A simulator for practicing basic surgical skills with a tissue sample

Independent work of the student: writing a research paper.
Preparing a report on a completed lecture. Working with study materials.

Methods of evaluation of acquired knowledge and skills: discussion of reports, classroom questioning, tests.

Recommended reading:
1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.;
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Topic No.18 Topographic anatomy of the anterior-lateral wall of the abdomen. Topography of the inguinal and femoral canals. Surgical reductions of inguinal (according to Martynov, Bobrov, Girard-Spasokukotsky, Kimbarovsky, Bassini), femoral (according to Bassini, Ruji-Parlavecchio), umbilical (according to Lexer, Mayo, Sapezhko) hernias and hernias of the white line of the abdomen. Concept of non-tension methods of hernia reduction. Laparocentesis. Laparotomy: types, comparison

Duration of the practical class (in academic hours):	3

Purpose of the practical class:
1. study the topographic anatomy of the anterolateral abdominal wall;
2. during the discussion, outline the concepts of the inguinal and femoral canals;
3. review surgeries for inguinal (Martynov, Bobrov, Girard-Spasokukotsky, Kimbarovsky, Bassini), femoral (Bassini, Ruggi-Parlavecchio), umbilical (Lexer, Mayo, Sapezhko), and linea alba hernias; tension-free hernia repair techniques;
4. review laparocentesis and laparotomy (types, comparative assessment).

Practical classes requirements: classrooms equipped with multimedia equipment, blackboards, simulation equipment, and subject guides for the discipline. Surgical instrument sets (general and specialized) and suture material for demonstration. A simulator for practicing basic surgical skills with a tissue sample

Independent work of the student: writing a research paper.
Preparing a report on a completed lecture. Working with study materials.

Methods of evaluation of acquired knowledge and skills: discussion of reports, classroom questioning, tests.

Recommended reading:
1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.;
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5. Operative Surgery: Textbook on Manual Skills [Electronic resource] / edited by A. A. Vorobyov, I. I. Kagan. - Moscow: GEOTAR-Media, 2015. URL: http://www.studentlibrary.ru/

Topic No.19 Topographic anatomy of the abdominal cavity: topography of organs, peritoneum and its derivatives in the greater and lesser peritoneal sacs. Arterial and venous circulation of the abdominal organs. Innervation and lymph drainage

Duration of the practical class (in academic hours):	3

Purpose of the practical class:
1. study the topographic anatomy of the abdominal cavity (the topography of the organs, peritoneum, and its derivatives in the upper and lower abdominal cavity);
2. study the characteristics of arterial and venous circulation of the organs;
3. analyze innervation and lymph flow.

Practical classes requirements: classrooms equipped with multimedia equipment, blackboards, simulation equipment, and subject guides for the discipline. Surgical instrument sets (general and specialized) and suture material for demonstration. A simulator for practicing basic surgical skills with a tissue sample

Independent work of the student: writing a research paper.
Preparing a report on a completed lecture. Working with study materials.

Methods of evaluation of acquired knowledge and skills: discussion of reports, classroom questioning, tests.

Recommended reading:
1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.;
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Topic No.20 Abdominal surgery. Intestinal anastomoses: types, assessment. Types and techniques of intestinal suture. Small and large intestine wound suturing. Intestinal resection and anastomosis

Duration of the practical class (in academic hours):	3

Purpose of the practical class:
1. study abdominal organ surgeries;
2. study intestinal anastomoses (types, evaluation);
3. types and techniques of intestinal sutures, suturing wounds of the small and large intestine;
4. discuss intestinal resection with anastomosis.

Practical classes requirements: classrooms equipped with multimedia equipment, blackboards, simulation equipment, and subject guides for the discipline. Surgical instrument sets (general and specialized) and suture material for demonstration. A simulator for practicing basic surgical skills with a tissue sample

Independent work of the student: writing a research paper.
Preparing a report on a completed lecture. Working with study materials.

Methods of evaluation of acquired knowledge and skills: discussion of reports, classroom questioning, tests.

Recommended reading:
1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.;
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Topic No.21 Abdominal surgery: gastrostomy. Perforated gastric ulcer suturing. Gastric resection. Surgeries facilitating emptying of the stomach. Liver wounds suturing. Types of liver resection. Splenectomy. Appendectomy. Colostomy. Artificial anus	
Duration of the practical class (in academic hours):	4
Purpose of the practical class: 1. consolidate knowledge acquired on abdominal organ surgeries; 2. explore gastric surgeries (gastrostomy, suturing of perforated gastric ulcers, gastric resection, gastric drainage surgeries); 3. liver wound suturing, types of liver resection, splenectomy, and appendectomy; 4. discuss colostomy placement (anal constriction).	
Practical classes requirements: classrooms equipped with multimedia equipment, blackboards, simulation equipment, and subject guides for the discipline. Surgical instrument sets (general and specialized) and suture material for demonstration. A simulator for practicing basic surgical skills with a tissue sample	
Independent work of the student: writing a research paper. Preparing a report on a completed lecture. Working with study materials.	
Methods of evaluation of acquired knowledge and skills: discussion of reports, classroom questioning, tests.	
Recommended reading: 1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.; 2. Kagan, I. I. Topographic anatomy and operative surgery: textbook [Electronic resource] / I. I. Kagan, S. V. Chemezov, etc. - 2nd ed., revised. - M.: GEOTAR-Media, 2022. - 672 p. URL: http://www.studentlibrary.ru; 3. Kalmin, O. V. Topography of organs in tables and diagrams: textbook. Manual [Electronic resource] / O. V. Kalmin. - St. Petersburg: SpetsLit, 2017. - 151 p. URL: http://books-up.ru; 4. Nikolaev, A. V. Topographic Anatomy and Operative Surgery: Textbook [Electronic resource] / A. V. Nikolaev. - 3rd ed., corrected. and additional - Moscow: GEOTAR-Media, 2019. - 736 p. URL: http://www.studentlibrary.ru/ 5. Operative Surgery: Textbook on Manual Skills [Electronic resource] / edited by A. A. Vorobyov, I. I. Kagan. - Moscow: GEOTAR-Media, 2015. URL: http://www.studentlibrary.ru/	
Topic No.22 Topographic anatomy of the lumbar region and retroperitoneal space: facies and tissue planes (potential spaces), Topography of the kidneys and ureters, topography of blood vessels and nerves, Thoracic duct. Paranephral block. Nephrectomy. Ureter suture. Topographic anatomy of the lesser pelvis and perineum: levels, fascia and tissue planes (potential spaces) of the pelvis. Male and female pelvic and perineal organ topography. Pelvic blood vessels and nerves. Catheterization and puncture of the bladder, suprapubic cystostomy. Surgical treatment of hydrocele and cryptorchidism. Surgical treatment of ectopic pregnancy. Surgical treatment of hemorrhoids	
Duration of the practical class (in academic hours):	3
Purpose of the practical class: 1. study the topographic anatomy of the lumbar region and retroperitoneal space (fascia and cellular spaces, topography of the kidneys and ureters, topography of the vessels and nerves, and the thoracic duct); 2. review surgical treatment methods (perinephric block, nephrectomy, ureteral suturing);	

3. study the topographic anatomy of the pelvis and perineum (pelvic floors, fascia, and cellular spaces); 4. study the topography of the organs of the male and female pelvis and perineum (pelvic vessels and nerves); 5. review surgeries on the pelvic organs (catheterization, puncture, and high incision of the bladder, surgeries for hydrocele and cryptorchidism, surgery for ectopic pregnancy, and surgeries for hemorrhoids).
Practical classes requirements: classrooms equipped with multimedia equipment, blackboards, simulation equipment, and subject guides for the discipline. Surgical instrument sets (general and specialized) and suture material for demonstration. A simulator for practicing basic surgical skills with a tissue sample
Independent work of the student: writing a research paper. Preparing a report on a completed lecture. Working with study materials.
Methods of evaluation of acquired knowledge and skills: discussion of reports, classroom questioning, tests.
Recommended reading: 1. Ostroverkhov, G.E. Operative surgery and topographic anatomy: textbook. for medical students. universities/G.E. Ostroverkhov, Yu.M. Bomash, D.N. Lubotsky.-Ed. 5th, rev.-M. : Medical Information Agency, 2013.-736 p.; 2. Kagan, I. I. Topographic anatomy and operative surgery: textbook [Electronic resource] / I. I. Kagan, S. V. Chemezov, etc. - 2nd ed., revised. - M.: GEOTAR-Media, 2022. - 672 p. URL: http://www.studentlibrary.ru; 3. Kalmin, O. V. Topography of organs in tables and diagrams: textbook. Manual [Electronic resource] / O. V. Kalmin. - St. Petersburg: SpetsLit, 2017. - 151 p. URL: http://books-up.ru; 4. Nikolaev, A. V. Topographic Anatomy and Operative Surgery: Textbook [Electronic resource] / A. V. Nikolaev. - 3rd ed., corrected. and additional - Moscow: GEOTAR-Media, 2019. - 736 p. URL: http://www.studentlibrary.ru/ 5. Operative Surgery: Textbook on Manual Skills [Electronic resource] / edited by A. A. Vorobyov, I. I. Kagan. - Moscow: GEOTAR-Media, 2015. URL: http://www.studentlibrary.ru/

4. GUIDELINES FOR CONTINOUS AND INTERIM ASSESSMENT

Table 3. Guidelines for Conducting Continuous and Interim Assessment during **Б1.О.11 Topographic anatomy and operative surgery** Course

Type of assessment	Assessment format
Continuous assessment	- conducting and evaluating oral or written quizzes during lectures and practical classes; - assessment and evaluation of completion and results of assignments given during practical classes; - assess and evaluate completion and results of individual assignments and exam tasks given during practical classes; - assessment and evaluation of lecture notes quality.
Interim assessment	is conducted in exam format (answering interview questions and working with case studies); it allows to assess the development of students' competencies correlating with types of professional activity.

5 ASPECTS OF THE IMPLEMENTATION OF THE COURSE FOR STUDENTS WITH DISABILITIES AND SPECIAL NEEDS

5.1. Availability of accessible environment

For students with disabilities and special needs, if a written application is submitted, lectures and practical classes are carried out taking into account health limitations, individual capabilities and medical status (hereinafter referred to as individual characteristics) of the student. Compliance with the following general requirements is ensured: teaching aids for collective and individual use are provided, required technical assistance is provided by an assistant; buildings and premises where lectures and practical classes are taking place meet accessibility requirements, other arrangements lack of which makes it impossible or difficult to master the discipline are made.

5.2. Compliance with general requirements

When lectures and practical classes are carried out at the written application of the student, the following general requirements are met: lectures and practical classes for students with disabilities and special needs take place at the same location as for students who do not have disabilities, if this does not cause difficulties for students; an assistant (assistants), who provide(s) students with the necessary technical assistance taking into account individual characteristics of the student, is (are) provided; necessary teaching aids are provided, taking into account individual characteristics of the student.

5.3. Availability of the internal policies and procedures of FSBEI HE PSMU of the Ministry of Health of Russia to students with disabilities in a form accessible to them.

All internal policies and procedures of FSBEI HE PSMU of the Ministry of Health of Russia concerning the discipline (module) are made available to students with disabilities in a form accessible to them.

5.4. Increase in the duration of interim assessment of students with disabilities and special needs in relation to the established duration

Format of the interim assessment of academic performance within the scope of the discipline for students with disabilities and special needs is selected taking into account individual characteristics (orally, by writing on paper, by typing on a computer, as a test, etc.). The duration of the interim assessment in relation to the established duration is increased at the written application of the student with disabilities. Time limit for the student's preparation for the test is increased by at least 0.5 hours

6. STAFFING REQUIREMENTS OF THE DISCIPLINE

Academic teaching personnel that ensure the implementation of the discipline education process meet the requirements of the Federal State Educational Standard of Higher Education for the 31.05.01 General Medicine specialty; list of the aforementioned personnel is available on the website of the educational organization.

