MINISTRY OF HEALTH OF THE REPUBLIC OF BELARUS
Educational Institution
«BELARUSIAN STATE MEDICAL UNIVERSITY»

APPROVED
by Rector of the Educational Institution «Belarusian State Medical University»
_____ S.P.Rubnikovich
01.12.2025
Reg.# UD-0911-01-55/2526/edu.

TOPOGRAPHIC ANATOMY AND OPERATIVE SURGERY

Curriculum of the educational institution in the academic discipline for the specialty

7-07-0911-01 «General Medicine»

2025

Curriculum is based on the educational program «Topographic Anatomy and Operative Surgery», approved 01.12.2025, registration # УД-0911-01-55/2526/уч.; on the educational plan in the specialty 7-07-0911-01 «General Medicine», approved 16.04.2025, registration # 7-07-0911-01/2526/mf.

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RECOMMENDED FOR APPROVAL:

by the Department of Operative Surgery and Topographic Anatomy of the Educational Institution «Belarusian State Medical University»
(protocol # 2 of 08.09.2025);

by the Scientific and Methodological Council of the Educational Institution «Belarusian State Medical University»
(protocol # 3 of 19.11.2025)

EXPLANATORY NOTE

«Topographic Anatomy and Operative Surgery» is an academic discipline of the Surgical Module # 1, containing systematized scientific knowledge about the layer-by-layer structure of regions of the human body, the topography of organs, the principles and techniques of surgical procedures.

The aim of the academic discipline «Topographic Anatomy and Operative Surgery» is the formation of specialized competence, which is based on knowledge of human topographic anatomy, acquiring and the development of practical skills to carry out basic medical and surgical procedures.

The objectives of the academic discipline «Topographic Anatomy and Operative Surgery» are for the development students' scientific knowledge about:

layer-by-layer structure of areas of the human body and topography of organs and tissues;

topographic-anatomical methods and surgical techniques;

skills and abilities necessary to provide specialized assistance in case of accidents, injuries, bleeding, poisoning and other conditions that threaten human life and health, performing surgical procedures.

Relations to other educational disciplines

The knowledge, abilities and skills acquired in the study of the academic discipline «Topographic Anatomy and Operative Surgery» are necessary for the successful study of the following academic disciplines: «Surgical Diseases», «Obstetrics and Gynecology», «Traumatology and Orthopedics», «Neurology and Neurosurgery», «Oncology», «Urology», «Otorhinolaryngology and Dentistry», «Ophthalmology», «Anesthesiology and Reanimatology».

A student who has mastered the educational material of the academic discipline should have the following specialized competence: use knowledge about the human body structure, topography, functions of organs and systems taking into account the age aspect while performing basic surgical manipulations.

As a result of studying the academic discipline «Topographic Anatomy and Operative Surgery» the student should

know:

anatomical boundaries and topographical landmarks of parts and regions of the human body;

topographic anatomy and layered structure of body regions;

topographic anatomy of internal organs;

topographic anatomy and projection of large vessels and nerves on the surface of the body surface;

purpose and use of surgical instruments and suture materials;

rationale behind topographic anatomy and principles of carrying out typical surgical procedures;

errors and complications caused by the peculiarities of topographic anatomical structures during surgeries;

legal and ethical rules for performing surgical operations;

principles of medical ethics and deontology;

be able to:

identify boundaries and topographical landmarks of parts and regions of the human body and the projection of large vessels and nerves on the body surface;

determine the type and purpose of surgical instruments, suture materials and compile set of instruments for typical operations;

demonstrate on a dummy how to work with surgical instruments and suture materials;

determine the locations of typical incisions for surgical access to organs, vessels and nerves;

perform operations on models, dummies and (or) cadaveric material: conicotomy, tracheostomy, catheterization of vessels, ligation of vessels, laparotomy, revision of the abdominal organs, hernia repair and plastic surgery of the hernial orifice, application of interintestinal anastomosis, suturing of the surgical wound, application of a vascular suture, application of a vascular sutures, application of a tendon sutures;

master:

suture techniques and tying of surgical knots (on models, dummies and (or) cadaver material);

techniques for determining the pulse rates in arteries viable to palpation;

technique of applying a hemostatic clamp and ligation of the vessels (on a dummy).

Total number of hours for the study of the discipline is 196 academic hours, of which 101 classroom hours and 95 hours of student independent work. Classroom hours according to the types of studies: lectures – 21 hours (including 3 hours of supervised student independent work (SSIW)), practical classes – 80 hours.

Form of higher education – full-time.

Intermediate assessment is carried out according to the syllabus of the specialty in the form of a credit (6^{th} semester) and examination (7^{th} semester).

ALLOCATION OF ACADEMIC TIME ACCORDING TO SEMESTERS OF STUDY

Code, name of the specialty	Semester	Total number of academic hours	Number of academic hours					Form of intermediate assessment
			Number of classroom hours	including			Out-of-class self-studies	
				lectures		practicals		
				class lectures	SSIW			
7-07-0911-01	6	98	52	9	3	40	46	Credit
«General Medicine»	7	98	49	9	-	40	49	Examination
Total hours		**196**	**101**	**18**	**3**	**80**	**95**	

THEMATIC PLAN

Section (topic) name	Number of class hours	
	lectures (incl. SSIW)	practical
1. Introduction into the academic discipline «Topographic Anatomy and Operative Surgery»	**1,5**	**5**
1.1. Aims and objectives of topographic anatomy and operative surgery. Surgical operations, surgical instruments	1,5	2,5
1.2. Disconnecting and connecting tissues. Suture material. Surgical sutures and knots		2,5
2. Topographic anatomy and operative surgery of the extremities	**3**	**10**
2.1. Topographic anatomy of the lower limb: gluteal region, thigh and knee regions	1,5	2,5
2.2. Topographic anatomy of the lower leg and foot regions. Operative surgery of the lower limb		2,5
2.3. Topographic anatomy of the axillary region and shoulder regions	1,5	2,5
2.4. Topographic anatomy of the elbow, forearm and hand regions. Operative surgery of the upper limb		2,5
3. Practicing practical skills in surgical departments of healthcare institutions	**-**	**7,5**
4. Topographic anatomy and operative surgery of the head	**3**	**5**
4.1. Topographic anatomy and operative surgery of the cranial part of the head	1,5	2,5
4.2. Topographic anatomy and operative surgery of the facial part of the head	1,5	2,5
5. Topographic anatomy and operative surgery of the neck	**1,5**	**5**
5.1. Topographic anatomy of the neck	-	2,5
5.2. Topographic anatomy and operative surgery of the neck	1,5	2,5
6. Practicing practical skills in the training operating room	**-**	**10**
7. Topographic anatomy and operative surgery of the thorax and mediastinum	**3**	**7,5**
7.1. Topographic anatomy and operative surgery of the thorax	1,5	2,5
7.2. Topographic anatomy and operative surgery of the mediastinal organs	1,5	5
8. Topographic anatomy and operative surgery of the abdomen	**9**	**30**
8.1. Topographic anatomy of the anterolateral abdominal	1,5	5

Section (topic) name	Number of class hours	
	lectures (incl. SSIW)	practical
wall. Surgical anatomy of the external abdominal hernias		
8.2. Operative surgery of abdominal hernias. Topographic anatomy of the peritoneum and abdominal cavity	1,5	5
8.3. Intestinal sutures. Topographic anatomy and operative surgery of the stomach and small intestine	1,5	5
8.4. Topographic anatomy and operative surgery of the liver, gallbladder, bile ducts, pancreas and spleen	1,5	5
8.5. Topographic anatomy and operative surgery of the colon	1,5	5
8.6. Topographic anatomy and operative surgery of the lumbar region, retroperitoneal space, pelvic organs and perineum	1,5	5
Total hours	**21**	**80**

CONTENT OF THE EDUCATIONAL DISCIPLINE

1. Introduction into the academic discipline «Topographic Anatomy and Operative Surgery»

1.1. Aims and objectives of topographic anatomy and operative surgery. Surgical operations, surgical instruments

The aim and objectives of the topographic anatomy and operative surgery as a scientifically practical academic discipline, its place in the higher medical educational system.

Medical ethics and deontology. The «doctor-patient» relationships system.

Basic concepts and terminologies of topographic anatomy: topography (holotopy, skeletotopy, syntopy), parts and regions of the body, plains, lines, position, layer, projection. Fascial receptacles (fascial bed, fascial sheath, interfacial cellular space), neurovascular bundle, collateral blood supply. Clinical, projection, relief anatomy. Individual variability, norm, variants of norm, anomalies, congenital malformations, deformities. Research methods in topographic anatomy and operative surgery.

Basic concepts and terminology in operative surgery (surgical operation, surgical instruments, surgical suture materials, general surgical techniques).

Classification of surgical operations. Requirements for the operation. Basic surgical actions (surgical access, surgical manipulations, completion of surgery). Typical (elementary) surgical techniques. The concept of microsurgical, endoscopic, minimally invasive, endovascular and plastic surgeries.

Principles of vascular surgeries (puncture, venesection, vascular catheterization, vascular suture, balloon dilatation, stenting, bypass surgery, prosthetics, thrombectomy, endarterectomy, rotary atherectomy).

Fundamentals of surgical transplantology. The concept of artificial organs and endoprosthetics.

Classification of surgical instruments, rules for their use. Regulatory legal acts (clinical protocols, standards, instructions, recommendations of the Ministry of Health of the Republic of Belarus).

1.2. Disconnecting and connecting tissues. Suture material. Surgical sutures and knots

Suture material: classification, types; requirements for suture materials (biocompatibility, biodegradation ability, atraumatic, strength, lack of capillarity and wicking, sterility, manipulative properties, biological and immunological characteristics); packing and labelling.

Surgical sutures: simple interrupted, mattress (U-shaped (horizontal) and vertical (by Donati)). Continuous sutures: simple continuous, mattress, blanket suture (by Multanovsky), screw-in (by Schmieden); purse-string and Z–shaped, intradermal (cosmetic) by Halsted.

Removal of skin sutures.

Surgical knots: simple (granny), square, surgical. Manual and instrumental knot tying techniques.

2. Topographic anatomy and operative surgery of the extremities

2.1. Topographic anatomy of the lower limb: gluteal region, thigh and knee regions

Lower limb boundaries and external landmarks.

Topographic anatomy of the gluteal region. Topographic anatomy of the vascular-nerve bundles and cellular spaces of the gluteal region. Hip joint.

Congenital hip dislocation.

Topographic anatomy of the anterior thigh region: fascial compartments, muscular and vascular lacunae, femoral triangle, femoral artery, vein and nerve, femoral canal, obturator canal and adductor canal.

Topographic anatomy of the posterior thigh region.

Displacement of bone fragments in fractures at the level of the upper, middle and lower thirds of the femoral shaft.

Topographic anatomy of the anterior knee region. Knee joint.

Topographic anatomy of the posterior knee region.

2.2. Topographic anatomy of the lower leg and foot regions. Operative surgery of the lower limb

Topographic anatomy of the anterior leg region, the posterior leg region: boundaries, external landmarks, fascial compartments, muscles, canals and topography of the neurovascular bundles.

Topographic anatomy of the ankle regions of the foot (anterior and posterior ankle regions, medial and lateral retromalleolar regions).

Ankle joint.

Regions of the foot: external landmarks and boundaries.

Topographic anatomy of the dorsal region of the foot.

Topographic anatomy of the plantar region of the foot.

Topographic anatomy of the dorsal and plantar regions of the toes.

Vessels and nerves of the foot.

Projection points for determining the pulse of the femoral, popliteal, posterior tibial and dorsalis pedis arteries.

Autovenous femoral-popliteal bypass with reversal of the great saphenous vein and using the in situ technique.

Principles of bone surgery: skeletal traction, sequestrectomy, bone grafting, resection, osteotomy, osteosynthesis, prosthetics.

Amputations: indications, types, classification.

Femoral amputation technique.

Concept of limb replantation.

Principles of surgery for varicose veins of the lower extremities (sclerotherapy, endovenous laser and radiofrequency coagulation, stripping (Babcock phlebectomy), Troyanov-Trendelenburg procedure, perforating vein surgery, combined phlebectomy).

2.3. Topographic anatomy of the axillary region and shoulder regions

Topographic anatomy of the axillary region (borders, walls, vessels, nerves, lymph nodes).

Relationships of the axillary tissue with other cellular spaces.

Borders of the upper limb regions, external landmarks.

Topographic anatomy of the deltoid region. Topographic anatomy of the shoulder joint.

Collateral circulation in the shoulder girdle.

Topographic anatomy of the shoulder regions: fascial compartments, muscles, topography of vessels and nerves.

Position of humeral fragments in fractures at the level of the upper, middle and lower thirds of the diaphysis.

Projection of the brachial artery.

2.4. Topographic anatomy of the elbow, forearm and hand regions. Operative surgery of the upper limb

Topographic anatomy of the anterior and posterior elbow regions: boundaries, external landmarks, layered structure, vessels, nerves, neurovascular bundles, fascia, fascial beds and muscles.

Topographic anatomy of the elbow joint.

Collateral circulation in the elbow region.

Topographic anatomy of the forearm regions: boundaries, external landmarks, layered structure, vessels, nerves, neurovascular bundles, fascia, fascial beds and muscles.

Topographic anatomy of the anterior and posterior forearm regions.

Topographic anatomy of the wrist joint.

Topographic anatomy of the anterior and posterior wrist regions. Carpal tunnels and their contents.

Topographic anatomy of the palmar region of the hand: thenar eminence, hypothenar eminence and palmar fossa.

Topographic anatomy of the dorsal hand.

Fascial beds and cellular spaces of the hand.

Superficial and deep palmar arterial arches, nerves of the hand. Canavell's exclusion zone.

Topographic anatomy of the palmar and dorsal areas of the fingers. Synovial and fibrous tendon sheaths.

Projection points for determining pulse: axillary, brachial and radial arteries.

Topographic and anatomical rationale, indications and surgical principles: approaches to the axillary and brachial arteries, internal iliac and femoral arteries.

Techniques for performing venipuncture and venesection.

Felon and phlegmon of the hand: types, anesthesia, incisions.

Stages of surgery for injuries to large vessels. Carrel's vascular suture, Morozova's modification, parachute suture.

Nerve suture.

Cuneo's tendon suture.

3. Practicing practical skills in surgical departments of healthcare institutions

Analysis of inpatient medical records, including a study of the rules for completing surgical protocols for various specialized pathologies. Description of the local vascular status of the arteries of the extremities in the inpatient medical record.

Topographic and anatomical rationale for describing the local status.

Cutaneous and intradermal sutures. Rules for suture removal.

Methods and techniques for stopping arterial bleeding.

Topographic and anatomical rationale for pulse detection sites.

Topographic and anatomical rationale for using a tourniquet to stop arterial bleeding and the duration of its use.

Indication of sites suitable and unsuitable for tourniquet application and an explanation of the reason for unsuitability.

Holo- and skeletotopy of the internal organs of the thoracic cavity when visualized by radiographic methods (radiographs).

Demonstration of bone growth zones, fracture lines and fragment displacement on radiographs.

Topographic and anatomical rationale for choosing the location for artificial fistula formation. Determining the type of fistula (tracheostomy, gastrostomy, colostomy, ileostomy, cystostomy) on a mannequin.

Topographic and anatomical substantiation of points for pleural and pericardial puncture and drainage.

Locating points on the human body for catheterization of the subclavian vein, jugular veins, femoral artery and vein.

Analysis of inpatient medical records with a study of the rules for completing surgical protocols.

Manual (hand and instrumental) techniques for tying simple, square and surgical knots.

Purse-string and Z-shaped suture techniques. Purpose of use.

Determining the type, purpose and other characteristics of suture material based on packaging notes. Selecting suture material for suturing skin, intestines, vessels and nerves. Topographic and anatomical justification for the use of triple-

lumen catheters to stop bleeding from esophageal and gastric varices (Blackmore catheter). Procedure for insertion, cuff inflation and deflation, as well as catheter fixation and removal. Topographic and anatomical rules affecting the duration of catheter use.

Clinical protocols «Diagnosis and treatment of patients (adults and children) with gunshot wounds to the chest», «Diagnosis and treatment of patients (adults and children) with gunshot wounds to the abdomen»: Resolution of the Ministry of Health of the Republic of Belarus dated 09.08.2021 # 94.

Clinical protocol «Diagnosis and treatment of patients with chronic venous diseases (adults)»: Resolution of the Ministry of Health of the Republic of Belarus dated 21.06.2022 # 55.

Clinical protocol «Diagnosis and treatment of patients with peripheral arterial diseases (adult population)»: Resolution of the Ministry of Health of the Republic of Belarus dated 11.05.2023 # 77.

Clinical protocol «Diagnosis and treatment of patients (adult population) with benign diseases of the rectum, pararectal and coccygeal region in outpatient and inpatient settings»: Resolution of the Ministry of Health of the Republic of Belarus dated 01.04.2022 # 22.

Clinical protocol «Endovenous laser coagulation of varicose veins»: Resolution of the Ministry of Health of the Republic of Belarus dated 30.07.2012 # 872.

Clinical protocol «Medical observation and provision of medical care to women in obstetrics and gynecology»: Resolution of the Ministry of Health of the Republic of Belarus dated 19.02.2018 # 17.

4. Topographic anatomy and operative surgery of the head

4.1. Topographic anatomy and operative surgery of the cranial part of the head

Boundaries of the cerebral and facial regions of the head. Regions of the cerebral region of the head.

Features of the blood supply and innervation of the cerebral region of the head.

Topographic anatomy of the fronto-parieto-occipital region. Anatomical prerequisites for scalp wounds of the head.

Brain tunics, spaces. Dura mater of the brain, dural sinuses, diploic and emissary veins.

Topographic anatomy of the temporal region.

Topographic anatomy of the mastoid region: boundaries, layer anatomy, boundaries of the triangle of Chipauit.

Head injuries: closed, open; penetrating, non-penetrating. Extracranial hematomas. Intracranial hematomas. Topographic and anatomical rationale, indications and technique for performing primary surgical treatment of head wounds, stopping bleeding in case of damage to the middle meningeal artery. Topographic and anatomical rationale, indications and principles of surgery: stopping bleeding due to damage to the dural sinuses; trephination and craniotomy (osteoplasty and resection methods); antrotomy.

Topographic and anatomical rationale, indications and principles of surgery for brain compression.

4.2. Topographic anatomy and operative surgery of the facial part of the head

Facial regions.

Features of the blood supply and innervation of the facial region. The facial artery and its anastomoses. The facial vein: its tributaries, anastomoses (venous plexuses).

Topographic anatomy of the buccal region.

Topographic anatomy of the parotid-masseteric region.

Topographic anatomy of the parotid gland.

The deep region of the face: boundaries, contents, cellular spaces and their relationship with the cellular spaces of the head and neck.

Incision and drainage of abscesses of the deep region of the face – temporopterygoid and pterygomandibular.

5. Topographic anatomy and operative surgery of the neck

5.1. Topographic anatomy of the neck

Borders, regions and triangles of the neck. Relief anatomy and external landmarks of the neck.

Topographic and anatomical features of the neck relevant to operative surgery.

Fasciae, interfascial cellular spaces, fascial beds and fascial sheaths of the neck.

Sternocleidomastoid region: borders and layer anatomy.

Carotid sheath, topographic anatomy of the cervical neurovascular bundle.

Borders and contents of the interscalene and antescalene spaces, scalenovertebral triangle.

Anterior neck region: borders, triangles and their layer anatomy.

Topographic anatomy of the submandibular gland. Topographic anatomy of the lymph nodes of the neck.

5.2. Topographic anatomy and operative surgery of the neck

Topographic anatomy of the neck organs: larynx, trachea, pharynx, esophagus, thyroid and parathyroid glands. Lateral region of the neck: boundaries, triangles, layered structure.

Posterior region of the neck: boundaries, layered structure, vessels and nerves.

Topographic anatomy of the cervical lymph nodes.

Topographic anatomy of the subclavian artery.

Topographic anatomy of the neck veins.

Topographic and anatomical rationale, indications and surgical techniques for tracheostomy, puncture tracheostomy and conicotomy.

Incision and drainage of abscesses and phlegmons of the neck (submandibular abscess, phlegmon of the carotid sheath, suprasternal, previsceral and retrovisceral cellular spaces).

Surgical approaches to the carotid (common, internal and external), vertebral and lingual arteries.

Seldinger’s subclavian vein catheterization.

Thyroid surgery (thyroidectomy, hemithyroidectomy, thyroidectomy with lymph node dissection): indications, stages.

6. Practicing practical skills in the training operating room

Rules of conduct in the operating room.

Preparing staff for surgery. Hand hygiene. Changing clothing. Preparing the surgical field.

Selecting general and specialized instruments, dressings and sutures.

Selecting access and performing surgery on a laboratory animal (rabbit, etc.).

Practicing practical skills on cadaveric specimens and virtual simulators.

Rules for using surgical instruments.

Assembling a set of general surgical and specialized instruments for performing surgeries: cricothyrotomy, tracheostomy, femoral amputation, arterial and venous catheterization and punctures (vessels, pleural cavity, pericardial cavity).

Performing surgical operations and procedures while observing the principles of asepsis, antisepsis and safety precautions on biological specimens or models (simulators).

7. Topographic anatomy and operative surgery of the thorax and mediastinum

7.1. Topographic anatomy and operative surgery of the thorax

Thorax, borders and regions of the chest and back.

External landmarks and boundaries of the thorax, topographic lines.

Topographic anatomy of the thoracic wall. Topographic anatomy of the neurovascular bundle of the intercostal space and the internal thoracic artery.

Topographic anatomy of the diaphragm. Diaphragmatic hernias.

Topographic anatomy of the mammary gland.

Topographic anatomy of the pleura and lungs.

Topographic-anatomical rationale, indications and principles of surgical operations: puncture of the pleural cavity (thoracocentesis), incision and drainage of abscesses and phlegmons of the mammary gland.

Topographic-anatomical rationale, indications and principles of surgical operations: thoracotomy, rib resection, pneumonotomy, pneumonectomy, lobectomy, segmental lung resection.

Topographic-anatomical rationale, indications and principles of breast surgery: resection, radical resection, mastectomy, radical mastectomy (Madden, Patey and Halsteads' operations).

7.2. Topographic anatomy and operative surgery of the mediastinal organs

Topographic anatomy of the mediastinum: boundaries, compartments, contents.

Topographic anatomy of the mediastinum viscera: aorta and its branches, trachea, thymus, brachiocephalic veins, superior and inferior cava veins, brachiocephalic trunk, pulmonary arteries and veins, heart, esophagus, vagus nerve, diaphragmatic nerve, thoracic duct, sympathetic trunk, azygos and hemiazygos veins, internal thoracic artery.

Pericardial puncture (pericardiocentesis) by Larrey's method, parasternal puncture of the pericardial cavity.

Surgeries for congenital (patent ductus arteriosus, coarctation of the aorta, ventrical septal defect, atrial septal defect, tetralogy of Fallot) and acquired heart diseases (commissurotomy, annuloplasty, prosthetics).

Surgical management of coronary heart disease: percutaneous transluminal balloon dilation; stenting; coronary artery and mammarocoronary bypass surgery.

Suturing of heart injuries. Heart transplantation.

8. Topographic anatomy and operative surgery of the abdomen

8.1. Topographic anatomy of the anterolateral abdominal wall. Surgical anatomy of the external abdominal hernias

Abdomen, abdominal walls, abdominal cavity: definitions, boundaries, external landmarks.

Topographic anatomy of the anterolateral abdominal wall (regions, layered structure, vessels and nerves, vascular anastomoses).

Projection of organs on the anterolateral abdominal wall.

Rectus abdominis sheath, linea alba, topographic anatomy of the umbilical region.

Weak spots of the anterolateral abdominal wall.

Inguinal region (boundaries, layered structure), inguinal space.

Inguinal canal, inguinal triangle (Hesselbach's triangle), umbilical folds, inguinal fossae.

Urachal duct, variants of its patent closure.

Topographic anatomy of the spermatic cord.

Descent of the testicles and formation of the inguinal canal.

Topographic and anatomical basis for cryptorchidism, hydrocele and spermatic cord.

Hernia: definition, components, classification and repair stages.

Surgical anatomy of hernias: direct, indirect (oblique) and congenital inguinal, umbilical and linea alba.

8.2. Operative surgery of abdominal hernias. Topographic anatomy of the peritoneum and abdominal cavity

Hernia repair stages.

Topographic and anatomical rationale and surgical technique: for indirect inguinal hernia (hernioplasty by Martynov, Girard-Spasokukotsky repair with Kimbarovsky suture), for direct inguinal hernia (hernioplasty by Bassini, Shouldice and Desard repairs). Lichtenstein hernia repair.

Topographic and anatomical rationale, indications and surgical technique: testicular descent in cryptorchidism; hydrocele (Winkelmann, Bergman).

Umbilical hernia repair (Mayo, Sapezhko and Lexer repairs; using a synthetic patch).

Features of surgical intervention for congenital, strangulated and sliding hernias.

Laparoscopic hernia repair (total extraperitoneal hernia repair (TEP), transabdominal preperitoneal hernia repair (TAPP).

Peritoneum, peritoneal cavity. Extraperitoneal spaces: retroperitoneal, retropubic, retroinguinal.

Topographic anatomy of the endoabdominal fascia.

Topographic anatomy of the peritoneum: ligaments, fossae, folds, mesenteries; abdominal floors; lesser omentum, greater omentum, omental bursa, recesses (depressions) of the upper floor.

Topographic anatomy of the peritoneum in the lower floor of the abdominal cavity.

Mesenteric sinuses, lateral canals (paracolic grooves), recesses (depressions).

Topographic anatomy of the small intestine. Topography of the small intestinal mesentery. Intestinal wall structure.

Vitelline duct, variants of its patency. Meckel's diverticulum.

8.3. Intestinal sutures. Topographic anatomy and operative surgery of the stomach and small intestine

Intestinal sutures: infected («dirty»), aseptic («clean»), single-row, multi-row, interrupted and continuous, manual, mechanical.

Techniques for applying intestinal sutures: interrupted – Jobert, Mateshuk; continuous – simple continuous, screw-in (Schmieden suture); interrupted seromuscular (Lambert suture); double-row intestinal – seromuscular + through (Albert suture).

Approaches to abdominal organs during open, laparoscopic and mini-access surgeries.

Laparocentesis.

Topographic and anatomical rationale, indications and technique for performing surgeries: suturing intestinal wounds; intestinal resection with end-to-end and side-to-side anastomosis; artificial small intestinal fistulas (ileostomies and jejunostomies).

Meckel's diverticulum removal.

Topographic anatomy of the stomach.

Topographic and anatomical rationale, indications and techniques for performing the following surgeries: gastrostomy – tubular (according to Witzel, Kader) and labial (according to Toprover); percutaneous endoscopic and laparoscopic gastrostomy; gastroenterostomy; anterior anterocolic and posterior retrocolic gastroenteroanastomosis; suturing of perforated gastric ulcers; duodeno-pyloroplasty, gastric resection according to Billroth I, Billroth II modified by Hofmeister-Finsterer, gastric resection with intestinal anastomosis according to Braun, gastric resection with intestinal anastomosis according to Roux-en-Y, vagotomy (truncal, selective, selective proximal).

8.4. Topographic anatomy and operative surgery of the liver, gallbladder, bile ducts, pancreas and spleen

Topographic anatomy of the liver, gallbladder and extrahepatic bile ducts, pancreas and spleen.

Typical (anatomical) and atypical liver resection; liver wound suturing (interrupted, Kuznetsov-Pensky, Oppel); liver abscess drainage; surgery for portal hypertension; liver transplantation; cholecystectomy from the «neck» and «fundus», cholecystostomy, endoscopic (laparoscopic and transluminal) cholecystectomy; choledochotomy, papillosphincterotomy (endoscopic and transduodenal); bile duct drainage (according to Kehr, Halsted-Pikovsky, Vishnevsky), subhepatic space drainage according to Spasokukotsky, percutaneous transhepatic drainage of the bile ducts; formation of biliodigestive anastomoses; splenic wound suturing, splenectomy; pancreaticoduodenal resection, omental bursa drainage.

8.5. Topographic anatomy and operative surgery of the colon

Topographic anatomy of the colon.

Appendectomy technique. Surgical approaches to the appendix. Retrograde appendectomy. Appendicular abscess.

Laparoscopic appendectomy.

Hemicolectomy, artificial colonic fistulas (colostomies), creation of an «unnatural anus».

8.6. Topographic anatomy and operative surgery of the lumbar region, retroperitoneal space, pelvic organs and perineum

Lumbar region: boundaries, layered structure, weak spots.

Retroperitoneal space: boundaries, fascia, layers of cellular tissue, their communication with other cellular spaces.

Topographic anatomy of the retroperitoneal organs (kidneys, adrenal glands, ureters).

Topographic anatomy of the abdominal aorta and its branches.

Topographic anatomy of the inferior vena cava and its tributaries. Cava-caval anastomoses.

Lumbar and intestinal lymphatic trunks. Regional lymph nodes.

Topographic anatomy of the lumbar plexus, lumbar sympathetic trunk nodes and lumbar splanchnic nerves.

Abdominal aortic aneurysms and their surgical treatment.

Topographic and anatomical rationale and principles of surgery: approaches to the kidney and ureter, pyelotomy, nephrostomy, partial nephrectomy, nephrectomy; Kidney transplantation.

The bony base of the pelvis, the pelvic cavity, the perineal region, the urogenital and pelvic diaphragms.

Pelvic fascia and cellular spaces.

Topographic anatomy of the urogenital peritoneum. Pelvic cavity floors.

Topographic anatomy of the iliac arteries and veins.

Topographic anatomy of the male pelvic organs.

Features of the topographic anatomy of the female pelvis, its organs and the perineum.

Topographic and anatomical rationale, indications and technique for performing bladder puncture.

Topographic and anatomical rationale, indications and principles of operations: cystostomy, bladder wound suturing; benign prostatic hyperplasia (transvesical suprapubic adenomectomy and transurethral resection of the prostate) and prostate cancer (radical prostatectomy and transurethral resection of the prostate); paraproctitis; Rectal fistula, hemorrhoids, rectal cancer; cesarean section, ectopic pregnancy.

Topographic and anatomical rationale for posterior vaginal fornix puncture and pelvic abscess drainage through the rectum and vagina.

Principles of surgery for varicose veins of the spermatic cord: Ivanisevich, Marmar, endovascular and laparoscopic.

Pilonidal cyst: principles of surgical treatment.

EDUCATIONAL DISCIPLINE «TOPOGRAPHIC ANATOMY AND OPERATIVE SURGERY» CURRICULAR CHART

Section, topic #	Section (topic) name	Number of class hours		SSIW	Literature	Practical skills	Form of control	
		lectures	practical				of practical skills	of current / intermediate assessment
	6th semester							
	Lectures	**9**	**-**	**3**				
1.	Introduction into the discipline «Topographic Anatomy and Operative Surgery»	1,5	-	-	1-7			
2.	Topographic anatomy and operative surgery of the lower limb	1,5	-	-	1-7			
3.	Topographic anatomy and operative surgery of the upper limb	-	-	1,5	1-7			Testing, survey
4.	Topographic anatomy and operative surgery of the cranial part of the head	1,5	-	-	1-7			
5.	Topographic anatomy and operative surgery of the facial part of the head	-	-	1,5	1-7			Interview
6.	Topographic anatomy and operative surgery of the neck	1,5	-	-	1-7			
7.	Topographic anatomy and operative surgery of the thorax	1,5	-	-	1-7			
8.	Topographic anatomy and operative surgery of the mediastinal organs	1,5	-	-	1-7			
	Practical lessons	**-**	**40**	-				
1.1	Aims and objectives of topographic anatomy and operative surgery. Surgical operations, surgical instruments	-	2,5	-	1-7	Determination of the type of surgical instrument and its purpose	Visual assessment of the demonstration of tools*	Survey, testing

1.2	Disconnecting and connecting tissues. Suture material. Surgical sutures and knots	-	2,5	-	1-7	Forming of knots (simple, surgical)	Visual assessment based on the use of simulators for skin suturing, knot formation and visual assessment based on suture material used in healthcare in the Republic of Belarus	Survey, testing
						Determination of the type, name, purpose and other characteristics of suture material based on the information on the packaging	Assessment using suturing simulators*	Interview
						Applying of a hemostatic clamp	Visual assessment of the selection of tools and their correct use using simulators*	Survey
						Application of a vascular clamp (Höpfner vascular clamp)		Survey, testing
						Ligation of vessels (in the wound, along the length, with suturing, using Deschamps and Cooper ligature needles)		Survey
						Tissue dissection with a scalpel		Survey
						Application of sutures: simple interrupted suture, Donati suture, interrupted U-shaped horizontal suture; continuous sutures: simple (locking), Schmieden U-shaped (mattress), Halstead cosmetic suture (optional)	Visual assessment of the selection of tools and their correct use using simulators*	Survey, testing

						Removal of skin sutures	Visual assessment of the selection of tools and their correct use using simulators*	Survey
2.1	Topographic anatomy of the lower limb: gluteal region, thigh and knee regions	-	2,5	-	1-7	Locating points on the human body with the name of the topographic-anatomical landmark for determining the pulse on the arteries of the lower limb and finger pressure on them to temporarily stop bleeding (femoral artery, posterior tibial and dorsalis pedis artery)	Assessment using a simulated participant*	Survey, testing, demonstration on a simulated participant
						Finding points with the name of the topographic-anatomical landmark for performing catheterization of the femoral artery and vein	Assessment using simulations*	
2.2	Topographic anatomy of the lower leg and foot regions and operative surgery of the lower limb	-	2,5	-	1-7	Compilation of a set of general surgical and special instruments for performing a hip amputation operation	Visual assessment of the choice of instruments, suture material and their correct use using simulators	Survey, testing
2.3	Topographic anatomy of the axillary region and shoulder regions	-	2,5	-	1-7	Locating points on the human body with the name of the topographic-anatomical landmark for determining the pulse on the radial artery and finger pressure on them to temporarily stop bleeding	Performing a practical skill on a simulated participant*	Survey, testing, demonstration on a simulated participant
2.4	Topographic anatomy of the elbow, forearm	-	2,5	-	1-7	Performing a surgical	Visual assessment of the	Survey, testing

	and hand regions. Operative surgery of the upper limb					procedure - ligation of vessels (in a wound, along its length, with suturing, using Deschamps and Cooper ligature needles)	choice of instruments, suture material and their correct use using simulators*	
						Performing a surgical procedure – venipuncture of the median cubital vein	Visual assessment of the choice of instruments, suture material and their correct use using simulators	Survey, testing
						Performing a surgical operation - vascular suture: circular-nodal, parachute, continuous; lateral (optional)		Survey, testing
						Performing a surgical operation - epineural nerve suture		Survey, testing
						Performing a surgical operation - tendon suture (Bunnel-Kuneo, Kessler-Tajima) (optional)		Survey, testing
3.	Practicing practical skills in surgical departments of healthcare institutions	-	2,5	-	1-7	Locating points on the human body with the names of topographic and anatomical landmarks for determining the pulse in arteries and applying digital pressure to them to temporarily stop bleeding: radial artery; femoral artery; dorsalis pedis artery; posterior tibial artery	Performing the practical skill at the patient's bedside*	Demonstration on a patient
						Locating points on the human body with the name	Performing a practical skill at the patient's	Demonstration on a patient

						of the topographic-anatomical landmark for performing a puncture of the pleural cavity	bedside*	
4.1.	Topographic anatomy and operative surgery of the cranial part of the head	-	2,5	-	1-7	Compilation of a set of general surgical and special instruments for performing craniotomy surgery	Visual assessment based on the use of instruments on cadaveric material, simulators*	Survey
						Performing a craniotomy surgery	Evaluation based on the use of instruments on cadaveric material and simulators	Survey, testing
4.2	Topographic anatomy and operative surgery of the facial part of the head	-	2,5	-	1-7	Locating points on the human body with the name of the topographic-anatomical landmark for determining the pulse on the superficial temporal and facial arteries and finger pressure on them to temporarily stop bleeding	Performing a practical skill on a simulated participant*	Survey, testing, demonstration on a simulated participant
5.1	Topographic anatomy of the neck	-	2,5	-	1-7	Locating points on the human body with the names of topographic and anatomical landmarks for determining the pulse in arteries and applying digital pressure to them to temporarily stop bleeding: common carotid artery; subclavian artery	Performing a practical skill on a simulated participant*	Survey, testing, demonstration on a simulated participant
5.2	Topographic anatomy and operative surgery of the neck	-	2,5	-	1-7	Locating points on the human body with the name	Performing a practical skill on a cadaver.*	Survey, testing, solving

						of the topographic-anatomical landmark for performing catheterization of the subclavian vein, internal jugular vein	Performing a practical skill on a simulated participant*	situational problems
						Compilation of a set of general surgical and special instruments for performing a tracheostomy operation	Visual assessment of the choice of tools*	Survey, testing, solving situational problems
						Performing a cricothyroidotomy surgery	Application evaluation using simulators*	Survey
						Performing an upper tracheostomy surgery	Performing a practical skill on a simulator*	Survey
6.	Practicing practical skills in the training operating room	-	2,5	-	1-7	Ability to correctly use (hold and perform actions correctly) surgical instruments	Assessment based on the use of instruments on laboratory animals	Survey
6.	Final lesson on practicing practical skills	-	2,5	-	1-7	Performing a surgical operation: ligation of blood vessels	Visual assessment of the choice of instruments and their correct use using simulators and laboratory animals	
7.1	Topographic anatomy and operative surgery of the thorax	-	2,5	-	1-7	Locating points on the human body with the name of the topographic-anatomical landmark for performing a puncture of the pleural cavity	Assessment using an anatomical table, cadaveric specimens, simulators and a simulated participant.* Performing practical skills at the patient's bedside	Survey, testing, solving situational problems
						Assembling a set of general surgical and special instruments to	Visual assessment of the choice of tools*	

						perform the operation: puncture of the pleural cavity		
7.2	Topographic anatomy and operative surgery of the mediastinal organs	-	2,5	-	1-7	Locating points on the human body with the name of the topographic-anatomical landmark for performing a puncture of the pericardial cavity	Performing a practical skill at the patient's bedside	Testing, survey
7.2	Final lesson on the section: «Topographic anatomy and operative surgery of the thorax and mediastinal organs»	-	2,5	-	1-7			Testing, survey, solving situational problems. Credit
	7th semester							
	Lectures	**9**	**-**	**-**				
1.	Topographic anatomy of the anterolateral abdominal wall. Surgical anatomy of the external abdominal hernias	1,5	-	-	1-7			
2.	Operative surgery of abdominal hernias. Topographic anatomy of the peritoneum and abdominal cavity	1,5	-	-	1-7			
3.	Intestinal sutures. Topographic anatomy and operative surgery of the stomach and small intestine	1,5	-	-	1-7			
4.	Topographic anatomy and operative surgery of the liver, gallbladder, bile ducts, pancreas and spleen	1,5	-	-	1-7			
5.	Topographic anatomy and operative surgery of the colon	1,5	-	-	1-7			
6.	Topographic anatomy and operative surgery of the lumbar region, retroperitoneal space, pelvic organs and perineum	1,5	-	-	1-7			
	Practical lessons	**-**	**40**	**-**				
8.1	Topographic anatomy of the anterolateral	-	5	-	1-7	A graphic representation	Evaluation using	Survey, solving

	abdominal wall. Surgical anatomy of the external abdominal hernias					of the topographic contours of organs, projections of major nerves and vessels on the surface of the body, on the skeleton	cadaveric material and simulators	situational problems
8.2	Operative surgery of abdominal hernias. Topographic anatomy of the peritoneum and abdominal cavity	-	5	-	1-7	Compilation of a set of general surgical and special instruments for performing hernia repair surgery	Visual assessment of the choice of instruments, suture material and their correct use using simulators	
						Plastic surgery of the inguinal canal for inguinal hernias	Evaluation of correct application using simulators	Survey
8.3	Intestinal sutures. Topographic anatomy and operative surgery of the stomach and small intestine	-	5	-	1-7	Compilation of a set of general surgical and special instruments for performing operations: suturing of intestinal wounds; suturing of perforated gastric ulcers	Visual assessment of the choice of instruments, suture material and their correct use using simulators	Survey, solving situational problems
						Explanation and demonstration of the use of a three-lumen esophageal obturator tube for bleeding from esophageal varices	Visual assessment on the simulator	Survey
8.4	Topographic anatomy and operative surgery of the liver, gallbladder, bile ducts, pancreas and spleen	-	5	-	1-7	Performing surgical operations and manipulations: endoscopic sutures; cholecystectomy;	Visual assessment of the choice of instruments, suture material and their correct use using simulators	Survey, solving situational problems
8.5	Topographic anatomy and operative surgery of the colon	-	5	-	1-7	Compilation of a set of general surgical and	Visual assessment of instrument selection and	Testing, surveys, solving

						special instruments for performing an appendectomy operation	proper use using simulators; wet mounts; laboratory animals. Problem-based basic training using a case study on «Appendectomy»	situational problems
8.6	Topographic anatomy and operative surgery of the lumbar region, retroperitoneal space, pelvic organs and perineum	-	5	-	1-7	A graphic representation of the topographic contours of organs, projections of major nerves and vessels on the surface of the body, on the skeleton	Evaluation using cadaveric material and simulators	Testing, surveys, solving situational problems
3.	Practicing practical skills in surgical departments of healthcare institutions	-	5	-	1-7	Holo- and skeletotopy of the abdominal internal organs visualized by radiographic imaging (radiographs). Topographic and anatomical rationale for choosing the location for artificial fistula formation	Performing a practical skill at the patient's bedside	Performing a practical skill at the patient's bedside
6.	Practicing practical skills in the training operating room	-	5	-	1-7	Performing surgical procedures and procedures: appendectomy, intestinal wound suturing	Visual assessment of instrument selection and their proper use using laboratory animals	Assessment of practical skills in the operating room
	Total hours	**18**	**80**	**3**				Exam

*This is a mandatory form of current certification.

INFORMATION AND INSTRUCTIONAL UNIT

LITERATURE

Basic (relevant):

1. Stenko, A. A. Topographic anatomy and operative surgery : manual for students studying in the specialty 1-79 01 01 «General Medicine» / A. A. Stenko. – Minsk : New knowledge, 2022. – 384 p.

Additional:

2. Stenko, A. A. Topographic anatomy and operative surgery : course of lectures for the medical faculty for foreign students / A. A. Stenko. – 2nd ed. – Grodno : GSMU, 2016. – 212 p.

3. Tsyhykalo, O. V. Topographical anatomy and operative surgery : textbook for English-speaking foreign students / O. V. Tsyhykalo. – 2nd ed. – Vinnytsia : Nova Kniha, 2018. – 528 p.

4. Nicolaev, A. V. Topographic anatomy and operative surgery : textbook / A. V. Nicolaev. – 3d ed. – Moscow : Geotar-Media, 2021. – 671 p.

5. Snell, R. S. Clinical Anatomy by regions / R. S. Snell. – 10th ed. – Philadelphia : Wolters Kluwer : Lippinkott Williams&Wilkins, 2019. – 814 p.

6. Klyuy, E. A. Topographic anatomy and operative surgery of the neck : teaching aid / E. A. Klyuy, S. D. Denisov. – Minsk : BSMU, 2018. – 20 p.

Electronic courseware for the educational discipline «Topographic Anatomy and Operative Surgery»:

7. https://etest.bsmu.by/course/view.php?id=326.

METHODOLOGICAL RECOMMENDATIONS FOR THE ORGANIZATION AND PERFORMANCE OF STUDENT INDEPENDENT WORK IN THE ACADEMIC DISCIPLINE

The time allocated for independent work can be used by students for:

preparing for lectures, practical classes;

preparing for final lesson, credit and exam in the academic discipline;

studying the topics (issues) designed for independent work;

problem solving;

performing research and creative tasks;

preparing thematic reports, abstracts, presentations;

performing practical tasks;

taking notes of educational literature;

compiling a review of scientific literature on a given topic;

execution of information and demonstration materials (stands, posters, graphs, tables, newspapers, etc.);

compilation of a thematic selection of literature sources, Internet sources.

METHODOLOGICAL RECOMMENDATIONS FOR THE ORGANIZATION AND PERFORMANCE OF SUPERVISED STUDENT INDEPENDENT WORK IN THE ACADEMIC DISCIPLINE

APPROXIMATE LIST OF TASKS FOR SUPERVISED STUDENT INDEPENDENT WORK:

writing and presentation of an essay;

presentation of a report;
computer testing;
tests creation by students to organize mutual control.

FORMS OF CONTROL OF SUPERVISED STUDENT INDEPENDENT WORK:
testing;
interview;
defense of the abstract (report).

LIST OF AVAILABLE DIAGNOSTIC TOOLS

The following forms of current certification are used to diagnose competencies:
interview;
survey;
testing;
demonstration on a simulated participant;
demonstration on a patient;
solving situational problems;
practical skill performance at the patient's bedside;
assessment of practical skills in the operating room.

LIST OF AVAILABLE TEACHING METHODS

Traditional method;
active (interactive) methods:
Problem-Based Learning (PBL);
Case-Based Learning (CBL);
Simulation-Based Learning.

LIST OF PRACTICAL SKILLS

Name of practical skills	Form of practical skills control
1. Locating points on the human body with the names of topographic and anatomical landmarks for determining the pulse in arteries and applying digital pressure to them to temporarily stop bleeding: superficial temporal artery; facial artery; common carotid artery; subclavian artery; radial artery; femoral artery; dorsalis pedis artery; posterior tibial artery	1. Assessment using a simulated participant. 2. Performing the practical skill at the patient's bedside
2. A graphic representation of the topographic contours of organs, projections of major nerves and vessels on the surface of the body, on the skeleton	Evaluation using cadaveric material and simulators
3. Locating points on the human body with the	1. Assessment using:

Name of practical skills	Form of practical skills control
name of the topographic-anatomical landmark for performing catheterization of the subclavian vein, internal jugular vein and femoral artery and vein	anatomical table; cadaveric material; simulators; wet mounts; museum specimens. 2. Performing the practical skill at the patient's bedside
4. Locating points on the human body with the name of the topographic-anatomical landmark for performing a puncture of the pleural cavity, pericardial cavity	Performing the practical skill at the patient's bedside
5. Holo- and skeletotopy of the internal organs of the abdominal cavity when visualized by the X-ray method (radiograms)	Performing the practical skill at the patient's bedside
6. Topographic and anatomical justification for the choice of localization for the formation of artificial fistulas	
7. Identifying the type, name, purpose and other characteristics of suture material based on the packaging	Assessment using suturing simulators
8. Forming knots (simple, marine, surgical)	Visual assessment based on the use of simulators for skin suturing, knot formation and visual assessment based on suture material used in healthcare in the Republic of Belarus
9. Determination of the type of surgical instrument and its purpose	Visual assessment based on the use of simulators for skin suturing, knot formation and visual assessment based on suture material used in healthcare in the Republic of Belarus
10. Applying a hemostatic clamp	Visual assessment of the selection of tools and their correct use using simulators
11. Ability to correctly use (hold and perform actions) surgical instruments (a list of instruments is attached)	Assessment based on the use of instruments on laboratory animals
12. Assembling a set of general surgical and specialized instruments for performing the following surgeries: hernia repair; craniotomy; tracheostomy; appendectomy; hip amputation; arterial and venous catheterization; punctures (vessels, pleural cavity, pericardial cavity)	Visual assessment of the choice of instruments, suture material and their correct use using simulators

Name of practical skills	Form of practical skills control
13. Explanation and demonstration of the use of a triple-lumen esophageal obturator catheter for bleeding from esophageal varices	Visual assessment on the simulator
14. Performing surgical procedures and procedures: application of a hemostatic clamp; application of a vascular clamp (Höpfner vascular clamp); ligation of vessels (in the wound, along its length, with suturing, using Deschamps and Cooper ligature needles); venipuncture of the median cubital vein; tissue dissection with a scalpel; suturing (simple interrupted suture, Donati suture, interrupted horizontal U-shaped suture; continuous sutures: simple (locking), Schmieden U-shaped (mattress), Halsted cosmetic suture; skin suture removal	Visual assessment of the selection of tools and their correct use using simulators
tracheostomy; conicotomy; closure of penetrating gastric ulcer; closure of intestinal wound;	Application evaluation using simulators*
appendectomy;	Visual assessment of instrument selection and proper use using simulators; wet mounts; laboratory animals. Problem-based basic training using a case study on «Appendectomy»
cholecystectomy; inguinal canal repair for inguinal hernias; intestinal sutures (single-row continuous, double-row Albert suture, Lambert suture, Schmieden suture); endoscopic sutures vascular suture: circular interrupted, «parachute», continuous; lateral; nerve (epineural) suture; tendon suture (Bünnell-Küneau, Kessler-Tajima)	Visual assessment of the choice of instruments, suture material and their correct use using simulators

LIST OF SIMULATION EQUIPMENT USED

1. Knot tying simulator.
2. Skin suturing simulator.
3. Bowel manipulation simulator.
4. Simulator for surgical procedures on the anterior abdominal wall.
5. Anatomical table.
6. Laparoscopic stand.
7. Cricothyrotomy and tracheostomy simulator.
8. Blackmore triple-lumen esophageal obturator.

PROTOCOL OF THE CURRICULUM APPROVAL BY OTHER DEPARTMENTS

Title of the discipline requiring approval	Department	Amendments to the curriculum in the academic discipline	Decision of the department, which designed the curriculum
1. Surgical Diseases	Surgery and transplantology with a course of retraining and advanced training (R and AT)	No adjustments	Protocol # 2 of 08.09.2025
2. Obstetrics and Gynecology	Obstetrics and gynecology with a course of R and AT	No adjustments	Protocol # 2 of 08.09.2025
3. Traumatology and Orthopedics	Traumatology and orthopedics with a course of R and AT	No adjustments	Protocol # 2 of 08.09.2025
4. Neurology and Neurosurgery	Nervous and neurosurgical diseases	No adjustments	Protocol # 2 of 08.09.2025
5. Oncology	Oncology with a course of R and AT	No adjustments	Protocol # 2 of 08.09.2025
6. Otolaryngology and Dentistry	Otorhinolaryngology with a course of R and AT	No adjustments	Protocol # 2 of 08.09.2025
7. Ophthalmology	Eye Diseases	No adjustments	Protocol # 2 of 08.09.2025
8. Anesthesiology and Reanimatology	Anesthesiology and reanimatology with a course of R and AT	No adjustments	Protocol # 2 of 08.09.2025

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Curriculum content, composition and the accompanying documents comply with the established requirements.

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