MINISTRY OF SCIENCE, HIGHER EDUCATION AND INNOVATIONS OF THE KYRGYZ REPUBLIC

Higher Education Institution "Kyrgyz-Russian Slavic University named after the First President of the Russian Federation B.N. Yeltsin"

APPROVED BY
Director ICM and BMT
(position)
S.S. Abilova
(Full name)
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PROFESSIONAL CYCLE
Topographic anatomy and operative surgery

COURSE ANNOTATION (Module)

Assigned to the Department **of Anatomy, Histology and Physiology**

Curriculum Code: 310501_26_1 LDi.plx
Specialty code 31.05.01 (Russian Federation) / 560001 (Kyrgyz Republic) — General Medicine

Qualification: Medical Doctor
Mode of study: Full-time

Distribution of Discipline Hours by Semesters

Type of Activity / Semester (Year.Semester)	**3 (2.1)**		**4 (2.2)**		Total	
Weeks	18		18			
Type of Activity	AC	CO	AC	CO	AC	CO
Lectures	16	16	16	16	32	32
Laboratory Practicum	32	32	32	32	64	64
Including Interactive Session	0,3	0,3			0,3	0,3
Consultation hours during the examination period			0,5	0,5	0,5	0,5
Including interactive activities	3	3	3	3	6	6
Total In-class Hours	48	48	48	48	96	96
Contact Work (Face-to-Face)	48.3	48.3	48.5	48.5	96.8	96.8
Independent Work	11.7	11.7	12	12	23.7	23.7
Control Hours			29.5	29.5	29.5	29.5
Total	60	60	90	90	150	150

1. COURSE OUTLINE OBJECTIVES	
1.1	To form a comprehensive understanding of the topographic anatomy of body regions, organs, and systems, with special attention to clinically significant anatomo-functional features.
1.2	To develop the ability to apply topographic-anatomical knowledge to substantiate diagnoses, explain the features of pathological processes, and solve diagnostic and operative-surgical tasks.
1.3	To master elementary operative skills and standard surgical techniques (e.g., tissue incision, dissection, hemostasis, and suturing).
1.4	To cultivate a professional attitude guided by the principles of medical humanism and compassion, ensuring a respectful and careful approach to anatomical specimens and cadaveric material.
1.5	To instill high ethical and moral standards of behavior and professionalism within the medical university's dissection rooms and anatomy laboratories.

2. PLACE OF THE COURSE IN THE EDUCATIONAL PROGRAM	
Educational Program Units: B 1. O	
2.1	**Prerequisites (Student's Preliminary Training Requirements):**
2.1.1	Chemistry
2.1.2	Biology
2.1.3	Normal (Human) Anatomy
2.1.4	Physiology
2.1.5	Physics, Mathematics
2.1.6	History of Medicine
2.1.7	Biochemistry
2.1.8	Health and Safety
2.1.9	Immunology
2.1.10	Histology, Embryology, and Cytology
2.1.11	Normal Physiology
2.1.12	Fundamentals of Informatics
2.1.13	Bioethics
2.1.14	Medical Law
2.1.15	Nursing
2.1.16	Surgical Nursing
2.1.17	Information Literacy
2.1.18	Medical Nursing
2.2	**Subsequent disciplines requiring proficiency in this course:**
2.2.1	General Surgery
2.2.2	Faculty Surgery
2.2.3	Hospital Surgery
2.2.4	Traumatology and Orthopedics
2.2.5	Pediatric Surgery
2.2.6	Urology
2.2.7	Obstetrics and Gynecology
2.2.8	Otorhinolaryngology
2.2.9	Ophthalmology
2.2.10	Pediatrics
2.2.11	Hospital Therapy
2.2.12	Endocrinology
2.2.13	Neurosurgery and Neurology
2.2.14	Forensic medicine
2.2.15	Oncology, Radiation Therapy
2.2.16	Faculty therapy
2.2.17	Pathological Anatomy
2.2.18	Anesthesiology, Resuscitation, and Intensive Care
2.2.19	Stomatology
2.2.20	Pathophysiology, Clinical Pathophysiology

2.2.21	Diagnostic Radiology
2.2.22	Procedural Nurse Assistant
2.2.23	Physician Assistant
2.2.24	Occupational Diseases
2.2.25	Infectious Diseases
2.2.26	Primary Care Physician Assistant
2.2.27	Gerontology
2.2.28	Autopsy Course
2.2.29	Sports Medicine
2.2.30	Phthisiology
2.2.31	Standards of Diagnosis and Treatment
2.2.32	Medical Rehabilitation

3. STUDENTS' COMPETENCIES RESULTING FROM THE COURCE UNIT (MODULE)	
OPC-1: Understand principles of surgical approaches and techniques **OPC-4:** Capable of using medical devices in accordance with established medical care protocols, as well as conducting patient examinations to establish a diagnosis. **GSC-1**: Analyze the topographic-anatomical structure of body regions	
Knowledge:	
Level 1	Basic methods of using medical devices and instruments.
Level 2	Methods of surgical hand preparation and surgical field preparation. Techniques for performing local anesthesia. Vishnevsky's nerve block technique. Use of general and specialized surgical instruments and suture materials.
Level 3	Subject and objectives of operative surgery. Types of surgeries: radical, palliative, and diagnostic. Concept of single-stage and multi-stage operations, urgent (emergency) and elective surgeries. Concept of asepsis and antisepsis. Classification of surgical instruments. Concept of microsurgery. Modern diagnostic equipment used in surgery.
Skills:	
Level 1	Justify the use of medical devices and instruments.
Level 2	Demonstrate the technique of tying surgical knots (square knot and surgeon's knot). Apply and remove skin sutures. Apply sutures to muscles and subcutaneous tissue. Methods of administering medications. Venesection techniques.
Level 3	Perform incisions of skin, fascia, muscles, etc.; suture wounds on skin, muscles, and tendons; expose blood vessels and nerves; ligate blood vessels in wounds; perform incisions for draining purulent infections (abscesses, phlegmons, lymphadenitis, felon, etc.); perform disarticulation of finger phalanges; perform venesection; perform puncture and catheterization of major veins (subclavian, internal jugular, femoral).
Expertise:	
Level 1	Skills in working with medical devices and instruments on biological specimens and simulators.
Level 2	Skills in palpating major bony landmarks on the human body and determining the topographic contours of organs.
Level 3	Knowledge of topographic anatomy for: substantiating diagnoses, selecting rational surgical approaches, determining the method of surgical intervention, preventing intraoperative errors and complications related to age-related and topographic-anatomical features of the region. Ability to use general and specialized surgical instruments and suture materials; apply knowledge of surgical anatomy to select rational approaches and operative interventions; perform incisions of skin, fascia, muscles, etc.; suture wounds on skin, muscles, and tendons; expose blood vessels and nerves; ligate blood vessels in wounds; perform incisions for draining purulent infections (abscesses, phlegmons, lymphadenitis, felon, etc.).

OPC-4: Apply medical devices and instruments according to clinical protocols **PC-16/18:** Perform basic surgical procedures and manipulations **IC-4:** Demonstrate proficiency in handling surgical instruments	
Knowledge:	
Level 1	General principles of human body structure and the structural-functional interrelationships of its parts. Key historical milestones in the development of anatomical science and its significance for medicine and biology. Main branches of human anatomy, along with traditional and modern methods of anatomical research. Fundamentals of anatomical terminology.
Level 2	The course covers human evolution (anthropogenesis) and ontogeny, focusing on the fundamental principles of organ development and function based on the structural organization of cells, tissues, and organs. It examines the anatomical and topographic relationships of organs and body regions in adults, children, and adolescents. Students will study the key structural and topographic features of organs and organ systems, as well as their primary functions across different age groups. Additionally, the course addresses common anatomical variations, major anomalies, and congenital malformations of organs and their systems.
Level 3	The course emphasizes the applied value of acquired knowledge in adult, pediatric, and adolescent anatomy for subsequent academic studies and future professional practice. Furthermore, it highlights the significance of fundamental research in anatomical science for the advancement of both theoretical and clinical medicine.
Skills:	
Level 1	Demonstrate proper handling and use of basic anatomical dissection instruments (e.g., forceps, scalpels). Identify and demonstrate organs, their components, and structural details on anatomical specimens. Apply correct anatomical terminology when naming structures and describing their topographic relationships.
Level 2	Identify and isolate muscles, fasciae, major blood vessels, nerves, glandular ducts, and individual organs through dissection. Identify and demonstrate organs and their key structural features on radiographs (X-ray images).
Level 3	Identify and palpate major bony and muscular landmarks on a living subject, map the surface projections of major neurovascular bundles in various body regions, and correctly name and demonstrate joint movements on the human body or anatomical models. Identify and demonstrate organs, their components, and key structural details on medical images obtained through various imaging modalities (e.g., X-rays, Computed Tomography (CT), and Magnetic Resonance Imaging (MRI) scans).
Expertise:	
Level 1	Utilize scientific literature and apply basic information processing technologies.

PC-11: Prepared to participate in providing emergency medical care in situations requiring urgent medical intervention. **PC-12:** Identify normal and pathological anatomical structures"	
Knowledge:	
Level 1	Anatomical, physiological, age- and sex-specific, and individual characteristics of human body structure and development. General principles of the layered structure of the human body.
Level 2	Provide topographic anatomical rationale for medical care techniques
Level 3	Topographic anatomy of specific body regions; clinical anatomy of internal organs, fascial spaces, neurovascular bundles, bones, and major joints, as well as areas of weakness of the abdominal wall; collateral circulation in cases of occlusion of major blood vessels; zones of motor and sensory innervation by major nerves; age-related features of the structure, shape, and position of organs; and the most common congenital malformations, including their nature and principles of surgical correction.
Skills:	
Level 1	Demonstrate the clinical relevance of topographic anatomy and operative surgery in patient care.
Level 2	Apply topographic anatomical knowledge to substantiate a diagnosis, select an optimal surgical approach, and determine the appropriate method of surgical intervention. Utilize this knowledge to prevent intraoperative errors and complications related to age-related and topographic-anatomical features of the region, and demonstrate proficiency in handling general and specialized surgical

	instruments.
Expertise:	
Level 1	Possess skills in identifying key topographic-anatomical landmarks and applying practical clinical skills in patient care. Demonstrate proficiency in palpating major bony landmarks on a living subject, as well as delineating the topographic contours of organs and major vascular and nerve trunks.
Level 2	Apply topographic anatomical knowledge to substantiate a clinical diagnosis, select an optimal surgical approach, determine the appropriate surgical technique, and prevent intraoperative errors and complications related to age-related and regional topographic-anatomical features. Demonstrate proficiency in handling general and specialized surgical instruments and suture materials. Perform basic surgical techniques: incisions of the skin, fascia, and muscles; suturing of wounds in the skin, muscles, and tendons. Expose and manage neurovascular structures: isolate blood vessels and nerves; suture and ligate blood vessels within a wound. Perform incisions for drainage of purulent infections (abscesses, phlegmons, lymphadenitis, felon/panaritium, etc.). Execute specific surgical procedures: Disarticulation of finger phalanges. Venesection (venotomy). Puncture and catheterization of major veins (subclavian, internal jugular, femoral). Arthrocentesis (joint puncture) of major joints: shoulder, elbow, hip, knee, and ankle. Osteoperforation of major bones in cases of osteomyelitis. Management of bone, periosteum, muscles, vessels, nerves, and skin during limb amputation. Primary surgical debridement of wounds on the head and face. Decompressive trepanation of the skull.
Level 3	Utilize educational, scientific, and popular science literature, as well as online resources, for professional practice.

As a result of mastering the discipline, the student must

3.1	**Knowledge:**
3.1.1	Anatomical, physiological, age-related, sex-related, and individual characteristics of human body structure and development.
3.1.2	General principles of the layered structure of the human body.
3.1.3	Topographic anatomy of specific body regions.
3.1.4	Clinical anatomy of internal organs, fascial spaces, neurovascular bundles, bones, major joints, and areas of weakness in the abdominal wall. Collateral circulation in cases of occlusion (obstruction) of major blood vessels.
3.1.5	Zones of motor and sensory innervation by major nerves.
3.1.6	The most common congenital malformations, including their nature and principles of surgical correction.
3.2	**Skills:**
3.2.1	Proficiency in handling general and specialized surgical instruments and suture materials.
3.2.2	Indications and techniques for simple emergency surgical interventions: Primary surgical debridement of wounds. Cervical vagosympathetic block according to A.V. Vishnevsky. Resection trepanation of the skull (Burr hole trepanation). Tracheostomy. Cricothyrotomy. Incision and drainage of a breast abscess. Thoracentesis (pleural cavity puncture). Suturing of a penetrating wound of the pleural cavity. Pericardiocentesis (pericardial puncture). Appendectomy. Laparotomy and suturing of an abdominal wall wound.
3.2.3	Essence, indications, and main stages of more complex emergency and elective surgical interventions: Arthrocentesis (joint puncture). Principles of amputation and disarticulation. Osteoplastic craniotomy (osteoplastic trepanation of the skull). Radical mastectomy.

	Suturing of a cardiac wound (cardiorrhaphy). Exploration (revision) of the abdominal cavity organs. Suturing of gastric and intestinal wounds. Gastroentero- and enteroenteroanastomoses. Suturing of wounds in parenchymal organs (liver, spleen, kidneys). Exploration of the pelvic organs. Lumbar puncture. Bladder puncture, cystotomy, and suprapubic cystostomy (high bladder section). Intrapelvic block according to Shkolnikov-Selivanov. Cesarean section. Surgery for hydrocele of the tunica vaginalis, phimosis, and paraphimosis. Puncture of the posterior vaginal fornix (culdocentesis), episiotomy, and perineotomy.
3.2.4	Utilize educational, scientific, and popular science literature, as well as online resources, for professional practice.
3.2.5	Palpate major bony landmarks on a living subject and delineate the topographic contours of organs and major vascular and nerve trunks.
3.2.6	Apply topographic anatomical knowledge to substantiate a clinical diagnosis, select an optimal surgical approach, determine the appropriate method of surgical intervention, and prevent intraoperative errors and complications related to age-related and regional topographic-anatomical features.
3.2.7	Demonstrate proficiency in handling general and specialized surgical instruments, and perform surgical techniques and procedures on biological specimens, anatomical models, and simulators.
3.3	**Expertise:**
3.3.1	Palpate major bony landmarks on a living subject and delineate the topographic contours of organs and major vascular and nerve trunks. Apply topographic anatomical knowledge to substantiate a clinical diagnosis, select an optimal surgical approach, determine the appropriate surgical technique, and prevent intraoperative errors and complications related to age-related and regional anatomical features. Demonstrate proficiency in handling general and specialized surgical instruments and suture materials.
3.3.2	Basic Surgical Techniques: Perform incisions of the skin, fascia, and muscles. Suture wounds of the skin, muscles, and tendons. Expose blood vessels and nerves; suture and ligate blood vessels within a wound. Perform incisions for the drainage of purulent infections (abscesses, phlegmons, lymphadenitis, felon/panaritium, etc.). Perform primary surgical debridement of head and face wounds.
3.3.3	Perform decompressive trepanation of the skull, cervical vagosympathetic block according to A.V. Vishnevsky, lumbar puncture (spinal tap).
3.3.4	Perform a lower tracheostomy and cricothyrotomy, thoracentesis and drain the pleural cavity. Suture chest wall wounds. Perform an intercostal nerve block, pericardiocentesis (pericardial puncture) using Larrey's technique. Suture a cardiac wound (cardiorrhaphy) in cases of trauma.
3.3.5	Perform laparotomies: midline, right and left subcostal, laparocentesis for laparoscopic manipulations, hernia repair (herniorrhaphy) for inguinal and umbilical hernias. Suture wounds of the stomach, small, and large intestines. Create a colostomy. Perform an appendectomy. Suture a perforated gastric ulcer. Perform a gastrostomy (Witzel or Töpfer technique), gastric resection (Billroth I). Suture liver and splenic wounds in trauma. Perform classical cholecystectomy (from the fundus or from the neck) and splenectomy.
3.3.6	Perform a paranephric block. Suture renal wounds in trauma and drain retroperitoneal spaces. Perform a cystostomy, perform Ross or Bergmann operations for hydrocele, circumcision for phimosis, orchiopexy (testicular descent) for cryptorchidism.
3.3.7	Perform disarticulation of finger phalanges, venesection (venotomy), puncture and catheterization of major veins (subclavian, internal jugular, femoral), arthrocentesis (joint puncture) of major joints: shoulder, elbow, hip, knee, and ankle, osteoperforation of major bones for osteomyelitis. Manage bone, periosteum, muscles, vessels, nerves, and skin during limb amputation. Perform appropriate incisions for draining purulent mastitis in adults and children.