

SYLLABUS

1. General information on the course

Full course name	Clinical Anatomy and Surgery
Full official name of a higher education institution	Sumy State University
Full name of a structural unit	Academic and Research Medical Institute. Кафедра морфології
Author(s)	Riabenko Tetiana Vasylivna, Korenkov Oleksii Volodymyrovych
Cycle/higher education level	The Second Level Of Higher Education, National Qualifications Framework Of Ukraine – The 7th Level, QF-LLL – The 7th Level, FQ-EHEA – The Second Cycle
Duration	one semester
Workload	3 ECTS, 90 hours. For full-time course 36 hours are working hours with the lecturer (36 hours of seminars), 54 hours of the individual study.
Language(s)	English

2. Place in the study programme

Relation to curriculum	Compulsory course available for study programme "Medicine"
Prerequisites	Human Anatomy, Latin and Medical Terminology
Additional requirements	There are no specific requirements
Restrictions	There are no specific restrictions

3. Aims of the course

The aim of the discipline is to acquire new holistic knowledge of clinical anatomy of the human body, skills in substantiating clinical diagnosis, skills of the most rational access to organs, surgical removal of pathological foci and restoration of tissue and organ relationships damaged during surgery.

4. Contents

Topic 1 Surgeon armamentarium. Separation and suturing of soft tissues. Clinical anatomy and operative surgery of the fronto-parieto-occipital region and the internal cranial base.

Surgical anatomy of the fronto-parieto-occipital region: boundaries, layer-by-layer structure, blood supply, innervation, lymphatic efflux. The role of venous outflow pathways in the spread of infection associated with traumas and inflammatory diseases of the soft tissues of the fronto-parieto-occipital region. Surgical anatomy of the meninges, intermeningeal spaces, venous sinuses, and CSF flow pathways. Blood supply and innervation of the dura mater. Blood supply to the brain. Surgical anatomy of the internal cranial base, topographic anatomy of cranial nerves. Initial surgical debridement of penetrating and nonpenetrating craniocerebral traumas: local or general anesthesia, washing, cleaning, tissue dissection and wound revision, debriding, bleeding control, restoration of regular anatomical connections of the tissues by layered closure. Methods for control of bleeding from diploic veins of cranial bones, venous sinuses of the dura mater, and cerebral vessels. Clinical manifestations of the anterior, middle, and posterior cranial fossa fractures.

Topic 2 Clinical anatomy and operative surgery of the temporal region and the area of the mastoid process.

Clinical anatomy of the temporal region: boundaries, layer-by-layer structure, blood supply, innervation. Surgical anatomy of the middle meningeal artery. The scheme of craniocerebral topographic anatomy by Kronlein. Osteoplastic trepanation by Olivecrona: indications, technique. Decompressive craniectomy by Cushing: indications, technique. Clinical anatomy of the mastoid process. Boundaries of Chipault trepanation triangle. Mastoidectomy: indications, technique. Anatomical structures bordering Chipault trepanation triangle. Surgical instruments for particular purposes.

Topic 3 Clinical anatomy and operative surgery of the lateral part of the face.

Clinical anatomy of the buccal region: boundaries, blood supply, lymphatic and venous outflow pathways – the role of the venous network in spreading inflammation. Clinical anatomy of the parotid-masseteric region. Surgical anatomy of the parotid glands. Surgical anatomy of the facial nerve. Topical diagnosis of facial nerve injuries. Means of facial muscle neurotization in facial nerve injuries. Surgical treatment of suppurative parotitis. Clinical anatomy of the deep facial region. Surgical anatomy of the temporoptyergoid and interptyergoid spaces. Surgical anatomy of the pterygopalatine fossa. Surgical anatomy of peripharyngeal and retropharyngeal spaces. Means of drainage. Pathways of spreading purulent inflammatory processes of the face; making incisions for drainage. Technique of extra-oral maxillary and mandibular nerve block by S. N. Weisblat. Surgical anatomy of the frontal sinus. Jansen–Ritter method. Surgical anatomy of the maxillary sinus. Caldwell-LucIvanov method.

Topic 4 Clinical anatomy and operative surgery of the submandibular and carotid triangles of the neck.

Regions and triangles of the neck. Surgical anatomy of the cervical fascia by V. N. Shevkunenko. Tissue spaces of the neck and incisions for their drainage. Clinical anatomy of the submandibular triangle. Surgical anatomy of the submandibular salivary gland. Clinical anatomy of the carotid triangle. Surgical anatomy of the central neurovascular bundle of the neck. Surgical anatomy of the carotid sinus reflex area.

Topic 5 Clinical anatomy and operative surgery of the sternocleidomastoid region, lateral triangle, and organs of the neck.

Learn the topographic sternocleidomastoid region. anatomy of the sternocleidomastoid region. Learn the topographic anatomy of the lateral triangle. Learn how to perform surgical approaches to the neck organs, the main neurovascular bundle of the neck, and the thoracic lymph duct. Perform the vago-sympathetic block by Vishnevskiy. Perform cervical plexus block anesthesia. 6. Perform the brachial plexus block by Kulenkampff. Learn the stages of surgery for thoracic outlet syndrome in the interscalene space. Study the surgical anatomy of the neck organs. Learn the techniques of tracheotomy and cricothyrotomy. Learn the technique of the subtotal subfascial resection of the thyroid Bondarenko. gland by Mykolaiev, modified by Bondarenko. Gain surgical access to the cervical esophagus. Learn the technique of esophagotomy. Learn the technique of exposing the common carotid artery and external carotid artery. Learn the technique of carotid thrombectomy. Study the collateral circulation in internal carotid artery occlusion.

Topic 6 Clinical anatomy and operative surgery of the subclavian region, mammary gland, thoracic wall, pleura, and diaphragm.

Clinical anatomy of the subclavian region. Surgical anatomy of the superficial subpectoral space and deep subpectoral space: contents and incisions for drainage. Surgical anatomy of the clavipectoral triangle and pectoral triangle. Pectoralis minor syndrome. Surgical anatomy of the subclavian vein. Paget-Schroetter syndrome. Subclavian vein exposure. Thrombectomy. Venoplasty. Seldinger technique of subclavian vein puncture and catheterization. Exposure of the subclavian artery by Dzhanlidze and Petrovskiy. Pathways of collateral circulation after subclavian artery ligation. Surgical anatomy of the mammary gland. Surgical treatment of suppurative mastitis and benign mammary tumors. Mastectomy by Halsted–Meyer and Patey–Dyson: indications, technique. Surgical anatomy of the intercostal space. Intercostal nerve block: indications, technique. Surgical anatomy of the internal thoracic artery. Mammary coronary artery anastomosis: indications, technique. Surgical anatomy of the pleura and pleural recesses. Pleural puncture: indications, technique. Rib resection: indications, technique. Initial surgical debridement of penetrating chest traumas. Surgical anatomy of the diaphragm. Hiatal hernias. Nissen fundoplication. Surgical instruments used in thoracic surgery.

Topic 7 Clinical anatomy and operative surgery of the superior mediastinum, pericardium, heart, and lungs.

Mediastinum and its parts. Surgical anatomy of organs, vessels, and nerves of the superior mediastinum (thymus, brachiocephalic veins, superior vena cava, aortic arch, brachiocephalic trunk, left common carotid artery, left subclavian artery, phrenic nerve, and vagus nerve). Mediastinal tissue planes. Pathways of purulent process spreading in the mediastinum and the methods of its drainage. Surgical anatomy of the lungs. 6. Surgical approaches to the lungs and mediastinal organs. Pneumonectomy, lung lobectomy, segmentectomy: indications, technique. Surgical anatomy of the pericardium. Pericardiocentesis: indications, technique. Pericardiectomy: indications, technique. Surgical anatomy of the heart. Surgical accesses to the heart. Initial surgical debridement of chest traumas with cardiac injury. Surgical treatment of patent ductus arteriosus. Surgical treatment of aortic coarctation. Mitral commissurotomy: indications, technique. Modern methods of surgical treatment of coronary heart disease: coronary artery bypass surgery, mammary coronary artery anastomosis, coronary angioplasty, and periaortic plexectomy. Surgical instruments for particular purposes.

Topic 8 Clinical anatomy and operative surgery of the posterior mediastinum.

Surgical anatomy of the thoracic esophagus. Surgical access to the thoracic esophagus. Surgery for esophageal injuries. Esophagotomy. Esophageal resection. Esophageal suturing. Cardiomegaly (dilation of the cardiac part of the stomach): indications, technique. Cardiectomy: indications, technique. Fundoplication: indications, technique. Modern options for esophageal replacement. Surgical anatomy of the thoracic duct. Thoracic duct exposure: indications, technique. Surgical anatomy of azygos vein, hemiazygos vein, thoracic sympathetic trunk, thoracic aorta.

Topic 9 Clinical anatomy and operative surgery of the anterolateral abdominal wall and peritoneum. Intestinal sutures. Surgical treatment of hollow organs injuries.

To learn the projection of the abdominal organs on anterolateral abdominal wall. To master the technique of laparotomy. To study the causes of umbilical, epigastric and inguinal hernia. To learn the methods of plastics of hernial orifice at umbilical and epigastric (white line) hernias. To learn how to perform the plastics of anterior and posterior walls of the inguinal canal. To master the operative technique at strangulated hernias. To master the technique of revision of abdominal organs. To master the technique of surgical treatment of the abdominal penetrating wounds with the damage of hollow organs. To learn how to put the intestinal sutures.

Topic 10 Clinical anatomy and operative surgery of abdominal organs of upper and lower floor.

To study the surgical anatomy of the liver, gallbladder, bile ducts, pancreas, spleen, stomach, small intestine, large intestine and the vermiform process. To master the technique of abdominal organs revision. To ground the surgical approach to the pancreas. To master the technique of bleeding control from the liver. To master the technique of splenectomy. To perform mobilization of duodenum by Kocher. To master the technique of suturing perforated gastric ulcer. To learn how to suture the small intestine wound. To learn how to make an incision and drainage of subdiaphragmatic abscess by extrapleural and transthoracic approach by Melnikov. To master the technique of cholecystostomy, cholecystectomy, choledochotomy, choledochoduodenostomy, papillosphincterotomy and transduodenal papillosphincteroplastics. To master the technique of the small intestine resection with the imposition of enteroenteroanastomosis side to side and end to end. To master the technique of appendectomy. To master the technique of imposition of the preternatural anus (anus praeternaturalis). To learn the technique of gastrostomy. To learn to impose gastroenteroanastomosis by Wolfler, Hacker – Petersen and Roux. To learn to perform the basic stages of a gastrectomy by Billroth I and Billroth II in the Hofmeister – Finsterer modification. To learn to perform stem, selective and selective proximal vagotomy.

Topic 11 Clinical anatomy of the lumbar region, column, spinal cord and retroperitoneal space. Surgeries on the column, kidneys and ureters.

Topographical anatomy of the lumbar region. Surgical anatomy of the column. Surgical anatomy of the spinal cord, spinal meninges, epidural, subdural and subarachnoid spaces. Technique of lumbar puncture, epidural and spinal anesthesia. Laminectomy: indications, surgical technique, surgical instruments. Spina bifida: classification, surgical treatment. Surgical anatomy of the retroperitoneal space. Ways of spreading a purulent process from the retroperitoneal space. Surgical anatomy of the kidneys and ureters. Surgical approaches to the kidneys and ureters. Nephrolithotomy, pyelolithotomy, resection of the kidney, nephrectomy, ureterolithotomy, nephropexy: indications, surgical technique. Paraneuritic block by A. V. Vyshnevskiy: indications, surgical technique. Surgical anatomy of the adrenal glands. Surgical anatomy of the abdominal aorta and inferior vena cava. Surgical anatomy of the lumbar region of sympathetic trunk, autonomic plexuses of the abdomen and lumbar plexus.

Topic 12 Clinical anatomy and operative surgery of the pelvis.

Bones, joints, muscles, walls and foramina of the pelvis. Surgical anatomy of the perineum, peritoneal space and subperitoneal space of the pelvis. Surgical anatomy of the parietal and visceral pelvic fasciae. Anatomical spaces of the pelvic cavity. Ways of spreading purulent inflammatory processes from the anatomical spaces of the pelvic cavity. The methods for pelvic abscess drainage. 6. Surgical anatomy of the internal iliac artery. The open approach (intraperitoneal or extraperitoneal), endovascular approach and bilateral retroperitoneal approach to the internal iliac artery. Ligation of the internal iliac artery: indications, surgical technique. Surgical anatomy of the sacral plexus. Intrapelvic procaine block by Shkolnikov-Selivanov. Surgical anatomy of the urinary bladder, pelvic part of the ureter and prostate. Puncture of the urinary bladder, suprapubic cystostomy, prostate adenomectomy: indications, surgical technique. Surgical anatomy of the uterus. Surgical anatomy of the uterine appendages (fallopian tubes, ovaries, suspensory ligaments of the uterus). Surgical treatment of ectopic pregnancy. Caesarean section: indications, surgical technique. Surgical anatomy of the rectum. Milligan – Morgan hemorrhoidectomy. Surgical methods of paraproctitis treatment. Surgical anatomy of the testis and spermatic cord. Spermatic cord block by Lorin-Epstein. Surgical technique of treatment hydrocele and varicocele.

Topic 13 Clinical anatomy and operative surgery of the gluteal region, hip joint and thigh.

Clinical anatomy of the gluteal region. Superficial, deep compartments, cellular spaces of the gluteal region and their content. Surgical anatomy of the neurovascular bundles of the supra- and infrapiriform foramina. Incisions for exposing neurovascular bundles and for opening phlegmons of the gluteal region. Clinical anatomy of the posterior region of the thigh. Incisions for opening phlegmons of the posterior region of the thigh. Surgical anatomy of the sciatic nerve. Exposure and suture of the sciatic nerve. Indications and suture technique. Surgical anatomy of the hip joint. The ways of spreading paraarticular phlegmons of the hip joint. Puncture, arthrotomy and resection of the hip joint: indications and execution technique. Clinical anatomy of the anterior region of the thigh. Clinical anatomy of the anterior compartment of the thigh. Incisions for opening the phlegmon of the anterior compartment of the thigh. Clinical anatomy of the medial compartment of the thigh. Incisions for opening the phlegmon of the medial compartment of the thigh. Topography and content of the vascular and muscular lacunae. Surgical anatomy of the femoral canal. Surgical anatomy of the femoral hernias. Operative therapy of femoral hernia. Features of surgical treatment of the strangulated femoral hernias. Surgical anatomy of the femoral triangle, obturator and adductor canals. Surgical anatomy of the femoral artery.

Topic 14 Clinical anatomy and operative surgery of the knee, knee joint, lower leg, retromalleolar medial region and foot.

Clinical anatomy of the anterior and posterior region of the knee joint. Surgical anatomy of the popliteal fossa. Surgical anatomy of the knee joint. The ways of paraarticular phlegmon spreading of the knee. Puncture of the knee joint: indications, technique. Arthrotomy and resection of the knee joint: indications, technique. 7. Clinical anatomy of the anterior region of the lower leg. The structure of the anterior compartment of the lower leg. 8. The structure of the lateral compartment of the lower leg and the superior muscular-peroneal canal. 9. Clinical anatomy of the posterior region of the lower leg. Superficial fibrous and deep fibro-osseous compartment of the lower leg. The structure of the cruropopliteal canal. Clinical anatomy of the medial malleolus region. Surgical anatomy of the medial malleolar canal. Clinical anatomy of the plantar surface of the foot. Surgical anatomy of the medial, lateral and central compartments of the plantar surface of the foot. The structure of the plantar and calcaneal canal. The ways of purulent process spreading in phlegmon of the lower leg and foot. Incisions for drainage of the phlegmon of the lower leg and foot.

Topic 15 Clinical anatomy and operative surgery of the scapular region, axillary region, deltoid region, arm region and shoulder joint.

Clinical anatomy of the scapular region. Surgical anatomy of the fibro-osseous compartments of the scapular region, prescapular fissures and incisions for their drainage. Clinical anatomy of the deltoid region. Surgical anatomy of the subdeltoid cellular space and incisions for its drainage. The ways of the inflammatory process spreading from the subdeltoid cellular space. Surgical anatomy of the shoulder joint. The ways of periarticular phlegmon spreading. Puncture, arthrotomy and resection of the shoulder joint: indications, technique. Clinical anatomy of the axillary region. Clinical anatomy of the axillary fossa: walls, triangles, foramina and content. Surgical anatomy of the axillary artery. Surgical anatomy of the brachial plexus. Brachial plexus block: indications, technique. Topography of the axillary lymph nodes. The ways of the purulent-inflammatory process spreading of the axillary fossa. Incisions for the phlegmon exposure of the axillary fossa. Clinical anatomy of the anterior region of the arm. Compartments of the arm and their content. Surgical anatomy of the neurovascular bundles in the upper, middle and lower third of the arm. Clinical anatomy of the posterior region of the arm. Radial nerve canal. Exposure of the radial and median nerves in the middle third of the arm: indications, technique.

Topic 16 Clinical anatomy and operative surgery of the regions of elbow, forearm, wrist and hand.

To study the surgical anatomy of the cubital fossa, elbow joint and forearm. To master the technique of puncture, arthrotomy and resection of the elbow joint. To master the symptoms of median, ulnar and radial nerves injury. To ground the ways of inflammatory process spreading in forearm phlegmon. To learn how to make incisions for drainage of the forearm phlegmon. To study the clinical anatomy of the wrist area and hand. To master the structure of canals, synovial sheaths of the tendons of the hand and fingers flexors and extensors. To master the technique of the surgical treatment of panaritium. To ground the ways of purulent-inflammatory process spreading in phlegmon of the hand. To be able to make incisions for drainage of the phlegmon of the hand. To ground the symptoms that occur when the nerves of the upper limb are damaged. To master the technique of conduction anesthesia of the median, ulnar and radial nerves. To master the technique of conduction anesthesia by Lukashovich – Oberst and Brown – Usoltseva.

Topic 17 Vessels operations. Amputations and disarticulations.

To learn surgical anatomy of the upper and lower limbs arteries. To master the technique of exposure and ligation of upper and lower limbs arteries. To study the ways of collateral blood circulation after ligation of upper and lower limbs main arteries. To master the technique of vascular suture. To master the methods of surgical treatment of lower limbs varicose veins. To learn how to perform thromboembolectomy. To master the technique of amputation and exarticulation of fingers and toes. To master the technique of foot amputation by Sharp. To master the technique of osteoplastic amputation by Pirogov. To learn how to perform three-moment amputation of the thigh by Pirogov. To master the technique of thigh amputation by Gritti – Shimanovskiy. To learn the stages of extremity replantation and to master the technique of nerve and tendon suturing.

Topic 18 Graded Credit

Conducting graded credit in accordance with the current academic regulations.

5. Intended learning outcomes of the course

After successful study of the course, the student will be able to:

LO1	To determine the topographic and anatomical relationships of vascular and nervous formations, human organs and systems, topography and syntopy of human organs, age features of clinical anatomy of the body and surgical anatomy of birth defects
LO2	Identify modern surgical instruments, demonstrate mastery of the technique of performing basic surgical interventions, demonstrate the technique of primary surgical treatment of wounds, classify surgical operations
LO3	Вміти дотримуватися етичних принципів при роботі з пацієнтами, лабораторними тваринами.
LO4	Вміти дотримуватися професійної та академічної доброчесності, нести відповідальність за достовірність отриманих наукових результатів.
LO5	Be able to think abstractly, analyze modern information about the structure and function of organs, organ systems and the human body as a whole, synthesize information, draw reasoned conclusions, the ability to learn and be modernly trained

6. Role of the course in the achievement of programme learning outcomes

Programme learning outcomes achieved by the course.

For I2 Medicine:

PO2	Understand and demonstrate knowledge of fundamental and clinical biomedical sciences at a level sufficient to resolve professional tasks within the healthcare sector.
PO11	Determine the approach, plan, and management tactics for physiological pregnancy, physiological labor, and the postpartum period by making informed decisions according to established algorithms and standard protocols.
PO12	Assess the general condition of a newborn infant by making informed decisions according to established algorithms and standard protocols, while adhering to relevant ethical and legal standards.

PO17	Perform medical procedures and manipulations (according to List 5) in a hospital, home, or occupational environment based on a provisional clinical diagnosis and/or patient status indicators, making informed decisions and adhering to relevant ethical and legal standards.
PO21	Retrieve required information from professional literature, databases, and other sources; analyse, evaluate, and apply this information.
PO25	Communicate one's own knowledge, conclusions, and reasoning regarding healthcare and related issues to both specialist and non-specialist audiences clearly and unambiguously.

7. The role of the course in the development of program competencies

Program competencies addressed by the course:

For I2 Medicine:

PC1	GC 1. Ability to think abstractly, analyse, and synthesize.
PC2	GC 2. Ability to learn and master modern knowledge.
PC3	GC 3. Ability to apply knowledge in practical situations.
PC4	GC 4. Knowledge and understanding of the subject area and understanding of the professional activity.
PC5	GC 6. Ability to make informed decisions.
PC6	GC 7. Ability to work in a team.
PC7	GC 8. Ability to engage in interpersonal interaction.
PC8	SC 2. Ability to determine the required scope of laboratory and instrumental investigations and evaluate their results.
PC9	SC 11. Ability to solve medical problems in new or unfamiliar environments amidst incomplete or limited information, incorporating aspects of social and ethical responsibility, including the early intervention system.

8. Teaching and learning activities

Topic 1. Surgeon armamentarium. Separation and suturing of soft tissues. Clinical anatomy and operative surgery of the fronto-parieto-occipital region and the internal cranial base.

pr.tr.1 "Surgeon armamentarium. Separation and suturing of soft tissues. Clinical anatomy and operative surgery of the fronto-parieto-occipital region and the internal cranial base." (full-time course)

Solving practical problems on the principles of completing sets of surgical instruments, substantiation of the clinic of fractures of the skull base, as well as clarification of the technique of treatment and isolation of the operating field, local infiltration anesthesia, layered dissection, soft tissue connections, surgical treatment of injuries of the cerebral part of the head, cessation of bleeding from the vessels of the subcutaneous tissue, skull bones, meninges and venous sinuses. The study of this topic includes the theoretical training in the classroom and in the educational operating room, the description of the clinical anatomy of the fronto-parietal-occipital region and the internal base of the skull and completion of case-based learning.

Topic 2. Clinical anatomy and operative surgery of the temporal region and the area of the mastoid process.

pr.tr.2 "Clinical anatomy and operative surgery of the temporal region and the area of the mastoid process." (full-time course)

Solving practical problems to clarify the layered structure of the temporal area and the area of the mastoid process, arthrotomy technique, bone-plastic and decompression trepanation of the skull. The investigation of this subject involves the theoretical classroom instruction, the case-based learning and the development of practical surgical skills through team-based student participation in cranial surgical procedures. Students assume the responsibilities of a surgeon, an assistant surgeon and an operating room nurse, utilize both general and specialized surgical instruments and expand their knowledge through the review of educational operative surgery videos.

Topic 3. Clinical anatomy and operative surgery of the lateral part of the face.

pr.tr.3 "Clinical anatomy and operative surgery of the lateral part of the face." (full-time course)

Solving practical problems to clarify the features of blood supply to the lateral part of the face, topography of the parotid gland, branches of the facial nerve, incisions in phlegmons, abscesses of the lateral part of the face, purulent mumps, topical diagnosis of facial nerve lesions, justification maxillary and mandibular nerves, techniques of operations for chronic frontitis and sinusitis. The investigation of this subject involves the theoretical classroom instruction, analysis of clinical cases and practical training in surgical techniques through collaborative student work on organ complexes. Students rotate through the roles of a surgeon, an assistant surgeon and an operating room nurse, developing proficiency in the use of general and specialized surgical instruments. Additional learning is facilitated through the review of surgical training videos.

Topic 4. Clinical anatomy and operative surgery of the submandibular and carotid triangles of the neck.

pr.tr.4 "Clinical anatomy and operative surgery of the submandibular and carotid triangles of the neck." (full-time course)

Solving practical problems to clarify the features of the layered structure of the neck in the submandibular and carotid triangles, surgical anatomy of the submandibular salivary gland, as well as substantiation and implementation of the most rational incisions for drainage of phlegmons and neck abscesses. The investigation of this subject involves the theoretical classroom instruction, analysis of clinical cases and practical training in surgical techniques through collaborative student work on organ complexes. Students rotate through the roles of a surgeon, an assistant surgeon and an operating room nurse, developing proficiency in the use of general and specialized surgical instruments. Additional learning is facilitated through the review of surgical training videos.

Topic 5. Clinical anatomy and operative surgery of the sternocleidomastoid region, lateral triangle, and organs of the neck.

pr.tr.5 "Clinical anatomy and operative surgery of the sternocleidomastoid region, lateral triangle, and organs of the neck." (full-time course)

Solving practical problems to clarify surgical access to the neck, vascular-nervous bundle, thoracic lymphatic duct, as well as the principles of tracheotomy, conicotomy, suturing of the esophageal wound, vago-sympathetic blockade by Vishnevsky, blockade of the cervical and humeral plexus, carotid thrombendarterectomy, surgical treatment of diffuse and nodular goiter, compression syndrome of the vascular-nervous bundle of the interstitial space, exposing of the common and external carotid arteries. The investigation of this subject involves the theoretical classroom instruction, analysis of clinical cases and practical training in surgical techniques through collaborative student work on organ complexes. Students rotate through the roles of a surgeon, an assistant surgeon and an operating room nurse, developing proficiency in the use of general and specialized surgical instruments. Additional learning is facilitated through the review of surgical training videos.

Topic 6. Clinical anatomy and operative surgery of the subclavian region, mammary gland, thoracic wall, pleura, and diaphragm.

pr.tr.6 "Clinical anatomy and operative surgery of the subclavian region, mammary gland, thoracic wall, pleura, and diaphragm." (full-time course)

Solving practical problems to clarify the principles of puncture and catheterization of the subclavian vein, exposure of the subclavian artery, incisions in purulent mastitis, surgical treatment of benign and malignant tumors of the breast, incisions for drainage of subpectoral phlegmon, puncture of the pleural cavity, resection of the rib, perversion chest wall injuries, Nissen fundoplication, coronary anastomosis, intercostal nerve blockade. The investigation of this subject involves the theoretical classroom instruction, analysis of clinical cases and practical training in surgical techniques through collaborative student work on organ complexes. Students rotate through the roles of a surgeon, an assistant surgeon and an operating room nurse, developing proficiency in the use of general and specialized surgical instruments. Additional learning is facilitated through the review of surgical training videos.

Topic 7. Clinical anatomy and operative surgery of the superior mediastinum, pericardium, heart, and lungs.

pr.tr.7 "Clinical anatomy and operative surgery of the superior mediastinum, pericardium, heart, and lungs." (full-time course)

Solving practical problems to clarify the topography of organs, vascular-nervous formations and cellular spaces of the upper mediastinum, ways of pus distribution and methods of their drainage, as well as the principles of surgical access to the lungs, heart, pneumonectomy, lobectomy, segmentectomy, pericardial puncture, mitral puncture, ligation of the open arterial duct, surgery for coarctation of the aorta, coronary artery bypass grafting, mammary-coronary anastomosis, ligation of the internal thoracic artery, balloon coronary angioplasty, stenting of coronary arteries, primary surgical treatment of thoracic wounds. The investigation of this subject involves the theoretical classroom instruction, analysis of clinical cases and practical training in surgical techniques through collaborative student work on organ complexes. Students rotate through the roles of a surgeon, an assistant surgeon and an operating room nurse, developing proficiency in the use of general and specialized surgical instruments. Additional learning is facilitated through the review of surgical training videos.

Topic 8. Clinical anatomy and operative surgery of the posterior mediastinum.

pr.tr.8 "Clinical anatomy and operative surgery of the posterior mediastinum." (full-time course)

Solving practical problems to clarify the topography of organs and vascular-nervous formations of the posterior mediastinum, the principles of anatomical and physiological justification of access to the esophagus, surgery for esophageal damage, esophagoplasty and exposing of the thoracic lymphatic duct. The investigation of this subject involves the theoretical classroom instruction, analysis of clinical cases and practical training in surgical techniques through collaborative student work on organ complexes. Students rotate through the roles of a surgeon, an assistant surgeon and an operating room nurse, developing proficiency in the use of general and specialized surgical instruments. Additional learning is facilitated through the review of surgical training videos.

Topic 9. Clinical anatomy and operative surgery of the anterolateral abdominal wall and peritoneum. Intestinal sutures. Surgical treatment of hollow organs injuries.

pr.tr.9 "Clinical anatomy and operative surgery of the anterolateral abdominal wall and peritoneum. Intestinal sutures. Surgical treatment of hollow organs injuries." (full-time course)

Solving practical problems to clarify the projection of the abdominal cavity on the anterolateral abdominal wall, anatomical and physiological justification of the median, paramedian, trans and pararectal, oblique, transverse and combined incisions, the causes of hernias, as well as the principles of laparotomy, parotid surgery, plastics of the hernia ring for umbilical hernias, hernias of the white line of the abdomen, plastics of the anterior and posterior walls of the inguinal canal. The investigation of this subject involves the theoretical classroom instruction, analysis of clinical cases and practical training in surgical techniques through collaborative student work on organ complexes. Students rotate through the roles of a surgeon, an assistant surgeon and an operating room nurse, developing proficiency in the use of general and specialized surgical instruments. Additional learning is facilitated through the review of surgical training videos.

Topic 10. Clinical anatomy and operative surgery of abdominal organs of upper and lower floor.

pr.tr.10 "Clinical anatomy and operative surgery of abdominal organs of upper and lower floor." (full-time course)

Solving practical problems to clarify the surgical anatomy of the peritoneum, liver, gallbladder, bile ducts, duodenum, pancreas, spleen, as well as the principles of intestinal sutures, audit of abdominal organs, surgical treatment of penetrating abdominal injuries with damage to the cavity cholecystostomy, cholecystectomy, choledochotomy, choledochoduodenostomy, papillosphincterotomy, transduodenal papillosphincteroplasty, splenectomy, autopsy, drainage of subphrenic abscess, hemostasis from liver and mobilization of the duodenum. Solving practical problems to clarify the surgical anatomy of the stomach, small, large intestine, appendix, small bowel wound suturing technique, as well as the principles of revision of the lower abdominal organs, small bowel resection, appendectomy, resection of the stomach, colon and spleen. proximal vagotomy, pyloroplasty, gastrotomy, suturing of perforated gastric ulcer, imposition of unnatural defect, imposition of gastroduodenoanastomosis and gastroenteroanastomosis. The study of this topic contains the development of practical surgical skills through team-based student work and the performance of an appendectomy in the educational operating room.

Topic 11. Clinical anatomy of the lumbar region, column, spinal cord and retroperitoneal space. Surgeries on the column, kidneys and ureters.

pr.tr.11 "Clinical anatomy of the lumbar region, column, spinal cord and retroperitoneal space. Surgeries on the column, kidneys and ureters." (full-time course)

Solving practical problems to clarify the surgical anatomy of the lumbar region, kidneys, adrenal glands, ureters, tissue and vascular-nervous formations of the retroperitoneal space, spine, spinal cord, as well as the principles of spinal puncture, epidural, spinal anesthesia, laminae nephrolithotomy, nephrectomy, kidney resection, ureterolithotomy, pyelolithotomy, operative access to the kidneys, ureters and substantiation of the ways of spreading purulent infusions in the retroperitoneal space. The investigation of this subject involves the theoretical classroom instruction, analysis of clinical cases and practical training in surgical techniques through collaborative student work on organ complexes. Students rotate through the roles of a surgeon, an assistant surgeon and an operating room nurse, developing proficiency in the use of general and specialized surgical instruments. Additional learning is facilitated through the review of surgical training videos.

Topic 12. Clinical anatomy and operative surgery of the pelvis.

pr.tr.12 "Clinical anatomy and operative surgery of the pelvis." (full-time course)

Solving practical problems to clarify the topographic anatomy of the pelvis, bladder, prostate, uterus, rectum, male and female perineum, substantiation of the distribution of pus and urinary incontinence in the cellular spaces of the pelvis, as well as the principles of drainage and cell spaces bladder, suprapubic dissection of the bladder, transvesical adenomectomy, puncture of the abdominal cavity through the posterior vault of the vagina, surgery for ectopic pregnancy, autopsy for paraproctitis, surgery for hemorrhoids, hydrocephalus and varicocele. The investigation of this subject involves the theoretical classroom instruction, analysis of clinical cases and practical training in surgical techniques through collaborative student work on organ complexes. Students rotate through the roles of a surgeon, an assistant surgeon and an operating room nurse, developing proficiency in the use of general and specialized surgical instruments. Additional learning is facilitated through the review of surgical training videos.

Topic 13. Clinical anatomy and operative surgery of the gluteal region, hip joint and thigh.

pr.tr.13 "Clinical anatomy and operative surgery of the gluteal region, hip joint and thigh." (full-time course)

Solving practical tasks to clarify the surgical anatomy of the buttocks, thigh, hip, substantiation of the spread of abscesses from the cellular spaces of the buttocks, symptoms of lesions of the sciatic, femoral, occlusal nerves, weak points of the capsule of the hip joint, paralysis of the hip joint, principles of incisions for opening phlegmon of the buttocks, back of the thigh, exposing blood vessels, sciatic nerves, exposing the sciatic nerve and suturing the nerve, puncture, arthrotomy, resection of the hip joint and methods of plastic hernia gate in femoral hernia. The investigation of this subject involves the theoretical classroom instruction, analysis of clinical cases and practical training in surgical techniques through collaborative student work on organ complexes. Students rotate through the roles of a surgeon, an assistant surgeon and an operating room nurse, developing proficiency in the use of general and specialized surgical instruments. Additional learning is facilitated through the review of surgical training videos.

Topic 14. Clinical anatomy and operative surgery of the knee, knee joint, lower leg, retromalleolar medial region and foot.

pr.tr.14 "Clinical anatomy and operative surgery of the knee, knee joint, lower leg, retromalleolar medial region and foot." (full-time course)

Solving practical problems to clarify the surgical anatomy of the knee, knee joint, topography of synovial bags, anterior, posterior and lateral bone-fibrous lobes of the lower leg, fascial lobes of the sole, substantiation of the distribution of paraarticular phlegmon, nerve symptoms purulent processes in phlegmons of the lower leg, foot and incisions for drainage, as well as the principles of puncture of the knee joint, arthrotomy and resection of the knee joint. The investigation of this subject involves the theoretical classroom instruction, analysis of clinical cases and practical training in surgical techniques through collaborative student work on organ complexes. Students rotate through the roles of a surgeon, an assistant surgeon and an operating room nurse, developing proficiency in the use of general and specialized surgical instruments. Additional learning is facilitated through the review of surgical training videos.

Topic 15. Clinical anatomy and operative surgery of the scapular region, axillary region, deltoid region, arm region and shoulder joint.

pr.tr.15 "Clinical anatomy and operative surgery of the scapular region, axillary region, deltoid region, arm region and shoulder joint." (full-time course)

Solving practical problems to clarify the surgical anatomy of the scapular, deltoid, axillary, shoulder joint, shoulder area, substantiation of the spread of purulent-inflammatory processes of the scapular, deltoid areas, axillary fossa, paraarticular phlegmon and supraglottionia supraspinatus fibrotic beds, prescapular fissures, subdeltoid tissue space, puncture, arthrotomy, resection of the shoulder joint, exposure of vascular and nervous formations of the axilla and shoulder. The investigation of this subject involves the theoretical classroom instruction, analysis of clinical cases and practical training in surgical techniques through collaborative student work on organ complexes. Students rotate through the roles of a surgeon, an assistant surgeon and an operating room nurse, developing proficiency in the use of general and specialized surgical instruments. Additional learning is facilitated through the review of surgical training videos.

Topic 16. Clinical anatomy and operative surgery of the regions of elbow, forearm, wrist and hand.

pr.tr.16 "Clinical anatomy and operative surgery of the regions of elbow, forearm, wrist and hand." (full-time course)

Solving practical tasks to clarify the surgical anatomy of the elbow fossa, elbow joint, forearm, wrist, hand, canals, synovial sheaths, bags of flexor tendons, extensors of the hand and fingers, arteries of the extremities, substantiation of collateral blood circulation after blood circulation vessels, the spread of inflammatory processes in phlegmons of the forearm, hand and incisions for their drainage, symptoms of damage to the median, ulnar, radial nerves, as well as the principles of puncture, arthrotomy, resection of the elbow, treatment of various forms of panaritium, conduction block of the median and elbow, elbow, anesthesia according to Lukashovich-Oberst, Brown-Usoltseva. The investigation of this subject involves the theoretical classroom instruction, analysis of clinical cases and practical training in surgical techniques through collaborative student work on organ complexes. Students rotate through the roles of a surgeon, an assistant surgeon and an operating room nurse, developing proficiency in the use of general and specialized surgical instruments. Additional learning is facilitated through the review of surgical training videos.

Topic 17. Vessels operations. Amputations and disarticulations.

pr.tr.17 "Vessels operations. Amputations and disarticulations." (full-time course)

Solving practical tasks to substantiation of collateral blood circulation after blood circulation vessels, exposure and ligation of arteries of extremities, imposition of a vascular suture, operative treatment at varicose veins of the lower extremities. The investigation of this subject involves the theoretical classroom instruction, analysis of clinical cases and practical training in surgical techniques through collaborative student work on organ complexes. Students rotate through the roles of a surgeon, an assistant surgeon and an operating room nurse, developing proficiency in the use of general and specialized surgical instruments. Additional learning is facilitated through the review of surgical training videos.

Topic 18. Graded Credit

pr.tr.18 "Graded Credit" (full-time course)

Evaluation of students' knowledge and practical skills is carried out through a graded credit in accordance with the current academic regulations.

9. Teaching methods

9.1 Teaching methods

Course involves learning through:

TM1	Case-based learning
TM2	Team Based Learning
TM3	Research Based Learning
TM4	Self-study
TM5	Practical training

The discipline is taught using modern educational approaches, including Case-Based Learning (CBL), Team-Based Learning (TBL) and Research-Based Learning (RBL), which promote the development of professional competencies and critical thinking skills.

9.2 Learning activities

LA1	Preparation for practical classes
LA2	Analysis and discussion of case-based learning (educational, practical, and research-based)
LA3	Completion of group practical assignment
LA4	Preparation for the differentiated assessment
LA5	E-learning through digital platforms (Zoom, Meet, Mix SumDU)
LA6	Individual research project (a student research work, a scientific article, a conference abstract, etc.)
LA7	Study of textbooks and relevant information sources

10. Methods and criteria for assessment

10.1. Assessment criteria

Definition	National scale	Rating scale
Outstanding performance without errors	5 (Excellent)	$170 \leq RD \leq 200$
Above the average standard but with minor errors	4 (Good)	$164 \leq RD < 169$
	4 (Good)	$140 \leq RD < 163$
Fair but with significant shortcomings	3 (Satisfactory)	$127 \leq RD < 139$
	3 (Satisfactory)	$120 \leq RD < 126$
Fail – some more work required before the credit can be awarded	2 (Fail)	$70 \leq RD < 119$
	2 (Fail)	$0 \leq RD < 69$

10.2 Formative assessment

	Description	Deadline, weeks	Feedback
FA1 Peer assessment	A collaborative assessment method aimed at improving learning outcomes through comparison of a student's current level of achievement with previous performance indicators. It provides an opportunity for students to analyse and reflect upon their own learning activities.	Throughout the entire course.	Adjustment of teaching and learning approaches in cooperation with students, taking into account the assessment results.

FA2 Tests (Automated Tests) for Monitoring Students' Academic Achievement	An effective method of assessing the level of knowledge, skills and competencies acquired in each topic of the course. Testing enables evaluation of students' mastery of the learning material in each subject area.	Throughout the entire course.	The student must provide at least 60% correct answers.
FA3 Teacher Consultation During the Preparation of an Individual Research Project (Conference Presentations, Participation in Research Competitions)	Student research activity constitutes an essential component of the professional training of future healthcare professionals. Engagement in research promotes the development of a scientific outlook, critical thinking, diligence, initiative and other professional competencies.	Throughout the entire course.	Oral comments provided by the teacher. Additional incentive points (5–10 points) may be awarded depending on the type and scope of the research project.
FA4 Teacher Guidance During Practical Training	Teacher guidance facilitates the pedagogical supervision of students' professional activities during practical training. Its effectiveness is determined by adherence to all stages of practical task performance. The successful development of practical skills and abilities depends on the level of practical competence achieved by the student.	Throughout the entire course.	Individual consultation on the layer-by-layer anatomy of human body regions and the techniques of surgical procedures.
FA5 Assessment of Theoretical Knowledge	Assessment of theoretical knowledge acquired within the discipline. Evaluation is conducted during each practical class in accordance with the specific learning objectives of each topic and is based on a comprehensive appraisal of student performance, including the level of theoretical preparation and completion of independent work in accordance with the thematic plan.	Throughout the entire course.	Feedback is directed toward supporting students' independent learning activities, identifying knowledge gaps, and assessing the level of acquired theoretical competence.

FA6 Clinical Anatomy Case Solving	The case-based learning method contributes to the development of competencies required for future professional practice. It fosters clinical reasoning, analytical thinking, independent decision-making, communicative competence, and the ability to process and critically analyses large volumes of information.	Throughout the entire course.	Assessment of the student's ability to demonstrate clinical reasoning, substantiate decisions, clearly articulate ideas, and apply theoretical knowledge, as reflected in the final grade.
FA7 Oral Questioning and Instructor Feedback	This approach enables the evaluation of students' acquired learning experience in relation to defined educational objectives, identification of factors influencing learning outcomes, analysis of learning difficulties, monitoring of progress in competency development, and forecasting of further learning outcomes.	Throughout the entire course.	Based on analysed learning data, the final grade is determined as an indicator of the student's academic achievement.

10.3 Summative assessment

	Description	Deadline, weeks	Feedback
SA1 Graded Credit	The graded credit is a practice-oriented form of final assessment. All enrolled students are admitted to the examination.	In accordance with the established academic schedule.	The assessment evaluates the level of achievement of the intended learning outcomes and practical competencies acquired during the course. The maximum possible score for the graded credit is 80 points, while the minimum passing threshold is 48

SA2 Continuous Assessment of Theoretical and Practical Training	Continuous assessment of theoretical and practical training is carried out through oral examination, clinical case analysis, ongoing computer-based testing, and group practical tasks involving the acquisition of surgical skills on organ complexes, as well as the description of the layered anatomy of human body regions. Students engaged in research activities may present the results of their scientific work at conferences, student research competitions with the possibility of additional credit	Throughout the entire course.	Assessment is conducted during each practical class. The results of all forms of learning activity are integrated into a comprehensive evaluation of student performance for each class session in accordance with the established grading system.
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Form of assessment:

		Points	Можливість перескладання з метою підвищення оцінки
The first semester of teaching		200 scores	
SA1. Graded Credit		80	
	Assessment includes oral and written responses to theoretical and practical questions	60	No
	Computer-based testing.	20	No
SA2. Continuous Assessment of Theoretical and Practical Training		120	
	Assessment includes oral interviews, solving clinical cases in the field of clinical anatomy and describing the layered structure of areas of the human body and performing surgical techniques on organ complexes, as well as computer-based testing.	120	No

Retaking for grade improvement is not permitted. During the study of the discipline, each practical class is assessed on a scale of up to 5 points, with performance evaluation according to the traditional four-point grading system. At the end of the academic year, the student's overall performance is calculated as an arithmetic mean of all obtained results. The final grade is converted into points according to the credit-modular system distribution table. The maximum number of points for continuous assessment is 120. All students are admitted to the graded credit examination. The differentiated credit is conducted in accordance with the academic timetable at the final practical class. Students complete a computer-based test designed to assess learning outcomes throughout the course and determine the level of knowledge at the end of the discipline. The maximum score for the test is 20 points, while the minimum passing score is 12 points.

Examination tickets for the graded credit include three theoretical and practical questions covering different topics and all sections of the discipline. Each question is valued at 20 points. The graded credit is considered successfully completed if the student obtains not less than 48 out of 80 points. Additional incentive points are awarded for participation in individual research activities, including: the defense of a student scientific project (10 points), the presentation at conferences, the publication of abstracts or poster presentations (5 points). The total score for the discipline will not exceed 200 points. Re-crediting of results obtained through non-formal education is permitted in accordance with the applicable institutional regulations.

11. Learning resources

11.1 Material and technical support

MTS1	Organ complexes, anatomical models
MTS2	Surgical instruments
MTS3	Computers, computer systems and networks
MTS4	Multimedia projectors
MTS5	CD players
MTS6	Educational tables
MTS7	Library resources and collections
MTS8	Anatomical models of individual organs
MTS9	Medical facilities and equipment (educational operating theatre)
MTS10	Software (MIX SumDU for distance learning support)
MTS11	Mobile multimedia complex "ONIKO"

11.2 Information and methodical support

Essential Reading	
1	Korenkov, O. V. Topographic Anatomy of the Head [Текст] : study guide / O. V. Korenkov, G. F. Tkach, O. S. Yarmolenko. — 2nd ed., revised, expanded. — Sumy : Sumy State University, 2026. — 129 p.
2	Неттер, Ф. Г. Netter Atlas of Human Anatomy : Classic Regional Approach / Ф. Г. Неттер ; пер. з англ. С. Антонюк-Кириченко. — пер. 8-го англ. вид. — Київ : Медицина, 2024. — 719 с.
3	Клінічна анатомія та оперативна хірургія [Текст] : підручник. Т.2 / В. І. Півторак, О. Б. Кобзар, С. М. Білаш та ін. ; за ред.: В. І. Півторака, О. Б. Кобзаря. — Вінниця : Нова Книга, 2025. — 656 с.
4	Клінічна анатомія [Текст] : підручник / С. М. Білаш, М. М. Коптев, О. М. Проніна та ін. — Одеса : ОЛДІ-ПЛЮС, 2025. — 368 с.

5	Клінічна анатомія і оперативна хірургія з особливостями дитячого віку [Текст] : підручник / С. М. Білаш, І. В. Ксьонз, М. М. Коптев та ін. — Одеса : ОЛДІ-ПЛЮС, 2023. — 444 с.
Supplemental Reading	
1	Clinical Anatomy and Operative Surgery [Текст] : textbook / O. M. Slobodian, V. Yu. Yershov, H. Ya. Kostiuk, V. I. Pivtorak ; ed. V.Yu. Yershov. — K. : Medicine Publishing, 2018. — 504 p.
2	Korenkov, O. V. 4899 Methodical instructions for practical lessons on the topic "Clinical Anatomy and Operative Surgery of the Abdomen and Pelvis" on the discipline "Clinical Anatomy and Operative Surgery" [Текст] : for students of speciality 222 "Medicine" full-time form of education / O. V. Korenkov, G. F. Tkach. — Sumy : Sumy State University, 2020. — 149 p.
3	Korenkov, O. V. 5013 Methodical instructions for practical lessons on the topic "Clinical Anatomy and Operative Surgery of the Lower and Upper Limbs" on the discipline "Clinical Anatomy and Operative Surgery" [Текст] : or students of speciality 222 "Medicine" full-time form of education / O. V. Korenkov, G. F. Tkach. — Sumy : Sumy State University, 2021. — 139 p.
3	Korenkov, O. V. 5717 Methodical instructions for practical lessons on the topic "Clinical Anatomy and Operative Surgery of the Head, Neck, and Chest" in the discipline "Clinical Anatomy and Operative Surgery" [Електронний ресурс] : for students of speciality 222 "Medicine" full-time form of education / O. V. Korenkov, T. V. Ryabenko. — Sumy : Sumy State University, 2023. — 195 p.
4	Korenkov, O.V. Topographical anatomy of the chest [Текст] : study guide / O. V. Korenkov, G. F. Tkach. — Sumy : Sumy State University, 2018. — 129 p.
5	Korenkov, O.V. Topographical anatomy of the neck [Текст] : study guide / O. V. Korenkov, G. F. Tkach. — Sumy : Sumy State University, 2017. — 102 p.
6	Moore, K.L. Clinically Oriented Anatomy [Текст] : textbook / K. L. Moore, A. F. Dalley, A. M. R. Agur. — eighth edition. — Philadelphia : Wolters Kluwer, 2018. — 1153 p.
7	Tsyhykalo, O. Clinical Anatomy and Operative Surgery [Текст] = Клінічна анатомія і оперативна хірургія : textbook / O. V. Tsyhykalo. — Vinnytsia : Nova Knyha, 2020. — 528 p.
8	Korenkov O.V., Sukhodub L.B, Kumeda M.O, Sukhodub L.F. Assessment of Healing Potential of Alginate and Chitosan-Based Biomaterials for Cranial Bone Defects in Experimental Model. BioMed Research International. 2026. ID 3257416 https://doi.org/10.1155/bmri/3257416
Web-based and electronic resources	
1	Korenkov O. V., Tkach G. F. Yarmolenko O. S. Topographic anatomy of the head : study guide — URL https://anatomy.med.sumdu.edu.ua/wp-content/uploads/2026/03/Topographic-Anatomy-of-the-Head.pdf

2	Korenkov O. V., Tkach G. F. Topographic anatomy of the neck : study guide – URL https://essuir.sumdu.edu.ua/bitstream-download/123456789/60166/1/Korenkov_topographical.pdf
3	Korenkov O. V., Tkach G. F. Topographic anatomy of the chest : study guide – URL https://essuir.sumdu.edu.ua/bitstream-download/123456789/69817/1/Korenkov_Topographic_Anatomy.pdf
4	Korenkov, O. V. 4899 Methodical instructions for practical lessons on the topic "Clinical Anatomy and Operative Surgery of the Abdomen and Pelvis" Medicine" full-time form of education URL https://anatomy.med.sumdu.edu.ua/wp-content/uploads/2021/11/operative-surgery-CAOS-abdomen-EN.pdf
5	Korenkov, O. V. 5013 Methodical instructions for practical lessons on the topic "Clinical Anatomy and Operative Surgery of the Lower and Upper Limbs" Medicine" full-time form of education URL https://anatomy.med.sumdu.edu.ua/wp-content/uploads/2021/11/operative-surgery-CAOS-lower-EN.pdf
6	Korenkov O. V. 5717 Methodical instructions for practical lessons on the topic "Clinical Anatomy and Operative Surgery of the Head, Neck, and Chest" Medicine" full-time form of education URL https://anatomy.med.sumdu.edu.ua/wp-content/uploads/2024/09/CAOS-OF-THE-HEAD-NECK-AND-CHEST.pdf