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	Medical Institute. Department of Morphology
Author(s)	Korenkov Oleksii Volodymyrovych, Tkach Hennadii Fedorovych, Pernakov Mykola Stanislavovych
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
Semester	18 тижнів протягом 3-го семестру (або 4-го семестру)
Workload	Обсяг становить 5 кредитів ЄКТС, 150 годин, з яких 36 годин практичні заняття, 114 годин самостійна робота студента
Language(s)	English

2. Place in the study programme

Relation to curriculum	Elective course available for study programme "Medicine"
Prerequisites	Necessary knowledge of normal human anatomy
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 Surgical instruments, sutures and dressings. Primary surgical treatment of penetrating and non-penetrating injuries of the cerebral part of the head. Surgical anatomy of the inner base of the skull.

Principles of acquisition of sets of tools for operating rooms and their use. Skills of processing and isolation of the operating field and local infiltration anesthesia. Technique of layer-by-layer dissection, soft tissue connection, temporary and permanent hemostasis in the wound, technique of knitting knots. Surgical anatomy of the fronto-parieto-occipital area: boundaries, features of the layered structure. Stages of primary surgical treatment of brain injuries. The technique of hemostasis from the vessels of the subcutaneous tissue, skull bones, meninges and venous sinuses. Surgical anatomy of the inner base of the skull, meninges, intershell spaces and cerebrospinal fluid pathways. Substantiation of the clinic of fractures of the skull base.

Topic 2 Clinical anatomy of the temporal area and the area of the mastoid process. Anthrotomy, bone-plastic and decompression trepanation of the skull.

Layered structure of the temporal area and the area of the mastoid process. Cranio-cerebral topography. Technique of anthrotomy, bone-plastic and decompression trepanation of the skull.

Topic 3 Clinical anatomy of the lateral part of the face. Anesthesia of the trigeminal nerve branches. Operations for chronic frontitis and sinusitis.

Features of blood supply and venous outflow of the lateral part of the face. Topography of the parotid gland and branches of the facial nerve. Incisions in purulent mumps. Topical diagnosis of facial nerve injuries. Substantiation of ways of distribution of purulent inflammatory processes on the face. Extraoral anesthesia of the maxillary and mandibular nerves. Techniques of operations for chronic frontitis and sinusitis.

Topic 4 Borders, fascias, fatty spaces of the neck, division into triangles. Topographic anatomy of submandibular and carotid triangles of the neck.

Layered structure of submandibular and carotid triangles of the neck. Surgical anatomy of the submandibular salivary gland. Substantiation and performance on the physical body of the most rational incisions for drainage of phlegmons and abscesses of the neck.

Topic 5 Clinical anatomy of the sternocleidomastoid area and the lateral triangle of the neck. Vago-sympathetic blockade by Vyshnevsky. Surgical interventions on the neck organs.

Surgical access to the organs of the neck, vascular-nervous bundle and thoracic lymphatic duct. Vago-sympathetic blockade according to Vishnevsky. Anesthesia of the cervical and brachial plexuses. Surgical treatment of the syndrome of compression of the vascular-nervous bundle of the interstitial space. Tracheotomy and conicotomy. Surgical treatment of diffuse and nodular goiter. Access to the cervical part of the esophagus and suturing of its wound. Exposing of the common and external carotid arteries. Stages of carotid thrombendarterectomy.

Topic 6 Surgical anatomy of the subclavian area, breast, chest wall, pleura and diaphragm. Puncture of the pleural cavity. Primary surgical treatment of penetrating chest wall injuries.

Puncture and catheterization of the subclavian vein. Syntopy of the subclavian artery. Incisions for purulent mastitis. Surgical treatment of benign and malignant breast tumors. Incisions for drainage of subpectoral phlegmon. Puncture of the pleural cavity. Rib resection. Primary surgical treatment of penetrating chest wall injuries. Nissen fundoplication. Mammary coronary anastomosis. Blockade of intercostal nerves.

Topic 7 The mediastinum and its departments. Surgical anatomy of the lungs. Heart and pericardial surgery.

Topography of organs and vascular-nervous formations of the upper mediastinum. Cellular spaces of the mediastinum, ways of manure distribution and methods of their drainage. Surgical access to the lungs and heart. Pneumonectomy, lobectomy and segmentectomy. Pericardial puncture. Primary surgical treatment of chest wounds with heart damage. Mitral commissurotomy, ligation of the open ductus arteriosus, surgery for coarctation of the aorta. Surgical treatment of coronary heart disease (coronary artery bypass grafting, mammary-coronary anastomosis, ligation of the internal thoracic artery, balloon coronary angioplasty, coronary artery stenting).

Topic 8 Surgical anatomy of the posterior mediastinum. Esophageal surgery.

Topography of organs and vascular-nervous formations of the posterior mediastinum. Anatomical and physiological justification of access to the esophagus at different levels. Surgical interventions for esophageal damage. Stages of esophagoplasty. Exposing of the thoracic lymphatic duct.

Topic 9 Surgical anatomy of the anterolateral abdominal wall. Surgical treatment of umbilical hernias and hernias of the white line of the abdomen. Surgical anatomy and surgical treatment of inguinal hernias.

Projection of abdominal organs on the anterolateral wall of the abdomen. Laparotomy technique and anatomical and physiological substantiation of median, paramedian, trans- and pararectal, oblique, transverse and combined incisions. Principles of surgical interventions and methods of plastic hernia ring for umbilical hernias and hernias of the white line of the abdomen. Causes of oblique and direct inguinal hernias. Plastic surgery of the anterior and posterior walls of the inguinal canal. Technique of operations for pinched inguinal hernias.

Topic 10 Clinical anatomy and operative surgery of the peritoneum and organs of the upper abdominal cavity.

Methods of revision of abdominal organs. Technique of surgical treatment of penetrating abdominal injuries with damage to hollow organs. Imposition of intestinal sutures. Surgical anatomy of the liver, gallbladder, bile ducts, duodenum, pancreas and spleen. Technique of cholecystostomy, cholecystectomy, choledochotomy, choledochoduodenostomy, papillosphincterotomy and transduodenal papillosphincteroplasty. Surgical access to the pancreas. Splenectomy technique. Dissection and drainage of subphrenic abscess by extrapleural transthoracic access according to Melnikov. Liver haemostasis. Kocher's mobilization of a duodenum.

Topic 11 Clinical anatomy and operative surgery of the stomach and lower abdominal organs.

Surgical anatomy of the stomach, small and large intestine. Revision of the organs of the lower floor of the abdominal cavity. Suturing of a wound of a small intestine. Resection of the small intestine with the imposition of entero-entero anastomosis,type by side by side and end to end. Appendectomy. Imposition of unnatural waste. Gastrotomy. Imposition of tubular and labial stoma. Imposition of gastro-entero anastomosis by Welfler, Hacker-Petersen and Roux. Gastric resection by Billroth I and Billroth II in the Hofmeister-Finsterer modification. Truncal, selective and selective proximal vagotomy. Pyloroplasty by Heineke-Mikulich and Finney. Imposition of gastroduo-denoanal astomosis according to Zhabula. Technique of suturing perforated gastric ulcer.

Topic 12 Clinical anatomy of the lumbar region, spine, spinal cord and retroperitoneal space. Operations on the spine, kidneys and ureters.

Layered structure of the lumbar region, anatomical and functional features of the spine and spinal cord. Spinal puncture, epidural and spinal anesthesia. Laminectomy technique. Layered structure of retroperitoneal spaces. To substantiate the ways of spreading purulent inflows in the retroperitoneal space. Surgical anatomy of the kidneys, adrenal glands, ureters and vascular-nervous formations of the retroperitoneal space. Operational access to the kidneys and ureters. Anatomical and physiological substantiation and technique of paranephric blockade. Technique of nephrolithotomy, nephrectomy, kidney resection, ureterolithotomy, pyelolithotomy.

Topic 13 Clinical anatomy and operative surgery of the pelvis.

Topographic anatomy of the pelvis. Surgical anatomy of the bladder, prostate, uterus, rectum, male and female perineum. Substantiation of ways of distribution of pus and urinary infusions on fatty spaces of a pelvis. Methods of drainage of pelvic tissue spaces. Bladder puncture. Suprapubic dissection of the bladder and imposition of bladder stoma. Transvesical adenomectomy. Puncture of the abdominal cavity through the posterior vault of the vagina. Operations for ectopic pregnancy. Autopsy in paraproctitis. Technique of surgery for hemorrhoids, hydrocephalus and varicocele.

Topic 14 Clinical anatomy and operative surgery of the glutea, hip and thigh regions.

Substantiation of ways of distribution of abscesses from fatty spaces of the glutea. Incisions for opening phlegmon of the buttocks and back area of the thigh. Exposing of blood vessels and nerves of the buttocks. Substantiation of symptoms of sciatic nerve damage. Exposing the sciatic nerve and suturing the nerve. Weaknesses of a capsule of a hip joint and ways of distribution of paraarticular phlegmons of the coccyx. Hip joint puncture. Arthrotomy and resections of the hip joint. Exposing of vascular and nervous formations in the upper, middle and lower thirds of the thigh. Methods of plastic hernia ring in femoral hernia. Substantiation of symptoms of damage to the femoral and sciatic nerves.

Topic 15 Surgical anatomy and operative surgery of the knee, knee joint, shin, ankle and foot.

Ways of spreading paraarticular phlegmon. Puncture of the knee joint. Technique of arthrotomy and resection of the knee joint. Substantiation of symptoms of damage of tibial, common tibial nerves, ways of distribution of purulent processes at phlegmons of a shin, ankle, foot and cuts for their drainage.

Topic 16 Clinical anatomy and operative surgery of the scapular, axillary, deltoid areas, shoulder area and shoulder joint.

Topographic and anatomical substantiation of ways of distribution of purulent-inflammatory processes of scapular and deltoid areas. Technique of opening and drainage of bone fibrous beds, prescapular fissures and subdeltoid tissue space. Substantiation of ways of distribution of paraarticular phlegmons at purulent omarthritis. Mastering the technique of puncture, arthrotomy and resection of the shoulder joint. Substantiation of ways of distribution of purulent processes of an axillary fossa and cuts for their drainage. Exposing of the vascular-nervous bundles of the axillary area and the shoulder area.

Topic 17 Clinical anatomy and operative surgery of the elbow, forearm, wrist and hand. Vascular surgery. Amputations and disarticulations. Puncture, arthrotomy and resection of the elbow joint. Symptoms of damage to the median, ulnar and radial nerves. Substantiation of ways of distribution of inflammatory processes at phlegmons of a forearm and cuts for their drainage. Treatment of various forms of panaritium. Substantiation of ways of distribution of purulent inflammatory processes and incisions for their drainage at phlegmons of a hand. Topographic and anatomical substantiation of functional and sensory disorders in case of damage to the main nerve trunks of the upper extremity. Conductive blockade of the median, ulnar and radial nerves. Conductive anesthesia according to Lukashevich-Oberst and according to Brown-Usoltseva. Exposing and ligation of the arteries of the extremities. Substantiation of collateral circulation pathways after ligation of main vessels. Vascular suture technique. Methods of surgical treatment of varicose veins of the lower extremities.
Topic 18 Differentiated test in the discipline "Clinical Anatomy and Operative Surgery" Answering the questions, students on the physical body demonstrate applied aspects of clinical anatomy, techniques of surgical interventions, knowledge of surgical instruments and the ability to use them.

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	Demonstrate communication in a dialogue with colleagues and the target audience, the introduction of professional scientific discussion, to reflect in writing and present the results of their research
LO4	Demonstrate communication in a dialogue with colleagues and the target audience, the introduction of professional scientific discussion, to reflect in writing and present the results of their research
LO5	Use information technology, acquired knowledge, skills and abilities to solve various problems and tasks in the field of medicine
LO6	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

7. Teaching and learning activities

7.1 Types of training

Topic 1. Surgical instruments, sutures and dressings. Primary surgical treatment of penetrating and non-penetrating injuries of the cerebral part of the head. Surgical anatomy of the inner base of the skull.

pr.tr.1 "Surgical instruments, sutures and dressings. Primary surgical treatment of penetrating and non-penetrating injuries of the cerebral part of the head. Surgical anatomy of the inner base of the skull." (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.

Topic 2. Clinical anatomy of the temporal area and the area of the mastoid process. Anthrotomy, bone-plastic and decompression trepanation of the skull.

pr.tr.2 "Clinical anatomy of the temporal area and the area of the mastoid process. Arthrotomy, bone-plastic and decompression trepanation of the skull." (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.

Topic 3. Clinical anatomy of the lateral part of the face. Anesthesia of the trigeminal nerve branches. Operations for chronic frontitis and sinusitis.

pr.tr.3 "Clinical anatomy of the lateral part of the face. Anesthesia of the trigeminal nerve branches. Operations for chronic frontitis and sinusitis." (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.

Topic 4. Borders, fascias, fatty spaces of the neck, division into triangles. Topographic anatomy of submandibular and carotid triangles of the neck.

pr.tr.4 "Borders, fascia, cellular spaces of the neck, division into triangles. Topographic anatomy of 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.

Topic 5. Clinical anatomy of the sternocleidomastoid area and the lateral triangle of the neck. Vago-sympathetic blockade by Vyshnevsky. Surgical interventions on the neck organs.

pr.tr.5 "Clinical anatomy of the sternocleidomastoid area and the lateral triangle of the neck. Vago-sympathetic blockade by Vyshnevsky. Surgical interventions on the neck organs." (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.

Topic 6. Surgical anatomy of the subclavian area, breast, chest wall, pleura and diaphragm. Puncture of the pleural cavity. Primary surgical treatment of penetrating chest wall injuries.

pr.tr.6 "Surgical anatomy of the subclavian area, breast, chest wall, pleura and diaphragm. Puncture of the pleural cavity. Primary surgical treatment of penetrating chest wall injuries." (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.

Topic 7. The mediastinum and its departments. Surgical anatomy of the lungs. Heart and pericardial surgery.

pr.tr.7 "The mediastinum and its departments. Surgical anatomy of the lungs. Heart and pericardial surgery." (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, segmenttectomy, 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.

Topic 8. Surgical anatomy of the posterior mediastinum. Esophageal surgery.

pr.tr.8 "Surgical anatomy of the posterior mediastinum. Esophageal surgery." (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.

Topic 9. Surgical anatomy of the anterolateral abdominal wall. Surgical treatment of umbilical hernias and hernias of the white line of the abdomen. Surgical anatomy and surgical treatment of inguinal hernias.

pr.tr.9 "Surgical anatomy of the anterolateral abdominal wall. Surgical treatment of umbilical hernias and hernias of the white line of the abdomen. Surgical anatomy and surgical treatment of inguinal hernias." (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.

Topic 10. Clinical anatomy and operative surgery of the peritoneum and organs of the upper abdominal cavity.

pr.tr.10 "Clinical anatomy and operative surgery of the peritoneum and organs of the upper abdominal cavity." (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.

Topic 11. Clinical anatomy and operative surgery of the stomach and lower abdominal organs.

pr.tr.11 "Clinical anatomy and operative surgery of the stomach and lower abdominal organs." (full-time course)

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.

Topic 12. Clinical anatomy of the lumbar region, spine, spinal cord and retroperitoneal space. Operations on the spine, kidneys and ureters.

pr.tr.12 "Clinical anatomy of the lumbar region, spine, spinal cord and retroperitoneal space. Operations on the spine, 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.

Topic 13. Clinical anatomy and operative surgery of the pelvis.

pr.tr.13 "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.

Topic 14. Clinical anatomy and operative surgery of the glutea, hip and thigh regions.

pr.tr.14 "Clinical anatomy and operative surgery of the buttocks, hip 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.

Topic 15. Surgical anatomy and operative surgery of the knee, knee joint, shin, ankle and foot.

pr.tr.15 "Surgical anatomy and operative surgery of the knee, knee joint, shin, ankle 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.

Topic 16. Clinical anatomy and operative surgery of the scapular, axillary, deltoid areas, shoulder area and shoulder joint.

pr.tr.16 "Clinical anatomy and operative surgery of the scapular, axillary, deltoid areas, shoulder area 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 supraglottonia 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.

Topic 17. Clinical anatomy and operative surgery of the elbow, forearm, wrist and hand. Vascular surgery. Amputations and disarticulations.

pr.tr.17 "Clinical anatomy and operative surgery of the elbow, forearm, wrist and hand. Vascular surgery. Amputations and disarticulations." (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 Lukashevich-Oberst, Brown-Usoltseva, exposure and ligation of arteries of extremities, imposition of a vascular suture, operative treatment at varicose veins of the lower extremities.
Topic 18. Differentiated test in the discipline "Clinical Anatomy and Operative Surgery"
pr.tr.18 "Differentiated test in the discipline "Clinical Anatomy and Operative Surgery"" (full-time course) Solving practical problems to establish the student's ability to demonstrate on the physical body applied aspects of clinical anatomy, techniques of surgical interventions, knowledge of surgical instruments and the ability to use them.

7.2 Learning activities

LA1	Classroom work
LA2	Computer testing
LA3	Preparation and participation in discussions on the subject of the discipline
LA4	Preparation of presentations
LA5	Study of the layered structure of human body parts
LA6	Testing the technique of surgical operations on the physical body of man
LA7	Carrying out of surgical operation on an animal

8. Teaching methods

Course involves learning through:

TM1	Practical training
TM2	Problem-oriented learning
TM3	Interactive forms of conducting classes: brainstorming, active involvement of students in the discussion, training, round table, case method, using a multimedia projector / interactive whiteboard / handouts

TM4	Methods of verbal transmission and auditory perception of educational information (conversations, stories, explanations, discussions), methods of visual transmission and visual perception of educational information (display and demonstration of anatomical objects, tables, diagrams, slides, videos, movies, study of literary sources educational information, the use of visual aids), methods of transmitting educational information through practical, labor actions and tactile, kinostatic perception (training tasks on biological material, layer-by-layer preparation of human body parts, training and creative exercises, animal experiment, biological and computer computer modeling);
TM5	Information and receptive methods (demonstrations of anatomical objects or their images in different versions (from drawing to video and film materials), stories of the teacher or the use of audio, showing the operation or its implementation to students according to instructions), reproductive methods (analysis, synthesis, abstraction) , generalization, classification, recognition, comparison, examination of the anatomical area or organ, implementation of instrumental methods of diagnosis and surgical treatment), research and partial search methods (problem-based learning method, business games, experimental operations).
TM6	Independent training, work in small groups (surgeon, assistant, operating room nurse, anesthesiologist) during the training operation. Development of skills of independent learning, fast critical reading, synthesis and analytical thinking.

Ability to establish a preliminary and clinical diagnosis of the disease. Ability to determine the principles and nature of disease treatment and medical manipulations.

1. Ability to abstract thinking, analysis and synthesis. 2. Ability to learn, master modern knowledge and apply them in practical situations. 3. Knowledge and understanding of the subject area and understanding of professional activity. 4. Ability to adapt and act in a new situation. 5. Ability to make informed decisions; work in a team; interpersonal skills. 7. Ability to use information and communication technologies 8. Definiteness and persistence in terms of tasks and responsibilities.

9. Methods and criteria for assessment

9.1. Assessment criteria

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

9.2 Formative assessment

FA1	Oral comments and instructions of teachers in the learning process
FA2	Formation of self-assessment skills
FA3	Involvement of applicants in evaluating each other's work

FA5	Computer testing

9.3 Summative assessment

SA1	Evaluation of current work
SA2	Final control: differentiated test

Form of assessment:

3 semester		**200 scores**
SA1. Evaluation of current work		**120**
		120
SA2. Final control: differentiated test		**80**
	Computer testing	20
	Oral answer to the question	60

Form of assessment (special cases):

3 semester		**200 scores**
SA1. Evaluation of current work		**120**
		120
SA2. Final control: differentiated test		**80**
	Computer testing	20
	Oral answer to the question	60

Evaluation of current work, differentiated credit

10. Learning resources

10.1 Material and technical support

MTS1	The physical body of man
MTS2	Surgical instruments
MTS3	Computers, computer systems and networks
MTS4	Multimedia projectors
MTS5	CD players
MTS6	Training tables
MTS7	Library funds
MTS8	Models and models (individual bodies)
MTS9	Medical facilities / premises and equipment (training operating room)
MTS10	Software (MIX SumDU to support distance learning)

10.2 Information and methodical support

Essential Reading	
1	Tsyhykalo O. V. Topographical Anatomy and Operative Surgery: textbook for foreign English-speaking students / O. V. Tsyhykalo. – Vinnytsia : Nova Knyha Publishers, 2017. – 528 p.
2	Hansen J. T. Netter's Clinical Anatomy 4th Edition – Rochester, New York : Elsevier, 2018. – 608 p.
3	Moore K. L. Clinically Oriented Anatomy 8th edition / K. L. Moore, A. F. Dalley, A. M. R. Agur. – Philadelphia, USA : Lippincott, Williams and Wilkins, 2017. – 2788 p.
4	Seagal Z. M.Topographical and Pathotopographical Medical Atlas of the Chest, Abdomen, Lumbar Region, and Retroperitoneal Space – Hoboken, New Jersey and Beverly, Massachusetts,USA:John Wiley and Sons, Inc. and Scrivener Publishing LLC, 2018. – 192 p.
5	Brennan P. Gray's Surgical Anatomy / P. Brennan, S. Standring, S. Wiseman. – Seattle, Washington, USA : Elsevier, 2020. – 672 p.
Supplemental Reading	
1	Khatri V. P. Atlas of Advanced Operative Surgery / V. P. Khatri. – Philadelphia, USA : Saunders Elsevier, 2012. – 816 p.
2	Rosen M. J. Atlas of Abdominal Wall Reconstruction 2nd Edition / M. J. Rosen. – Cleveland, Ohio, USA: Elsevier, 2016. – 480 p.
3	Korenkov O. V. Topographic anatomy of the head : study guide / O. V. Korenkov, G. F. Tkach. – Sumy : Sumy State University, 2016. – 81 p.
4	Korenkov O. V. Topographical anatomy of the neck : study guide / O. V. Korenkov, G. F. Tkach. – Sumy : Sumy State University, 2017. – 102 p.
5	Korenkov O. V. Topographical anatomy of the chest : study guide / O. V. Korenkov, G. F. Tkach. – Sumy : Sumy State University, 2018. – 129 p.
6	Methodical instructions for practical lessons on the topic "Clinical Anatomy and Operative Surgery of the Abdomen and Pelvis" / O. V. Korenkov, G. F. Tkach. – Sumy : СумДУ, 2020. – 149 p.
7	Methodical instructions for practical lessons on the topic "Clinical Anatomy and Operative Surgery of the Lower and Upper Limbs" / O. V. Korenkov, G. F. Tkach – Sumy : СумДУ, 2021. – 139 p.
8	Kotcher J. Surgical Technology: Principles and Practice 7th Edition – St. Louis, Missouri, USA : Saunders Elssevier, 2017. – 1120 p.
9	Hemostatic performance and biocompatibility of chitosan-based agents in experimental parenchymal bleeding. Deineka.V, Sulaieva.O, Pernakov. M., Materials Science and Engineering: C, Volume 120, January 2021, 111740.
10	Korenkov O. Comparative effect of calcium phosphate biocomposite materials on the healing of experimental defect of compact bone tissue. Journal of Morphological Sciences. 2019. Vol. 36, №. 3. P. 162–168.

Web-based and electronic resources	
1	Korenkov O. V., Tkach G. F. Topographic anatomy of the head : study guide – U R L https://essuir.sumdu.edu.ua/bitstream-download/123456789/44368/1/TOPOGRAPHIC_ANATOMY.pdf
2	Korenkov O. V., Tkach G. F. Topographic anatomy of the neck : study guide – U R L 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 – U R L https://essuir.sumdu.edu.ua/bitstream-download/123456789/69817/1/Korenkov_Topographic_Anatomy.pdf