

MINISTRY OF HEALTH CARE OF UKRAINE

DANYLO HALYTSKY LVIV NATIONAL MEDICAL UNIVERSITY

Department of operative surgery and topographical anatomy

«ЗАТВЕРДЖУЮ»
Перший проректор з науково-
педагогічної роботи
проф. М.Р.Гжегоцький

«_____» _____ 2019р.

WORKING CURRICULUM AT DISCIPLINE

Clinical anatomy and operative surgery

training of specialists of the second (master's) level of higher education

branch of knowledge 22 “Health care”
Speciality 221 “Dentistry”

Improved at methodical council of the department of operative surgery with topographical anatomy protocol № 11 «20» 03. 2019.	Improved at profile methodical council meeting of medical-biological discipline protocol № 2 «21» 03. 2019.
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Introduction

Working curriculum at discipline “Clinical anatomy and operative surgery”

according standards of specialists of the second (master's) level

branch of knowledge 22 “Health care”

Speciality 221 “Dentistry”

educational program of master of Medicine

Description of the educational discipline (annotation).

The working curriculum on discipline "Clinical anatomy" for students of the I-II courses of the medical faculty on the specialty 222 "Medicine" is concluded on the basis of Regulations on the working curriculum of discipline developed in accordance with the Regulation on organization of educational process at Danylo Halytsky Lviv National Medical University, improved by the Academic Council of the University on February 18, 2015, the protocol No. 1-BP and orders of the rector on the improvement of educational process organization. The purpose of the Regulation is to standardize the content, volume, sequence and organizational forms of student study, as well as the forms and means of current and final knowledge control.

Working curriculum of discipline is the normative document of the university, which is developed by the staff of the department for each academic discipline on the basis of the branch standard of higher education in accordance with the curriculum.

The working curriculum should ensure: the content of the department standards of higher education through the direct link between the content of the discipline and the objectives of higher education (skills and abilities of the specialist defined in the OC); compliance with licensing and accreditation terms and conditions; compliance with "Standards and Recommendations for Quality Assurance in the European Higher Education Area"; the possibility of using disciplinary competencies as an information base for the development of diagnostic options; uniqueness of the criteria for evaluation of academic achievements.

The working curriculum of the discipline in its content is a document that defines the amount of knowledge that must be mastered by the student in accordance to the requirements of the educational and qualification characteristics of the future specialist, the algorithm for studying the discipline content taking into account of interdisciplinary connections, eliminating the duplication of the educational material at study of common various courses of problems, necessary methodological support, components and technology for assessing students' knowledge.

The working curriculum as a normative document laying the ideology of the content of education and organization of the educational process, determines the educational and methodological principles of the department; all educational and methodical materials are developed on its basis for the educational process, including independent students work.

Structure of discipline	Number of hours, in them			OCW (hrs.)	Year of study	Type of control
	In all	Auditorium				
		Lectures (hrs.)	Pract. lessons (hrs.)			
Name of discipline: Clinical anatomy and operative surgery <i>Content module 3</i>	3 credits ECTS/ 90 hrs.	10	30	50	II course (3-4 semester)	Credit

The subject of discipline study is the layered structure of the body and the principles of operations.

Interdisciplinary connections: histology, normal physiology, surgery, therapy, radiology, neurology, dentistry, etc.

1. The purpose and objectives of discipline

1.1. The purpose and tasks of the discipline: "Clinical anatomy and operative surgery" is based on the goals of the educational-professional program of graduates preparation of a higher medical school and are determined by the content of those system knowledge and skills that a specialist should acquire. The knowledge that students receive from the academic discipline "Clinical Anatomy and Operative Surgery" are basic for the block of disciplines providing the natural sciences (block of NS) and vocational and practical training (PT).

1.2. The main tasks of studying the discipline "Clinical anatomy and operative surgery" are as follows:

a) are based on the students study of morphological disciplines - human anatomy; histology, cytology and embryology; physiology, pathomorphology; pathophysiology; propaedeutics of internal medicine, propaedeutics of pediatrics, radiology and integrate with these disciplines;

b) creates the foundation for the students study of surgery, traumatology, surgical dentistry, neurosurgery, anesthesiology and intensive care and other educational disciplines where surgical methods of treatment are used, which involves the integration of teaching with these disciplines and formation of skills to apply knowledge in the process of further education and professional activity;

c) provides the opportunity to obtain practical skills and to develop professional skills for the provision of medical care at certain pathological conditions and during care of surgical patients.

As a result of discipline study student must:

- know the structure, topography and syntopy of the human body parts;
- demonstrate possession of the technique of basic surgical interventions performance on experimental animals and human corpses.

1.3. Competence and learning outcomes, the formation of which is facilitated by discipline (the relationship with the normative content of higher education graduates training, formulated in terms of learning outcomes of Higher Education Standard).

In accordance with the requirements of Higher Education Standard, discipline ensures students' acquisition of **competences**:

- *general*: the basics for students to study clinical anatomy and operative surgery, histology, normal physiology, propaedeutics of clinical disciplines.
- *special (professional, subject)*: formation of skills to apply knowledge of clinical anatomy and operative surgery in the process of further study of all clinical disciplines and in future professional activities.

Detail of competencies according to the descriptors of the NRC in the form of "Matrix of competencies".

№	Competencies	Knolleges	Skills	Communi-cation	Autonomy and responsibility
1.	Professional	<ul style="list-style-type: none"> - essence, the fundamental properties of the layered structure of the human body; - features of anatomy structure of the head; - features of topographical anatomy of the neck; - features of topographical anatomy of the chest; - concept of norm, variants, anomalies; - concept of individual variability; - concept about constitution of the chest; - features of topographical anatomy of abdomen; - types of body structure; - features of topographic anatomy of the lumbar region and retroperitoneal space; - features of topographic anatomy of pelvis; - features of topographic anatomy of the upper limb; - features of topographic anatomy of 	<ul style="list-style-type: none"> - to confirm situational tasks from the main parts of discipline; - to determine the layered structure features of parts of the head; - to know how to perform primary surgical treatment of wounds of the skull; - to demonstrate on a phantom the methods of anaesthesia on maxilla and mandible; - to differentiate the external and internal carotid arteries in the triangle; - to define in Pirogov`s triangle the lingual artery; - to show on dry preparations the structure of wall of the chest; - to determine the structure and function of organs of the chest; - to determine localization and formation of cava veins; - to determine the puncture of the pleural cavity; - to determine the structure and function of the abdominal cavity organs; - to differentiate the topography of peripheral nerves and vessels of the 		<ul style="list-style-type: none"> - mastering of practical skills in use of surgical instruments and suturing material; - technique of operations on the trachea (tracheotomy, conicotomy); - defining of conditional lines on the surface of the chest; - technique of operations on the stomach (gastrostomy, resection of the stomach); - technique of operations on the small and large intestine; - technique of operations on the liver (cholecystectomy); - technique of operations on vessels and nerves; - technique of operations on muscles and tendons; - technique of operations on the limbs (amputations)

		the lower limb.	trunk; - to demonstrate on wet preparations the performance of intestinal sutures; - to demonstrate on wet preparations the performance of liver sutures; - to demonstrate paranephrene block performance on a phantom; - to determine the anatomical areas of lymphatic ducts termination; - to determine the structure and function of the pelvic organs; - to demonstrate catheterization of urinary bladder on the phantom; - to demonstrate on dry preparations bones and muscles of pelvis; - to determine the structure and function of the upper limb; - to show on dry preparations the structure of the upper extremity joints; - to demonstrate venipuncture on the upper limb; - to demonstrate on the wet preparations the lower limb layered structure; - to analyse the features of the veins topography; - to analyse the formation and clinical significance of venous anastomoses.		and exarctulations).
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Learning outcomes: the knowledge that students receive from the academic discipline "Clinical Anatomy and Operative Surgery", are basic for the block of disciplines providing the natural sciences (block of psychology) and the professional-practical (block of PP) preparation.

Integrative final programmatic learning outcomes, the formation of which is facilitated by the discipline: the ability to analyze information about the layered structure of the human body, its systems, organs and tissues; to demonstrate possession of moral and ethical principles of the attitude to living person and his body as an object of anatomical and clinical research; variants of organs variability, congenital defects; to interpret gender, age and individual features of the human body structure; to explain the patterns of development and features of the human organs

and systems structure at macro- and microscopic levels; to predict the interdependence and unity of structures and functions of human organs of their variability under the influence of environmental factors; to determine the topographic-anatomical relations between human organs and systems; determine the influence of social conditions and labor on the development and structure of the human body.

Results of study for the discipline: histology, normal physiology, surgery, therapy, radiology, neurology, dentistry, etc.

2. Information volume of educational discipline

Three ECTS credits are allocated for studying the academic discipline for 90 hours.

Content module 1. Introduction into clinical anatomy and operative surgery. Topographic anatomy and operative surgery of head and neck.

Topic 1. Introduction into topographical anatomy and operative surgery. Determination of the role of topographical anatomy knowledge, methods of operative approach and techniques in the studies of a doctor. Classification of surgical operations. Surgical instruments and suturing devices. Identification of modern surgical instruments. Demonstration of the primary surgical wound treatment technique. Differentiation of surgical interventions types, transplantation and explantation of organs and tissues. History of discipline development. Methods of topographic-anatomical researches. Classification of surgical operations.

Topic 2. Dissection and connection of the tissues. Principles of primary surgical treatment of wounds. Methods of local anesthesia. Types of transplantation and explantation of organs and tissues, methods of skin transplantation.

Topic 3. Topographical anatomy and operative surgery of cerebral-cranial part of the head. Topographical anatomy and operative surgery of cranial cavity. Borders, layers, vessels and nerves, cellular spaces of the frontal-parieto-occipital and temporal areas. Brain meninges and intermeningeal spaces. Analysis of age characteristics of topographic anatomy of the head. Scheme of cranio-cerebral topography. Topographico-anatomical background of clinical manifestation of pathological processes in the areas of the head. Primary surgical treatment of cranial wounds. Different methods of wounds treatment on the head. Principles of decompression and bone-reconstructive skull trepanning. Antrotomy.

Topic 4. Topography of face. Borders, layered structure, vessels and nerves, cellular spaces of the lateral, deep and anterior regions of the face. Surgical treatment of maxillary-facial wounds. Operations in inflammatory and purulent processes. The choice and methods of surgical interventions at purulent processes of the face. Typical incisions at abscesses and phlegmons on the face. Operation for treatment of temporomandibular joint ankylosis. Topographico-anatomical features of structure of the orbit with the parts of the face. Lacrimal apparatus of the eye. Nasal area (external nose, nasal cavity, sinuses). Opening of frontal sinus. Oral area (oral cavity, mouth floor, tongue). Operations on the upper and lower jaws. Classification of facial defects and surgical methods of their correction. Principles of restorative surgery on the face. Operations at congenital fissure partial and total fissure of the upper lip.

Operations at congenital fissure of palatine (uranoplasty). Teeth, structural features, blood supply and innervation. Types of anaesthesia. Mechanisms and methods of local anesthesia during surgical interventions in the facial area of the head. Infiltrative and conductive anesthesia on the face. Operation of teeth extraction.

Topic 5. Topography of the neck. Fascia and cellular spaces on the neck. Analysis of age features of topographic anatomy of the neck. Topographic-anatomical background of pathological processes clinical picture development on the neck. Operations at congenital fistulas and cysts of the neck. Different methods of wounds treatment on neck. Topography of organs of the neck, age and gender features of the cervical organs structure. Operative methods at conicotomy, tracheotomy and tracheostomy. Operations on thyroid gland. Principles of surgical interventions in various forms of goiter. Vessels and nerves of the neck. Exposure and ligation of external and common carotid arteries.

Content module 2. *Topographical anatomy and operative surgery of the areas and organs of the chest and abdominal cavities, retroperitoneal space and pelvis.*

Topic 6. Topographical anatomy and operative surgery of thoracic wall, breast, pleura and lungs. Constitutional features of structure of the chest. Types of pneumothorax. The technique of pneumothorax closure. Pleural puncture. Thoracotomies. Segmentectomy. Lobectomy. Removal of the lung. Resection of the rib. Topographical anatomy and operations on the breast.

Topic 7. Topographical anatomy and operative surgery of organs of the mediastinum, heart and pericardium. Surgical approaches to esophagus, methods of esophagus reconstruction. Sternotomies. Operations at cardiac wounds. Pericardium puncture. Congenital and acquired heart defects, principles of their surgical treatment. Aorto-coronary bypass, grafting, stenting. Extracorporeal circulation. Heart transplantation.

Topic 8. Topography and operative surgery of anterior-lateral abdominal wall. Surgical approaches to the abdominal cavity organs. Optimal methods of laparotomy at various diseases of the abdominal cavity. Laparoscopic surgery. Hernia of the anterior abdominal wall. Optimal methods of surgery for abdominal wall hernia. Inguinal area, inguinal canal and inguinal space. Operations at inguinal hernia. Operative treatment of congenital, strangulated and sliding hernia. Topography of the femoral canal. Femoral hernia. Operation at femoral hernia. Hernia of linea alba of abdomen. Umbilical hernia. Operation at umbilical hernia and hernia of linea alba.

Topic 9. Topographic anatomy and operative surgery of the stomach, abdominal organs and abdominal wall, abdominal cavity. The relations of the peritoneum to the abdominal cavity. Bursa, canals, recesses. Topographic anatomy of the stomach, liver, gall bladder, biliary tract, small and large intestine, pancreas and spleen. Topographic-anatomical bases of organ-saving operation methods on the stomach. Surgery of stomach: dissection, suturing, gastrostomy, gastroenterostomy, resection and organ-saving operations. Operations on the liver, gallbladder, biliary tract, pancreas. Principles of stomach resection, operations on the liver, gallbladder,

biliary tract, pancreas. Resection of spleen. The main principles of superior abdominal floor laparoscopic surgery.

Topic 10. Topography of peritoneum and abdominal cavity inferior floor organs. Topographical anatomy of small and large intestine. Intestinal sutures. Resection of intestine. Different types of enteroanastomosis: “end-to-end”, “side-to-side”, “end-to-side”. Operation on colon: colostomy, forming of “anus praeter naturalis”, resection of colon, colectomy. Removal of the appendix (operative approach, methods of stump managing, retrograde removal).

Topic 11. Topography and operative surgery of lumbar region and retroperitoneal space. Topographic anatomy of fascia, cellular spaces and organs of retroperitoneal space. Weak places of the lumbar area. Paraneuron block. Operation on kidneys and ureters. Principles of operations on kidneys and ureters, laparoscopic interventions on these organs. Transplantation of kidneys. Congenital malformations of the spine. Lumbar puncture. Operations on the spine.

Topic 12. Topography and operative surgery of pelvic walls, floors, nerves and vessels, cellular tissue spaces. Topography and operative surgery of pelvic organs. Fascia and cellular spaces of pelvis. Age and gender features of topographical anatomy of pelvis. The choice of operative methods on urinary bladder, prostate, rectum, uterus, testis, external genital organs. Urinary bladder puncture. High section of urinary bladder. Approaches to the prostate. Operations at abscesses and fistula of rectum. Caesarean section. Operations at ectopic pregnancy. Operations at varicocele, cryptorchidism, phimosis and paraphimosis.

Content module 3. Topographical anatomy and operative surgery of extremities.

Topic 13. Topographical anatomy of extremities. Topography and operative surgery of shoulder, arm, cubital fossa, forearm and hand. Topography and operative surgery of gluteal area, femoral area, popliteal fossa, knee joint, crural area and foot. Borders of the area. Projection of the neurovascular bundles. Cellular spaces and their connections. Pathways of purulent processes spreading. The occurrence of a clinical manifestation of pathological processes on the limbs.

Topic 14. Operations on upper and lower extremities. Methods of treating wounds on the limbs. Approaches to the axillary, subclavian, brachial, radial and ulnar arteries. Approaches to the vessels and nerves at the femoral region, leg and the foot. Operations on the tendons, vessels and nerves of the limbs. Exposure and ligation of the major vessels of the extremities. Principles of desobliterative operations on major vessels. Principles of operations on the nerves: neurolysis, nerve suturing, neurotomy, reconstructions, and transplantation of nerves. Suture of the tendons. Microsurgical technique. Ways of purulent processes spreading. Incisions at panaris and phlegmons of the hand and forearm. Incisions at phlegmons of the foot and legs. Principles of joint puncture, arthrotomy, arthroplasty and arthrodesis. Principles and techniques of extra- and intramedullary osteosynthesis. Amputation and exarticulation at different levels of the upper and lower extremities.

3. Structure of the educational discipline

Topic	Lectures	Practical lessons (workshops)	OCW	Individual work
Content module 1. Introduction into clinical anatomy and operative surgery. Topographic anatomy and operative surgery of head and neck.				
1. Introduction into topographical anatomy and operative surgery. Classification of anaesthesia; types of operative procedures. Principles of the operations. Surgical instruments.	2	2	5	
2. Dissection and connection of the tissues. Primary surgical technique.	-	2		
3. Topographical anatomy and operative surgery of cerebral-cranial part of the head. . Topographical anatomy and operative surgery of cranial cavity.	-	2	5	
4. Topography of face. Orbit and nose. Operative treatment of purulent processes of the face.	2	2	5	
5. Topography of organs of the neck (pharynx, larynx, trachea, esophagus, thyroid gland). Operative procedures on the organs of the neck. Tracheostomy. External and common carotid artery exposure and ligature.	2	2	5	
In all content module 1	6	10	20	
Content module 2. Topographic anatomy and operative surgery of the areas and organs of the chest and abdominal cavities, retroperitoneal space and pelvis.				
6. Topographical anatomy and operative surgery of thoracic wall, breast, pleura and lungs.	2	2	5	
7. Topographical anatomy and operative surgery of anterior and posterior mediastinum.	-	2	-	
8. Topography and operative surgery of anterior-lateral abdominal wall. Operative treatment of anterior abdominal wall hernias.	-	2	5	
9. Topography of peritoneum and abdominal cavity superior floor organs. Operations on stomach (gastrostomy, stomach resections, gastroenterostomy). Operations on liver, gall bladder, biliary tract, pancreas.	-	2	5	
10. Topography of peritoneum and abdominal cavity inferior floor organs. Operations on the	-	2	5	

abdominal cavity organs: intestinal sutures and resections. Appendectomy, operations on large intestine.				
11. Topography and operative surgery of lumbar region and retroperitoneal space. Basics of transplantology.	-	2	5	
12. Topography and operative surgery of pelvic walls, floors, nerves and vessels, cellular tissue spaces. Topography and operative surgery of pelvic organs.	-	2	-	
In all content module 2	2	14	25	
Content module 3. Topographic anatomy and operative surgery of extremities.				
13. Topography and operative surgery of shoulder, arm, cubital fossa, forearm and hand. Topography and operative surgery of gluteal area, femoral area, popliteal fossa, knee joint, crural area and foot.	-	2	-	
14. Operations on the upper and lower extremities: vessel ligation; vessel suturing; operative treatment of paronychia and tendosynovitis; vein section, vein puncture; intramuscular injections; treatment of abscesses. Principles of operative procedures on bones (amputation, exarticulation, joint resection).	2	2	5	
15. Test credit		2		
In all content module 3	2	6	5	
In all	10	30	50	

4. Thematic plan of lectures

Thematic plan of lectures

№	Topic	Hours
1.	Introduction to the topographical anatomy and operative surgery. Classification of anaesthesia; types of operative procedures. Principles of the operations. Topography and operative surgery of cerebral part of the head. Layered structure of calvaria. Skull trepannings. Topography of facial area of the head. Fascia and cellular spaces of the face. Surgical treatment of wounds of the face. Incisions at purulent processes on the face. Concept of operative procedures on paranasal sinuses. Surgical anatomy of the neck. Principles of the operative treatments on the neck.	2
2.	Topographical anatomy and operative surgery of thoracic wall. Breast, diaphragm, pleura and its sinuses. Lungs. Mediastinum organs, heart and pericardium. Operations at mastitis. Pleural puncture. Thoracotomy. Operations on the heart.	2

3	Topography and operative surgery of anterior-lateral abdominal wall. Types of abdominal wall incisions. Paracentesis. Hernia treatment. Topographical anatomy and operative surgery of abdominal cavity organs. Main principles of the operative procedures on the empty organs. Intestinal sutures. Resections of small and large intestine. Types of gastrostomy. Stomach resections. Operations on liver. Removal of gall bladder.	2
4.	Topographical anatomy and operative surgery of lumbar region, retroperitoneal space and pelvis. Resection of kidney. Operations on urinary bladder. Urinary bladder puncture.	2
5.	Topographical anatomy and operative surgery of upper and lower extremities. Operations on extremities: ligature of the vessels, vesicular sutures. Operations on nerves. Suture of tendon. Amputations and exarticulations.	2
Amount of hours in lectures		10

5. Thematic plan of practical lessons (workshops)

Thematic plan of practical lessons

№	Topic	Hours
Topic 1. Introduction into clinical anatomy and operative surgery. Topographic anatomy and operative surgery of head and neck.		
1.	Introduction into topographical anatomy and operative surgery. Classification of anaesthesia; types of operative procedures. Principles of the operations. Surgical instruments.	2
2.	Dissection and connection of the tissues. Primary surgical technique.	2
3.	Topographical anatomy and operative surgery of cerebral-cranial part of the head. Topographical anatomy and operative surgery of cranial cavity.	2
4.	Topography of face. Orbit and nose. Operative treatment of purulent processes of the face.	2
5.	5. Topography of organs of the neck (pharynx, larynx, trachea, esophagus, thyroid gland). Operative procedures on the organs of the neck. Tracheostomy. External and common carotid artery exposure and ligature.	2
In all Topic 1.		10
Topic 2. Topographic anatomy and operative surgery of the areas and organs of the chest.		
6.	Topographical anatomy and operative surgery of thoracic wall, breast, pleura and lungs.	2
7.	Topographical anatomy and operative surgery of anterior and posterior mediastinum.	2
In all Topic 2.		4
Topic 3. Topographic anatomy and operative surgery of the areas and organs of		

abdominal cavity.		
8.	Topography and operative surgery of anterior-lateral abdominal wall. Operative treatment of anterior abdominal wall hernias.	2
9.	Topography of peritoneum and abdominal cavity superior floor organs. Operations on stomach (gastrostomy, stomach resections, gastroenterostomy). Operations on liver, gall bladder, biliary tract, pancreas.	2
10.	Topography of peritoneum and abdominal cavity inferior floor organs. Operations on the abdominal cavity organs: intestinal sutures and resections. Appendectomy, operations on large intestine.	2
In all Topic 3.		6
Topic 4. Topographic anatomy and operative surgery of walls and organs of the retroperitoneal space and pelvis.		
11.	Topography and operative surgery of lumbar region and retroperitoneal space. Basics of transplantology.	2
12.	Topography and operative surgery of pelvic walls, floors, nerves and vessels, cellular tissue spaces. Topography and operative surgery of pelvic organs.	2
In all Topic 4.		4
Topic 3. Topographic anatomy and operative surgery of extremities.		
13.	Topography and operative surgery of shoulder, arm, cubital fossa, forearm and hand. Topography and operative surgery of gluteal area, femoral area, popliteal fossa, knee joint, crural area and foot.	2
14.	Operations on the upper and lower extremities: vessel ligation; vessel suturing; operative treatment of paronychia and tendosynovitis; vein section, vein puncture; intramuscular injections; treatment of abscesses. Principles of operative procedures on bones (amputation, exarticulation, joint resection).	2
15.	Test credit	2
In all Topic 5.		6
In all		30

6. Thematic plan of out of class work

Out of class work

№	Topic	Hours	Type of control
1.	Operations on thyroid gland	2	Continuous control on the practical periods
2.	Operations on oesophagus.	4	-"-
3.	Vagosympathetic block by Vishnevski L. V.	3	-"-
4.	Operations at mastitis.	3	-"-
5.	Resection of the rib.	2	-"-
6.	Operations at pneumothorax.	3	-"-

7.	Pericardium puncture.	3	-"-
8.	Operations at wounding of the heart.	3	-"-
9.	Operations on kidneys.	3	-"-
10.	Operations on urinary bladder (urinary bladder puncture).	3	-"-
11.	Operations at varicocele.	3	-"-
12.	Operations at phimosis.	3	-"-
13.	Duglas space puncture.	3	-"-
14.	Operations at varicose of lower extremity veins.	3	-"-
15.	Operations at tendon and vessel injury (tendon suturing, nerve suturing).	3	-"-
16.	Knee joint puncture, arthrotomy, reconstruction of the joint, arthrodesis	3	-"-
17.	Operations at femoral hernia	3	-"-
	In all	50	

7. **Individual lessons** are not planed.

8. Educational methods

At practical classes for the effective assimilation of the material different educational methods are used, namely:

- Visual method (teacher's demonstration of organocomplexes, dry and wet preparations, use of atlases, illustrations of textbooks, tables, demonstration of separate surgical techniques principles on animal material, and others);
- Practical method (student's work with organocomplexes, dry and wet preparations, solving tests, situational tasks, working out of separate surgical techniques on animal material);
- The verbal method (teacher's explanation of the unclear questions from the previous topic of the class or lecture, teacher's explanation of the topic of the current practical lesson, lecture);
- Work with a book (writing notes by students during self-study and performing out of class work);
- Video method (use of thematic video films at lecture course, multimedia presentations of lectures).

9. Methods of control

Current control is carried out on the basis of control of theoretical knowledge, skills and abilities.

Forms of current control:

1. Oral questioning (frontal, individual, combined).
2. Practical examination of the formed professional skills.
3. Test control (open and closed test tasks).

Current control is carried out during the lessons and is aimed at verifying students' learning of the material. The form of ongoing control during the lessons is determined by the working curriculum of the discipline. When assessing the

mastering of each topic for the current educational activity, the student is awarded grades on a 4-point (traditional) scale, taking into account the approved evaluation criteria.

Excellent ("5") – The student correctly answered 90-100% of the tests in the format A. Correctly, clearly, logically and fully answers all standardized questions of the current topic, knows well the material of the previous topics (the initial level of knowledge), answers the questions of the lecture course and the questions of out of class work. Properly demonstrates the preparations (knowledge of practical skills), correctly uses the Latin terms. Makes a generalization of the material, complements his answer by knowing additional literature. He fulfilled all the tasks, provided by the methodological recommendations during the independent work of the student. He wrote an abstract on the proposed topic or independently made an anatomical preparation (individual work).

Good ("4") - Student correctly answered 70-90% of the tests in the format A. Correctly, sometimes with the help of explanatory questions, answers standardized questions of the current topic, knows the material of previous topics (initial level of knowledge), answers the questions of the lecture course and the question of out of class work. Properly demonstrates the preparations (knowledge of practical skills). The student correctly uses the Latin terms. He fulfilled all the tasks provided for by the methodological recommendations at the independent work of the student.

Satisfactory ("3") - The student correctly answered 50-70% of the A format tests. Incompletely, with the help of explanatory questions, answers standardized issues of the current topic, questions on the material of previous topics (initial level of knowledge), inaccurately and incompletely answers the questions of the lecture course and the question of out of class work. Cannot independently build a clear, logical answer. During the answer and demonstration of the preparations (knowledge of practical skills) the student makes minor mistakes. The student uses Latin terms with errors, or does not fully understand the Latin terms of the topic of the current class and previous occupations. Fulfilled not entirely the tasks provided by methodological recommendations at independent work of the student.

Unsatisfactory" ("2") - The student answered less than 50% of the A format tests. Does not know the material of the current topic. Or answers the questions posed to the current topic not enough, incompletely, cannot construct a logical answer, does not answer additional questions, does not understand the content of the material, does not know the question of the material of the previous topics (the initial level of knowledge), does not answer the questions of the lecture course and the question of independent work. During the response and demonstration of the drug (knowledge of practical skills) the student makes significant, gross mistakes. The student does not know the Latin terms from the topic of the current occupation and previous occupations, or uses Latin terms with errors. Did not fulfill the tasks provided by methodological recommendations during independent work of the student.

Maximum number of the points for the continuous studies of student - 200.

Continuous control performed at every practical lesson according the specific purposes at every topic, at assessing student learning activities, should prefer

standardized methods of control: testing, structured written work, a structured procedure for the control of practical skills at the conditions, which are close to real.

The maximum amount that can be collected by a student during a module is 200 points. It is calculated by multiplying the number of points that correspond to the evaluation "5", the number of topics in the module with addition of marks for individual independent work.

The minimum number of points that can be collected by student during a module, calculated by multiplying the number of points corresponding to the evaluation "3", the number of topics in the module, ie 120 points.

Methods of control

Oral examination, test control, checking of workbooks and practical skills.

Distribution of the points, which are received by students

Continuous control performed during practical classes and aims at checking mastering academic material. The form of the current control during practical classes - oral interviews, filling in workbooks, learning practical skills.

Evaluation of current educational activity. In evaluating the mastering of each topic for current activity the student is scored for the 4-point scale (traditional) scale on the basis of approved evaluation criteria according discipline. This takes into account all types of the work, which is provided by the curriculum. Student has to receive the mark at every topic. Evaluation forms of current educational activity should be standardized and include control of theoretical and practical studies. The marks which are registered according the traditional scale are converted into the points.

The maximum amount of points, which student can receive at current educational activity during study of a discipline is 200 points.

The minimum amount of points, which student has to receive at current educational activity for enrollment of subjects is 120 points.

Calculation of points is based on student assessments obtained by traditional scale in the study subjects during the semester, by calculating the arithmetic mean (CA), rounded to two decimal places. The resulting value is converted into points by multi-scale as follows:

$$X = \frac{CA \times 200}{5}$$

For convenience, a table converted 200-point scale.

Recalculation of the average score for current activity in multimark scale for courses that are ended with the credit (Differentiated credit)

4-pointed scale	200-pointed scale	4-pointed scale	200-pointed scale	4-pointed scale	200-pointed scale	4-pointed scale	200-pointed scale
5	200	4.45	178	3.92	157	3.37	135
4.97	199	4.42	177	3.89	156	3.35	134
4.95	198	4.4	176	3.87	155	3.32	133
4.92	197	4.37	175	3.84	154	3.3	132
4.9	196	4.35	174	3.82	153	3.27	131
4.87	195	4.32	173	3.79	152	3.25	130
4.85	194	4.3	172	3.77	151	3.22	129
4.82	193	4.27	171	3.74	150	3.2	128
4.8	192	4.24	170	3.72	149	3.17	127
4.77	191	4.22	169	3.7	148	3.15	126
4.75	190	4.19	168	3.67	147	3.12	125
4.72	189	4.17	167	3.65	146	3.1	123
4.7	188	4.14	166	3.62	145	3.07	122
4.67	187	4.12	165	3.57	143	3.02	121
4.65	186	4.09	164	3.55	142	3	120
4.62	185	4.07	163	3.52	141	Less than 3	Not enough
4.6	184	4.04	162	3.5	140		
4.57	183	4.02	161	3.47	139		
4.52	181	3.99	160	3.45	138		
4.5	180	3.97	159	3.42	137		
4.47	179	3.94	158	3.4	136		

Out of class work of the students is assessed during the current control of theme on the proper lesson. The acquisition of the topics which are considered only on independent work is controlled at the final control.

Final control is carried out in order to assess learning outcomes at a particular educational qualification level and at the separate completed stages with the national scale ECTS. Final control includes semester control and certification of the student.

Semester control is carried out in the form of semester credit of the discipline in the amount of educational material, which is specified in the working curriculum of the discipline in the terms established by the working curriculum plan, individual curriculum of the student.

Test credit of the semester (differentiated) – is the form of final control, which is to assess the mastering of educational material on specific subjects solely on the basis of the performance of all types of educational work provided with the working curriculum. Test credit of the semester (differentiated) results are registered according current control.

Determination of the number of points that student has collected from discipline

The assessment of discipline, a form which is the final control test (differentiated test) is based on current educational activities and expressed with the

scale of 2 marks "Passed" or "not passed". To enroll a student must obtain for current learning activity score of at least 60% of the maximum amount of points in the discipline (120 points).

Ranking of assigning ratings of "A", "B", "C", "D", "E" is performed for the students of this course, studying at one of the specialty and successfully completed the study of subject. Students who have received assessment FX, F («2») are not registered into the list of students who ranked. Students with the assessment FX after retaking are automatically marked with "E".

Points of the discipline are regardless converted as the ECTS scale and 4-point scale. Scores of ECTS scale are not converted into 4-point scale and vice versa.

Scores of students which study in one specialty, are taking into account the number of points, obtained in the discipline are ranked according a scale of ECTS as follows:

Assessment ECTS	Statistical index
A	Best 10% of students
B	Next 25% of students
C	Next 30% of students
D	Next 25% of students
E	Last 10% of students

The scores of discipline for students who successfully completed the program converted to 4-point scale by absolute criteria listed in the table below:

Assessment <i>ECTS</i>	Assessment at 4 points scall
From 170 to 200 points	«5»
From 140 to 169 points	«4»
From 139 points to a minimum number of points that should recruit student	«3»
Below the minimum number of points that a student must collect	«2»

The assessment at ECTS in traditional scale is not converted because the scale of ECTS and four-point scale are independent.

Objectivity of students educational activities evaluation is tested with the statistical methods (coefficient of correlation between the assessment of ECTS and evaluation according national scale).

Methodical providing

Methodical recommendations for students and teachers, workbooks, tables, models, schemes, educational films, surgical instruments, suture material, dry preparations, animal corpses.

10. Recommended literature

1. К.І.Кульчицький, М.П.Ковальський, А.П.Дітківський, М.С.Скрипніков та ін. Оперативна хірургія і топографічна анатомія. Київ, «Вища школа», 1994.- 464 с.
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12. Chassin J.L. Operative Strategy in General Surgery. New York etc., Springer. - 1994.
13. Т.В.Золотарева, Г.Н.Топоров. Хирургическая анатомия головы. Москва, Медицина, 1968.
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15. Р.Й.Вайда. Основи клінічної анатомії та оперативної хірургії (лекції).- Тернопіль.- «Укрмедкнига», 2001.
16. М.П.Бурих. Топографічний підхід до вивчення тіла людини. - Харків, 2005. - 30 с.
17. М.П.Ковальський, О.Б.Кобзар. Навчально-методичні матеріали для підготовки до підсумкового контролю знань і вмінь на кафедрі оперативної хірургії і топографічної анатомії (для студентів медичного факультету). - К., Стилос, 1999-2004. - Видання 1-5. - 79 с.
18. А.Г.Попов, В.К.Красницкий, В.И.Горovenko. Учебное пособие «Тестовые задачи» по курсу оперативной хирургии и топографической анатомии. Одесса, 2004. - 120 с.
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11. Information resources: the page of the department on the university's website