



Syllabus on the Discipline «Surgery»

1. General information	
Faculty	Medical Faculty
Educational program <i>(field, specialty, level of higher education, form of education)</i>	22 Health care Specialty 222 "Medicine" second (master's) level of higher education, full-time
Academic year	2023 - 2024
Name of discipline, code <i>(internet)</i>	Surgery, Educational component 29.1 https://new.meduniv.lviv.ua/kafedry/kafedra-hirurgiyi-1/
Department <i>(name, address, phone, e-mail)</i>	Surgery №1, 79010, Lviv, Yu. Roofa str., 4, Kaf_surgery_1@meduniv.lviv.ua
Head of the Department <i>(e-mail)</i>	Lukavetskyy Oleksiy Vasyliovych, MD, PhD, DSc (in Medicine), Professor, Kaf_surgery_1@meduniv.lviv.ua
Year of study	5th year
Semester	10
Type of discipline <i>(obligatory / by choice)</i>	Obligatory
Teachers	Professor, MD, PhD, DSc Vasyl Kolomiytsev vasyl.kolomiytsev@gmail.com Assoc. Prof. MD, PhD Volodymyr Khomyak khomyak@gmail.com Assoc. Prof. MD, PhD Orest Chemerys orestchemerys@gmail.com Assoc. Prof. MD, PhD Ihor Stojanovsky dr_stojanovsky@meta.ua Ass. Prof. MD, PhD Volodymyr Marina marinavolodia@ukr.net Ass. Prof. MD, PhD Jaroslav Pavlovsky pavl_jarik@ymail.com
Erasmus yes/no	no
The person responsible for the syllabus	Lukavetskyy Oleksiy Vasyliovych, MD, PhD, DSc (in Medicine), Professor, Kaf_surgery_1@meduniv.lviv.ua
ECTS credits	5,0
Number of hours <i>(lectures / practical classes / independent work of students)</i>	12/64/74
Language of instruction	Ukrainian / English
Information for consultation	According to the schedule
Clinical Base	LNMU, Dept. of Surgery №1, 79010, Lviv, Yu. Roofa str., 4, Kaf_surgery_1@meduniv.lviv.ua Lviv, CHospital «LOCL», Yu. Roofa str., 4
2. Brief review of the subject	

"Surgery" is a branch of medical science that studies the etiology and pathogenesis of surgical diseases, develops and improves methods of early diagnosis, treatment and prevention, improves methods of correction of surgical diseases; develops measures aimed at shortening periods of temporary incapacity for work and reducing disability.

The academic discipline "Surgery" provides an opportunity for students of the medical faculty in the 5th year of study to acquire knowledge, skills and practical skills that enable the specialist to quickly and correctly navigate situations when patients have surgical pathology. Mastery of the discipline is based on knowledge acquired by students in the process of studying other basic medical subjects. When mastering the discipline "Surgery", it is rational to introduce into the educational process modern world developments and standards on the main issues of surgery with wide use of means of complex practical-oriented training.

Educational program for "Surgery" for the 5th-year students of speciality 222 Medicine was processed based on the typical curriculum of discipline "Surgery" for higher medical educational institutions of Ukraine III-IV accreditation levels, which have been prepared by staff of the Department of Surgery #4 of the Bogomolets National Medical University reference for the discipline of "Surgery", taking into account continuous typical program in the discipline "Surgery" from the 2008, typical programs of faculty, clinical surgery, the subject "Surgical Diseases" and program for the specialty of pediatric surgery 7.12010001 "General Medicine" in training field 1101 "Medicine". In the 5th year for students of General Medicine module provides study of "Thoracic, cardio-vascular and endocrine surgery".

Chapter. Thoracic, cardio-vascular and endocrine surgery

Subchapters:

1. Thoracic, cardiac and endocrine surgery;
2. Vascular surgery.

The types of educational activity of students are:

A) Lectures, B) Practical training, C) Students' self-training work (SSW) in the organization of which counseling teachers have a significant role. All topics which are a part of subject module are implemented by the thematic plan of lectures, practical training and SSW to the educational process. Topics of lectures reveal the problematic issues of corresponding sections of the discipline. Various teaching tools such as multimedia presentations, training films, slides, demonstration of patients' cases are used throughout the lecture course.

Practical classes include:

- examination of patients with surgical diseases;
- study of the condition of vital organs and systems of patients;
- practical application of methods of diagnosis and surgical treatment;
- solving clinical cases and MCQs;
- mastering the elements of medical techniques on patients and medical simulators;
- training the skills of operative techniques during surgery and work in dressing rooms.

3. Aim and goals of the subject

The subject of study of the academic discipline is the main manifestations of surgical diseases, diagnosis, differential diagnosis and the basic principles of treatment of patients with surgical pathology.

Interdisciplinary connections: human anatomy, topographical anatomy, operative surgery, general surgery, pathomorphology, pathological physiology, biochemistry, pharmacology, anesthesiology and intensive care.

The purpose of studying of surgery – learning theoretical and practical knowledge of the etiology, pathogenesis, typical and atypical clinical presentation, diagnostic methods, conservative and surgical treatment, and rehabilitation of surgical pathology, that meet general practitioner training considering its specialty features.

Final objectives of the discipline:

1. Identify the most common symptoms and syndromes in patients with surgical diseases.

2. Identify the major etiological and pathogenetic factors of the most common surgical diseases.
3. Demonstrate the ability to perform the required medical manipulations.
4. To demonstrate the moral and ethical principles of medical specialist and principles of professional subordination in surgery.
5. Diagnose and provide medical care in urgent conditions for patients with surgical diseases.
6. To carry out the prognosis of life and ability to work for the most common surgical diseases.
7. Classify and analyze the typical clinical picture of the most common surgical diseases.
8. Make up a plan of examination and analyze data from laboratory and instrumental investigations in patients with typical clinical course of the most common surgical diseases.
9. To explain the general principles of treatment, rehabilitation and prevention of the most common surgical diseases.
10. Identify tactics (principles of surgical interventions and conservative treatment, rehabilitation) with the most common surgical diseases and their complications.
11. To demonstrate the moral and ethical principles of medical specialist and principles of professional subordination in surgery.
12. Identify different clinical variants and complications of the most common surgical diseases.
13. Provide emergency medical care with the most common surgical diseases.
14. Plan examination of the patient, interpret the results of laboratory and instrumental examinations for the most common surgical diseases and their complications.
15. To carry out differential diagnosis, justify and formulate preliminary diagnosis of the most common surgical diseases.
16. Conduct primary and secondary prevention of the most common surgical diseases.
17. To determine a plan of conservative and operative treatment of surgical diseases depending on the pathogenetic factors and the severity of the patients condition.
18. Create a professional rehabilitation plan for patients with common surgical diseases.
19. Demonstrate the ability to conduct medical records at the clinic of surgical diseases.
20. To diagnose complicated and atypical forms of the most common surgical diseases.
21. Provide medical care in urgent conditions at the clinic of surgical diseases and perform urgent surgical manipulations and operations.
22. Planning scheme of examination of particular patient depending on the clinical features of the disease.
23. To carry out differential diagnosis of the most common surgical diseases in urgent and elective surgery.

Competences and results of study, formation of which promotes the discipline - the relationship with the regulatory content of the training of higher education applicants, formulated in terms of learning outcomes in the Standard.

According to demands of standard the discipline provides the acquiring by students the **competences**:

- integral: the ability to solve typical and complex problems and practical problems in the field of professional activity 22 "Health care", which involves the application of certain theoretical knowledge, skills, practical skills and methods of relevant professional orientation;

- general:

1. The ability to abstract thinking, analysis and synthesis;
2. The ability to study and to master by modern knowledge;
3. The ability to use knowledge in practical situations;
4. The ability to plan and manage by time;
5. The knowledge and understanding of professional activity;
6. The skills of application of informative and communicative technologies;

7. The ability to adaptation and action in the new situation;
8. The ability to accept the substantiated decisions;
9. The ability to work in the team;
10. The skills of interpersonal interaction;
11. The certainty and persistence about given tasks and taken obligations;
12. The aspiring to saving of environment;
13. The ability to act on principle of ethical rationale (motives).

- special (professional):

1. To call - over of anamnesis in surgical patient;
2. Carrying out of objective research of the surgical patient;
3. The estimation of severity of disease clinical signs;
4. Making of plan of investigation and evaluation their results;
5. Carrying out of differential diagnostics;
6. The providing of care for severe patient;
7. To reveal and estimate an acute medical conditions;
8. Diagnosis and treatment of patients with acute and chronic ischemia of the extremities;
9. Diagnosis and treatment of patients with surgical heart and aorta diseases: acute heart ischemia, congenital and acquired valvular heart disease, aneurysms of aorta;
10. Diagnosis and treatment of patients with diseases of lung and mediastinum;
12. Diagnosis and treatment of patients with combat surgical trauma, crush syndrome, polytrauma, modern surgical trauma in conditions of mass injuries and shock;
13. Diagnosis and treatment of patients with neurotrauma, trauma of the abdomen and thorax (pneumothorax, haemothorax, myocardial contusion and cardiac tamponade, flail chest);
14. Diagnosis and treatment of patients with burns and freezing injures;
15. Diagnosis and treatment of patients with vein pathology (varicose, postthrombophlebitic syndrome) and pulmonary embolism;
16. Treatment of patients with endocrine surgical pathologies: goiter, thyroiditis, thyroid cancer, adrenal gland tumours;
17. Administration of adequate treatment;
18. Patients transportation;

4. Prerequisites of the discipline

«Surgery» as a discipline is based on the knowledge gained by students in the study of normal and pathological anatomy, topographic anatomy, normal and pathological physiology, biochemistry, histology, microbiology, pharmacology, clinical radiology, internal diseases, general surgery, anesthesiology and intensive care, hygiene, social medicine, organization and economics of health care

5. Program results of study

List of the results of study

Code of the result of study	Content of the result of study	Link to the code in the matrix of competencies
Code is created while filling out the syllabus (categories: Kn – knowledge, Ab – ability, C – competence, AR – autonomy and responsibility)	Results of study determine that the student must know, understand and be able to perform, after completing the discipline. Results of study follow from the set learning goals. To enroll in the discipline, it is necessary to confirm the achievement of each result of study.	Symbol of the Program Result of study Code in the Higher Education Standard

Kn – 1, Ab – 1, C – 1, AR – 1	Collect data on patient complaints, medical history, life history, conduct and evaluate the results of physical examination.	PR 1
Kn – 2, Ab – 2, C – 2, AR – 2	Evaluate information about the diagnosis based on the results of laboratory and instrumental investigations.	PR 2
Kn – 3, Ab – 3, C – 3, AR – 3	Highlight the leading clinical symptom or syndrome. Establish the most probable or syndromic diagnosis of the disease. Assign laboratory and / or instrumental examination of the patient. Carry out differential diagnosis of diseases. Establish a preliminary and clinical diagnosis.	PR 3
Kn – 4, Ab – 4, C – 4, AR – 4	Determine the necessary mode of work and rest during treatment	PR 4
Kn – 5, Ab – 5, C – 5, AR – 5	Determine the necessary therapeutic nutrition in the treatment of the patient.	PR 5
Kn – 6, Ab – 6, C – 6, AR – 6	Determine the principles and methods of treatment (conservative, operative) of patient.	PR 6
Kn – 7, Ab – 7, C – 7, AR – 7	Determine the tactics of urgent medical care based on the diagnosis of emergency.	PR 7
Kn – 8, Ab – 8, C – 8, ARB – 8	Provide emergency medical care based on a diagnosis of emergency.	PR 8
Kn – 9, Ab – 9, C – 9, AR – 9	Organize medical and evacuation measures among the population and servicemen, taking into account the existing system of medical and evacuation support.	PR 9
Kn – 11, Ab – 11, C – 11, AR – 11	Demonstrate the ability to perform the required medical manipulations.	PR 11
Kn – 12, Ab – 12, C – 12, AR – 12	Implement a system of anti-epidemic and preventive measures within the primary health care. Implement a system of primary prevention measures within the primary health care. Organize secondary and tertiary prevention measures among the assigned contingent of the population.	PR 12
Kn – 15, Ab – 15, C – 15, AR – 15	Determine the presence and degree of restrictions on life, type, degree and duration of disability with the registration of relevant documents.	PR 15
Kn – 16, Ab – 16, C – 16, AR – 16	Demonstrate the ability to prepare an annual report on personal activities; to conduct medical records at the clinic of surgical diseases.	PR 16
Kn – 17, Ab – 17, C – 17, AR – 17	Conduct screening for major diseases; evaluate morbidity indices, integrated health indicators; identify risk factors for the occurrence and course of diseases.	PR 17
Kn – 18, Ab – 18, C – 18, AR – 18	Identify negative environmental factors; determine the relationship between the environment and health; develop preventive measures. Carry out analysis of morbidity of the population, identifying risk groups, risk areas, risk factors. Assess the impact of socio-economic and biological determinants on the health of the individual, family, population.	PR 18
Kn – 19, Ab – 19, C – 19, AR – 19	Investigate the scope and effectiveness of the physician, department, health care institution; identify defects in activities and causes. Carry out selection and use unified clinical protocols for medical care; develop and use local health care protocols. Carry out quality control of medical	PR 19

	care. Estimate the cost of medical services; substantiate the choice of an adequate method of financing (payment) and the choice of rational forms of organization of medical services. Apply methods of economic analysis when choosing methods of diagnosis, prevention, treatment, rehabilitation.	
Kn – 20, Ab – 20, C – 20, AR – 20	Organize the work of medical staff; to form rational medical routes of patients; organize interaction with colleagues, organizations and institutions; apply tools to promote medical services.	PR 20
Kn – 21, Ab – 21, C – 21, AR – 21	Form goals and determine the structure of personal activities.	PR 21
Kn – 22, Ab – 22, C – 22, AR – 22	Adhere to a healthy lifestyle, use the techniques of self-regulation and self-control.	PR 22
Kn – 23, Ab – 23, C – 23, AR – 23	To be aware of and guided in their activities by civil rights, freedoms and responsibilities, to raise the general educational and cultural level.	PR 23
Kn – 24, Ab – 24, C – 24, AR – 24	To demonstrate the moral and ethical principles of medical specialist and principles of professional subordination in surgery	PR 24
Kn – 25, Ab – 25, C – 25, AR – 25	Organize the necessary level of individual safety (own and persons cared for) in case of typical dangerous situations in the individual field of activity.	PR 25

6. Discipline format and scope

Discipline format (full-time / part-time)	Full-time	
Type of classes	Hours	Number of groups
lectures	12	
practical classes	64	
self-training work	74	

7. Topics and scope of the discipline

Code of the class type	Topic	Scope of study	Code of the study result	Teaching stuff
P-1 (practical class 1)	Thoracic trauma. Classification. Early and late complications. Differential diagnosis. The first medical aid and treatment strategy. Medical aid in the field and emergency situations.	Elaboration of issues of surgical trauma of the chest, first aid. Types of surgical treatment.	Kn-1,2, 3,4 Ab- 1,3, 4,5,6	Prof. V. Kolomiytsev; Assoc.prof. V. Khomyak; Assoc.prof. O. Chemerys; As.prof. I. Stojanovsky; As.prof. V. Marina. As.prof. J. Pavlovsky
P-2 (practical class 2)	Purulent diseases of lungs and pleura. Lung abscess and lung gangrene, bronchiectasis. Acute	Study of features of surgical tactics in patients with	Kn-1,2, 3,4 Ab- 1,3,	Prof. V. Kolomiytsev; Assoc.prof.

	and chronic empyema, pneumoempyema. Features of clinical course. Differential diagnosis. Methods of conservative and surgical treatment. Indications and contraindications for lung transplantation. Storage and transportation of donor lung.	inflammatory chest diseases.	4,5,6,12	V. Khomyak; Assoc.prof. O. Chemerys; As.prof. I. Stojanovsky; As.prof. V. Marina. As.prof. J. Pavlovsky
P-3 (<i>practical class 3</i>)	Ischemic heart disease. Diagnostics. Indications for surgical treatment. Methods of surgery. Current methods of diagnosis, minimally invasive surgical treatment of heart disease. Limitation of the patient's functioning and vital activities.	Urgent cardiac surgery aid. Study of indications for surgical treatment. Types of surgery.	Kn-1,2, 3,4 Ab- 1,3, 4,5,6,12	Prof. V. Kolomiytsev; Assoc.prof. V. Khomyak; Assoc.prof. O. Chemerys; As.prof. I. Stojanovsky; As.prof. V. Marina. As.prof. J. Pavlovsky
P-4 (<i>practical class 4</i>)	Acquired valvular heart disease. Classification. Diagnosis. Indications for surgical treatment. Methods of surgery. Complications. Indications and contraindications for heart transplantation. Storage and transportation of donor heart. Limitation of the patient's functioning and vital activities.	To study the symptoms and diagnosis of valvular heart disease. Modern methods of treatment. To study indications for heart transplantation.	Kn-1,2, 3,4 Ab- 1,3, 4,5,6	Prof. V. Kolomiytsev; Assoc.prof. V. Khomyak; Assoc.prof. O. Chemerys; As.prof. I. Stojanovsky; As.prof. V. Marina. As.prof. J. Pavlovsky
P-5 (<i>practical class 5</i>)	Diseases of the mediastinum. Classification. Diagnosis. Differential diagnosis. Methods of surgical treatment. Disease and injuries of the oesophagus.	While working on this section, students study mediastinal surgical pathology.	Kn-1,2, 3,4 Ab- 1,3, 4,5,6	Prof. V. Kolomiytsev; Assoc.prof. V. Khomyak; Assoc.prof. O. Chemerys; As.prof. I. Stojanovsky; As.prof. V. Marina. As.prof. J. Pavlovsky
P-6 (<i>practical class 6</i>)	Euthyroid and toxic goiter. Classification. Special methods of examination. Diagnosis. Differential diagnosis. Preoperative preparation. Surgical treatment. Thyroid cancer. Classification. The clinical course. Diagnosis.	Regional features, current trends and standards of treatment of thyroid diseases are studied.	Kn-1,2, 3,4 Ab- 1,3, 4,5,6	Prof. V. Kolomiytsev; Assoc.prof. V. Khomyak; Assoc.prof. O. Chemerys; As.prof. I. Stojanovsky;

	Methods of treatment. Limitation of the patient's functioning and vital activities.			As.prof. V. Marina. As.prof. J. Pavlovsky
P-7 (<i>practical class 7</i>)	Thyroiditis. Classification. The clinical course. Diagnosis. Methods of treatment. Indications for surgical treatment. Hyperparathyroidism: classification, symptoms, diagnosis, treatment.	After studying this section, students are introduced to inflammatory and autoimmune thyroiditis.	Kn-1,2, 3,4 Ab- 1,3, 4,5,6	Prof. V. Kolomiitsev; Assoc.prof. V. Khomyak; Assoc.prof. O. Chemerys; As.prof. I. Stojanovsky; As.prof. V. Marina. As.prof. J. Pavlovsky
P-8 (<i>practical class 8</i>)	Tumours of the adrenal glands. Classification. The clinical course. Diagnosis. Preoperative preparation. Methods of surgical treatment.	The topic is on the verge of endocrinology and oncology. Tumor diseases of the endocrine system are studied.	Kn-1,2, 3,4 Ab- 1,3, 4,5,6	Prof. V. Kolomiitsev; Assoc.prof. V. Khomyak; Assoc.prof. O. Chemerys; As.prof. I. Stojanovsky; As.prof. V. Marina. As.prof. J. Pavlovsky
P-9 (<i>practical class 9</i>)	Diseases of the breast (dyshormonal, tumors). Mastitis.	While working on this section, students study inflammatory breast pathology and tumors.	Kn-1,2, 3,4 Ab- 1,3, 4,5,6	Prof. V. Kolomiitsev; Assoc.prof. V. Khomyak; Assoc.prof. O. Chemerys; As.prof. I. Stojanovsky; As.prof. V. Marina. As.prof. J. Pavlovsky
P-10 (<i>practical class 10</i>)	Aneurysms of the aorta. Definition, causes. Classification, clinical picture, diagnosis and treatment.	Students' attention is drawn to morphological changes of vessels, features of hemodynamics, decrease in contractile ability of myocardium, suppression of bioelectrical activity of myocardium, disorders of neurohumoral	Kn-1,2, 3,4 Ab- 1,3, 4,5,6	Prof. V. Kolomiitsev; Assoc.prof. V. Khomyak; Assoc.prof. O. Chemerys; As.prof. I. Stojanovsky; As.prof. V. Marina. As.prof. J. Pavlovsky

		regulation, features of reaction to physical activity.		
P-11 (<i>practical class 11</i>)	Classification of acute ischemia of the extremities. Stages of clinical course. Diagnosis. Differential diagnosis. Methods of surgical treatment. Chronic lower limbs ischemia. Atherosclerosis and endarteritis. Classification of chronic ischemia and levels of occlusion of the aorta and lower limb arteries.	After studying these questions, the student will understand the issues of chronic and acute ischemia and ways to overcome this problem.	Kn-1,2, 3,4 Ab- 1,3, 4,5,6	Prof. V. Kolomiytsev; Assoc.prof. V. Khomyak; Assoc.prof. O. Chemerys; As.prof. I. Stojanovsky; As.prof. V. Marina. As.prof. J. Pavlovsky
P-12 (<i>practical class 12</i>)	Abdominal ischemic syndrome. Clinical course. Diagnosis. Differential diagnosis. Complications. Methods of conservative treatment. Prevention. Rehabilitation.	In class, the student must study the problem of blood supply to internal organs and master the methods of treatment and prevention.	Kn-1,2, 3,4 Ab- 1,3, 4,5,6	Prof. V. Kolomiytsev; Assoc.prof. V. Khomyak; Assoc.prof. O. Chemerys; As.prof. I. Stojanovsky; As.prof. V. Marina. As.prof. J. Pavlovsky
P-13 (<i>practical class 13</i>)	Varicose veins of the lower extremities. Classification. Complications. Diagnosis. Special methods of examination. Methods of surgical treatment.	The issue of surgical treatment of venous insufficiency is being studied.	Kn-1,2, 3,4 Ab- 1,3, 4,5,6	Prof. V. Kolomiytsev; Assoc.prof. V. Khomyak; Assoc.prof. O. Chemerys; As.prof. I. Stojanovsky; As.prof. V. Marina. As.prof. J. Pavlovsky
P-14 (<i>practical class 14</i>)	Thrombosis of the large veins. Classification. Clinical signs. Diagnosis. Differential diagnosis. Methods of conservative and surgical treatment. Post thrombophlebitic syndrome. Classification. Diagnosis. Management. Pulmonary embolism. Symptoms, diagnosis and treatment. Methods of prevention.	The issues of phlebology, conservative and surgical ways of treatment are studied.	Kn-1,2, 3,4 Ab- 1,3, 4,5,6	Prof. V. Kolomiytsev; Assoc.prof. V. Khomyak; Assoc.prof. O. Chemerys; As.prof. I. Stojanovsky; As.prof. V. Marina. As.prof. J. Pavlovsky
P-15 (<i>practical</i>)	Lymphedema of the extremities. Forms of the	To study the symptoms and	Kn-1,2, 3,4	Prof. V. Kolomiytsev;

<i>class 15)</i>	disease. Clinical signs. Diagnosis. Clinical course variants. Medical and surgical treatment.	diagnosis of lymphedema of the extremities. Modern methods of treatment.	Ab- 1,3, 4,5,6	Assoc.prof. V. Khomyak; Assoc.prof. O. Chemerys; As.prof. I. Stojanovsky; As.prof. V. Marina. As.prof. J. Pavlovsky
P-16 (<i>practical class 16)</i>)	Examination of patients. Inpatient medical record.	Collection of anamnesis, creation of a treatment plan and study of record keeping	Kn-1,2, 3,4 Ab- 1,3, 4,5,6	Prof. V. Kolomiitsev; Assoc.prof. V. Khomyak; Assoc.prof. O. Chemerys; As.prof. I. Stojanovsky; As.prof. V. Marina. As.prof. J. Pavlovsky
L-1 (<i>lecture 1</i>)	Surgical pathology of respiratory system. Medical aid out of hospital and in extreme situations.	Introduction to modern trends in the diagnosis and treatment of thoracic trauma and inflammatory diseases of the chest.	Kn-1,2, 3,4	Assoc.prof. V. Khomyak;
L-2 (<i>lecture 2</i>)	Acquired valvular heart disease: methods of treatment. Coronary artery disease: methods of treatment. Aortic aneurisms: clinical picture, diagnosis, treatment	Introduction to modern trends in the diagnosis and treatment of heart diseases.	Kn-1,2, 3,4	Assoc.prof. V. Khomyak;
L-3 (<i>lecture 3</i>)	Acute and chronic mesenteric ischemia.	At the lecture, students will learn about modern approaches to mesenteric ischemia management.	Kn-1,2, 3,4	Assoc.prof. V. Khomyak;
L-4 (<i>lecture 4</i>)	Endocrine surgery.	Students get acquainted with surgical diseases of the thyroid gland, adrenal and parathyroid glands.	Kn-1,2, 3,4	Assoc.prof. V. Khomyak;
L-5 (<i>lecture 5</i>)	Modern methods of treatment of pulmonary embolism	With the help of videos and presentations the modern approach to treatment and prevention of pulmonary embolism	Kn-1,2, 3,4	Assoc.prof. O. Chemerys;

		is studied.		
L-6 (lecture 6)	Clinical signs, diagnosis and treatment of peripheral arteries disease. Diagnosis and treatment of acute and chronic diseases of the veins of lower and upper extremities.	At the lecture, students will learn about the main problems of vascular surgery.	Kn-1,2,3,4	Assoc.prof. V. Khomyak;
SSW-1 (students' self-training work 1)	Preparation for practical classes – theoretical preparation and practical skills training 1. Surgical pathology of respiratory system. 2. Surgical pathology of heart. 3. Surgical pathology of mediastinum. 4. Surgical pathology of endocrine organs. 5. Surgical pathology of arteries. 6. Surgical pathology of venous and lymphatic system.	Preparation for practical classes, acquaintance with the main manifestations of surgical diseases, modern methods of diagnosis and treatment. Review of scientific materials.	C-1, C-2, AR-3, PR-16, PR-19-25	Prof. V. Kolomiitsev; Assoc.prof. V. Khomyak; Assoc.prof. O. Chemerys; As.prof. I. Stojanovsky; As.prof. V. Marina. As.prof. J. Pavlovsky
SSW-2 (students' self-training work 2)	Self-study of topics not included in the plan of classes: 1. International classification of functioning, disability and health. 2. Diabetic foot. 3. Modern methods of vascular stenting. 4. Endoscopic coronary stenting. 5. Allotransplants in vascular surgery. 6. Laser surgery in angiology.	Students study microangiopathy, which causes trophic disorders of the extremities in patients with diabetes; Modern technologies of minimally invasive endoscopic interventions; Modern trends in coronary aorta shunting; Modern materials and techniques used in vascular surgery; Techniques of non-invasive treatment of varicose veins.	Kn-1-8 Ab-1, Ab-3-5 Ab-7,8 C-2, AR-1, PR-1-12, PR-15-18, PR-21	Prof. V. Kolomiitsev; Assoc.prof. V. Khomyak; Assoc.prof. O. Chemerys; As.prof. I. Stojanovsky; As.prof. V. Marina. As.prof. J. Pavlovsky
SSW-3 (students' self-training work 3)	Individual independent work of students: 1. A review of scientific literature on topic by choice. 2. Participation in the writing of a scientific article or an essay on the topic. 3. Participation in student scientific group.	Familiarization with scientific achievements and the latest technologies in surgery. Improving disease recognition and communication skills with patients and colleagues. Participation in the	C-1, C-2, AR-1-3, PR-16-25	Prof. V. Kolomiitsev; Assoc.prof. V. Khomyak; Assoc.prof. O. Chemerys; As.prof. I. Stojanovsky; As.prof. V. Marina. As.prof.

	4. Participation in student scientific conference 5. Shifts in the surgical department, examination of patients	research work of the department.		J. Pavlovsky
8. Verification of study result				
<p style="text-align: center;">Current control</p> <p>Forms of control and evaluation system is carried out according to the requirements of the discipline program and instruction of the system of evaluation of learning activities of students in credit-modular system of educational process, approved by the Ministry of Healthcare of Ukraine (2005). Grade for the discipline is determined based on the results of the current study and evaluation of students' assimilation of the separate modules according to the Act on rating system of evaluation of learning activities of students in High Medical (Pharmaceutical) Educational Establishments in Ukraine.</p> <p>In carrying out all types of control (at each class, on the final class of semantic modules, on the final module control) will be applied objective methods for evaluating the level of knowledge and practical skills – MCQs for theoretical knowledge, individual control of students' actions, complicated clinical cases.</p> <p>Current control carried out at each class according to the specific goals of each topic. In evaluating the learning activities of students is planned use of standardized methods of control: MCQs solving, structured written answers on open questions, control of conduction of practical skills.</p> <p>Evaluation of current study: The share of each topic within a module is the same but may be different for different modules of single discipline. Evaluation of current educational system of students is described in the study program of the discipline. During each class of the module for current study student gets marks: "5" (excellent), "4" (good), "3" (satisfactory), "2" (unsatisfactory).</p> <p>Mark "5" (excellent) – gets student who deeply and reliably learned program material, thoroughly, consistently, competently and methodically explains theoretical knowledge, in whose answers theory is closely related with practice. The student does not hesitate to answer on modified tasks, easily cope with the clinical cases and questions of the second and third level of knowledge assessment, shows acquaintance with monographic literature, correctly justifies the decision, possesses elements of doctor's abilities, skills and techniques of practical work. Practical skills perform without error, in professional activities can efficiently use the acquired knowledge.</p> <p>Mark "4" (good) – gets student who knows program material correctly and essentially explains it, who does not make significant errors in responses to questions and in carrying out the necessary practical skills.</p> <p>Mark "3" (satisfactory) – gets student who has knowledge of the basic material only, but does not learned details, not correctly formulate answers, has difficulties in performing practical skills or performs them with significant errors, has difficulties in solving clinical cases of the third level of knowledge control.</p> <p>Mark "2" (unsatisfactory) - gets student who does not know a large part of the program material, makes substantial errors, uncertainly executes practical works, does not solve II-III level tasks of control.</p>				
Final control				
General evaluation system	Participation to the classes during the semester – 60%/40% on a 200-point scale.			
Evaluation scales	Traditional 4-point scale, multi-point (200-point) scale, ECTS rating scale.			
Conditions of admission to the final control	The student attended all practical (laboratory, seminar) classes and received at least 72 points for current performance.			
Type of final control	Methods of final control		Enrollment criteria	
Exam	1. Answers to three practical skills.		1. Each practical skill -	

	2. Solve 50 test tasks. 3. Solving three clinical cases.	0-2-3-5 points 2. Each test - 1 point 3. Each task - 0-2-3-5 points.
--	---	---

The maximal number of points that student can score for the current academic activity for admission to the exam / differentiated test is 120 points.

The minimal number of points that a student must score for the current academic activity for admission to the exam / differentiated test is 72 points.

The calculation of the number of points is based on the grades obtained by the student on a 4-point (national) scale during the study of the discipline, by calculating the arithmetic mean (AM), rounded to two decimal places. The resulting value is converted into points on a multi-point scale as follows:

$$x = \frac{AM \times 120}{5}$$

**Recalculation of the average mark for current activities in a multi-point scale
for disciplines that end with exam.**

4-point scale	200-point scale	4-point scale	200-point scale	4-point scale	200-point scale	4-point scale	200-point scale
5	120	4.45	107	3.91	94	3.37	81
4.95	119	4.41	106	3.87	93	3.33	80
4.91	118	4.37	105	3.83	92	3.29	79
4.87	117	4.33	104	3.79	91	3.25	78
4.83	116	4.29	103	3.74	90	3.2	77
4.79	115	4.25	102	3.7	89	3.16	76
4.75	114	4.2	101	3.66	88	3.12	75
4.7	113	4.16	100	3.62	87	3.08	74
4.66	112	4.12	99	3.58	86	3.04	73
4.62	111	4.08	98	3.54	85	3	72
4.58	110	4.04	97	3.49	84	< 3	Not enough
4.54	109	3.99	96	3.45	83		
4.5	108	3.95	95	3.41	82		

Percentage of students is determined among all students of the course within a corresponding specialty. Students who have been assessed FX, F ("2") are not ranked even after retaking the module. These students will automatically receive points E after retaking the module.

Mark 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

9. Policy of discipline

Academic Integrity: Students' work is expected to be their original research or reasoning. Lack of references to sources used, fabrication of sources, copying, interference in the work of other students, etc. are examples of possible academic dishonesty. Identification of signs of academic dishonesty in the student's work is the basis for non-enrollment by the teacher, regardless of the extent of plagiarism or deception.

Sources of training: the source base can be provided by the teacher exclusively for educational purposes without the right to transfer it to third parties. Students are encouraged to use other literature that is not listed in available thematic plans.

10. References

1. Haimovici's Vascular Surgery / E. Ascher, F.J. Veith, P. Gloviczki [et al.] – West Sussex: Wiley-Blackwell, 2012. – 1317p.
2. Essential practice of surgery: basic science and clinical evidence / J.A. Norton, R.R. Bollinger, A.E. Chang [et al.] – New York: Springer, 2003. – 761p.
3. Textbook of endocrine surgery / O.H. Clark, Q.-Y. Duh, E. Kebebew [et al.]. – Philadelphia: Elsevier, 2005. – 828p.
4. Emergency war surgery / M.A. Cubano, M.K. Lenhart, J.A. Bailey [et al.]. – Houston: Office of the Surgeon General, 2013. – 472p.
5. Schwartz's principles of surgery / C. B. Brunicaudi ed. – 9th ed. – Texas: The McGraw-Hill Professional, 2010. – 1888 p.
6. Sabiston Textbook of Surgery / C. Townsend, R.D. Beauchamp, B.M. Evers, K. Mattox ed. – 20th ed. – Elsevier, 2016. – 2176 p
7. Schwartz's principles of surgery 2-volume set / F. C. Brunicaudi, D.K. Andersen, T.R. Billiar [et al.] – 11th ed. – Texas: The McGraw-Hill Professional, 2019.

11. Equipment and software of the discipline / course

1. Guidelines for medical students.
2. MCQs for test control of knowledge.
3. MCQs, guidelines and selected materials of lectures on the platform for distance learning Misa.
4. Training-class of the Department.
5. Multimedia presentations, videos.

Equipment for the training-room of the Department of Surgery № 1

№.	Equipment	Qw
1.	Mannequin for cardiopulmonary resuscitation	1
2.	Ambu breathing bag	1
3.	Airways	2
4.	Phantom for stomach lavage	1
5.	Tube for stomach lavage	1
6.	Phantom for urinary bladder catheterization	1
7.	Urinary catheters: - metal - Foley catheter	1 3
8.	Model of the upper extremity for venous puncture	1
9.	Model of a limb wound	1
10.	Model of a hand with burns of various degrees	1
11.	Model of breast pathology	5
12.	Cramer splint for immobilization	3
13.	Sets for metal osteosynthesis	3
14.	Needle with adapter for puncture of the pleural cavity	1
15.	Blood grouping kit	1
16.	Negatoscope	1

12. Additional information

Responsible persons for the educational process at the department of Surgery №1 – ass. prof. Volodymyr Marina;
Responsible for student's research group of the department of Surgery №1 – assoc. prof. Ihor Stojanovsky.
Venue of classes – Department of Surgery №1, Lviv, Yu. Roofa str., 4.
Links to website - <https://new.meduniv.lviv.ua/kafedry/kafedra-hirurgiyi-1/>

V. Kolomyitsev, professor, MD, PhD, DSc;
V. Khomyak, MD, PhD, associate professor;
J. Pavlovsky, MD, PhD, assistant professor.

Chairman of Department

O. Lukavetsky, professor, MD, PhD, DSc

A handwritten signature in blue ink, likely belonging to O. Lukavetsky, the Chairman of the Department. The signature is stylized and cursive, with a prominent loop at the end.