

**PRIVATE HIGHER EDUCATIONAL INSTITUTION
"INTERNATIONAL ACADEMY OF ECOLOGY AND
MEDICINE"
Department of Surgery**

WORKING PROGRAM OF EDUCATIONAL DISCIPLINE

"General Surgery"

LEVEL OF HIGHER EDUCATION Second (master's) level
DEGREE OF HIGHER EDUCATION Master's degree
BRANCH OF KNOWLEDGE 22 Healthcare
SPECIALTY 222 Medicine

Reviewed and approved
at the meeting of the Academic Council
Protocol No. 1, dated August 31, 2019

Kyiv 2019

Working program of education discipline General Surgery for the preparation of students of higher education of the second (master's) level of higher education in specialty 222 Medicine.

Entry

The program of study of the discipline "General Surgery" is compiled in accordance with the Standard for the preparation of applicants for the second (master's) level of the field of knowledge 22 "Health care" specialty 222 "Medicine".

Description of the discipline

"General Surgery" is a clinical discipline, during the study of which students acquire basic theoretical knowledge on the organization of surgical care, desmurgy, organization of sanitary and epidemiological regime in a surgical clinic, bleeding and its control, transfusiology, anesthesiology and resuscitation, various trauma lesions, surgical infection, transplantology, oncology, examination of a surgical patient, patient care, etc. The assimilation of theoretical material is accompanied by the acquisition of appropriate integral, general and professional competencies.

Name of indicators	Field of knowledge, direction of training, educational qualification level	Characteristic academic discipline
		Full-time teaching
Number of credits 9	Branch of knowledge 22 "Health care"	Full course
	Specialty : 222 "Medicine"	
Modules 1	Qualifications of the educational "Master of Medicine"	A year of training
Content modules 2		IV
ECTS credits - 9.0		Semester
the total number of 270 hours		VII, VIII
	Form of education: daytime Type of discipline: mandatory	Lectures
		42 hours
		Practical
		133 hours
		Laboratory
		-
		Individual work
		95 hours
		Type of control:
		Diff. settlement

The organization of the educational process is carried out according to the requirements of the European Credit Transfer System.

The subject of study of the discipline "General Surgery" is: measures for the organization of the sanitary and epidemiological regime in the surgical clinic; dressing material and methods of its application; bleeding and methods of its temporary and final stop; transfusion of donor blood components, complications of blood transfusion and their prevention; Fundamentals of Anesthesiology and Resuscitation; clinic, diagnostics, first aid, principles of treatment for traumatic injuries; General Questions surgical infection; clinic, diagnosis, treatment, prevention of certain types of surgical infection; Fundamentals of Transplantology, Fundamentals of Clinical Oncology; Methodology of examination of a surgical patient.

Interdisciplinary relations: The discipline "General Surgery" is based on the knowledge gained by students during the study of such fundamental disciplines as anatomy, histology, physiology, pathological anatomy, pathological physiology, propaedeutics of internal medicine, pharmacology, and lays the foundations for the study of clinical surgery, traumatology and orthopedics, urology, neurosurgery, obstetrics, gynecology, anesthesiology, resuscitation and other academic disciplines that involve the use of surgical methods of treatment.

PURPOSE AND OBJECTIVES OF THE DISCIPLINE

The purpose of teaching the discipline is to provide students with knowledge of the organization of surgical care, recognition of the main pathological processes and injuries, the basics of clinical examination of surgical patients and the principles of surgical treatment.

The main tasks of studying the discipline are

- mastering the basic measures necessary for the organization of work in the surgical department and ensuring the prevention of the occurrence and spread of nosocomial infection;
- acquisition of practical skills in applying bandages using a variety of dressings;
- acquisition of practical skills for first aid in conditions such as bleeding, closed soft tissue damage, bone fracture, dislocation, long-term compression syndrome, wound, burn, frostbite; --- acquisition of practical skills for the preparation and transfusion of donor blood components;
- mastering knowledge of the basics of local and general anesthesia, acquiring the ability to choose a method of anesthesia depending on the patient's condition and existing surgical pathology;
- acquisition of practical skills for diagnosis and differential diagnosis in various surgical infectious processes, obtaining skills in choosing a treatment program and means of prevention in surgical infection;
- mastering the basics of plastic surgery and transplantology, possessing deontological and legal aspects of transplantation;
- acquire skills and abilities to examine a surgical patient and record the results in the relevant medical documentation;
- formation of moral, ethical and deontological qualities in professional communication with the patient.

COMPETENCIES AND LEARNING OUTCOMES

Competencies and learning outcomes, the formation of which is facilitated by the discipline According to the requirements of the Standard, the discipline ensures the acquisition of competencies by students:

general competences	
ZK-1	Ability to abstract thinking, analysis and synthesis.
ZK-2	Ability to learn and master modern knowledge.
ZK-3	Ability to apply knowledge in practical situations.
ZK-4	Knowledge and understanding of the subject area and understanding of professional activity.
ZK-5	Ability to adapt and act in a new situation.
ZK-6	Ability to make informed decisions.
ZK-7	Ability to work in a team.
ZK-8	Ability to interpersonal interaction.
ZK-10	Ability to use information and communication technologies.
ZK-11	Ability to search, process and analyze information from various sources.
ZK-12	Determination and persistence in relation to assigned tasks and assumed responsibilities.
Professionals competence (FC)	
FC-1	Ability to collect medical information about the patient and analyze clinical data.
FC-2	Ability to determine the necessary list of laboratory and instrumental studies and evaluate their results.
FC-3	Ability to establish a preliminary and clinical diagnosis of the disease.
FC-4	The ability to determine the necessary regime of work and rest in the treatment and prevention of diseases.
FC-5	The ability to determine the nature of nutrition in the treatment and prevention of diseases.
FC-6	Ability to determine the principles and nature of treatment and prevention of diseases.
FC-7	Ability to diagnose emergency conditions.
FC-8	Ability to determine tactics and provide emergency medical care.
FC-10	Ability to perform medical manipulations.
FC-11	Ability to solve medical problems in new or unfamiliar environments in the presence of incomplete or limited information, taking into account aspects of social and ethical responsibility.
FC-16	Ability to maintain medical documentation, including electronic forms.
FC-21	It is clear and unambiguous to convey one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists, in particular to people who are studying.
FC-24	Adherence to ethical principles when working with patients and laboratory animals.
FC-25	Adherence to professional and academic integrity, to be responsible for the reliability of the obtained scientific results.
Software the results training (PRN)	
PRN-1	Have thorough knowledge of the structure of professional activity. To be able to carry out professional activities that require updating and integration of knowledge. To be responsible for professional development, the ability for further professional training with a high level of autonomy.
PRN-3	Specialized conceptual knowledge, which includes scientific achievements in the field of health care and is the basis for conducting research, critical understanding of problems in the field of medicine and related interdisciplinary problems.
PRN-4	Identify and identify leading clinical symptoms and syndromes (according to list 1); according to standard methods, using preliminary data of the patient's history, data of

	the patient's examination, knowledge about the person, his organs and systems, establish a preliminary clinical diagnosis of the disease (according to list 2).
PRN-5	Collect complaints, history of life and diseases, evaluate psychomotor and physical development of the patient, state of organs and systems of the body, based on the results of laboratory and instrumental studies, evaluate information regarding the diagnosis (according to list 4), taking into account the age of the patient.
PRN-6	Establish the final clinical diagnosis by making a reasoned decision and analyzing the received subjective and objective data of clinical, additional examination, differential diagnosis, observing the relevant ethical and legal norms, under the supervision of the head physician in the conditions of the health care institution (according to list 2).
PRN-7	Assign and analyze additional (mandatory and optional) examination methods (laboratory, functional and/or instrumental) (according to list 4) of patients with diseases of organs and body systems for differential diagnosis of diseases (according to list 2).
PRN-8	Determine the main clinical syndrome or what causes the severity of the condition of the victim/injured (according to list 3) by making a reasoned decision and assessing the person's condition under any circumstances (in the conditions of a health care institution, outside its borders) , including in conditions of emergency and hostilities, in field conditions, in conditions of lack of information and limited time.
PRN-9	Determine the nature and principles of treatment (conservative, operative) of patients with diseases (according to list 2), taking into account the patient's age, in the conditions of a health care institution, outside its borders and at the stages of medical evacuation , including in field conditions, on the basis of a preliminary clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes, in case of the need to expand the standard scheme, be able to justify personalized recommendations under the control of the head physician in the conditions of a medical institution.
PRN-10	Determine the necessary mode of work, rest and nutrition on the basis of the final clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes.
PRN-14	Determine tactics and provide emergency medical care in emergency situations (according to list 3) in limited time in accordance with existing clinical protocols and treatment standards.
PRN-17	Perform medical manipulations (according to list 5) in the conditions of a medical institution, at home or at work based on a previous clinical diagnosis and/or indicators of the patient's condition by making a reasoned decision, observing the relevant ethical and legal norms.
PRN-18	To determine the state of functioning and limitations of a person's vital activities and the duration of incapacity for work with the preparation of relevant documents, in the conditions of a health care institution, based on data about the disease and its course, peculiarities of the person's professional activity, etc. Maintain medical documentation regarding the patient and the contingent of the population on the basis of regulatory documents.
PRN-21	Search for the necessary information in the professional literature and databases of other sources, analyze, evaluate and apply this information.
PRN-22	Apply modern digital technologies, specialized software, and statistical methods of data analysis to solve complex healthcare problems.
PRN-24	To organize the necessary level of individual safety (own and the persons he cares for) in case of typical dangerous situations in the individual field of activity.
PRN-25	It is clear and unambiguous to convey one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists.

According to with requirements educational and professional programs students should:

know:

- knows the environmental and epidemiological determinants of the most common surgical diseases;
- rules of qualification for basic surgical procedures and invasive diagnostic and therapeutic procedures, rules of their performance and the most frequent complications;
- postoperative treatment with analgesic therapy and postoperative monitoring;
- principles of perioperative safety, patient preparation for surgery, general and local anesthesia and controlled sedation;

be able:

- conduct a medical history on an adult patient;
- identify imminent life-threatening situations;
- do a thorough and focused physical examination on an adult patient;
- evaluate the patient's overall condition, level of consciousness, and awareness;
- develop diagnostic, therapeutic, and preventive treatment;
- adhere to the principles of asepsis and antisepsis;
- manage a simple wound, put on and change a sterile surgical dressing;
- examine breasts, lymph nodes, thyroid gland and abdominal cavity in terms of acute abdomen and perform digital rectal examination;
- manage external bleeding;
- can perform and interpret FAST ultrasound and eFAST ultrasound;
- can tie a single and surgical knot;
- to pass on information about the death of a close friend and relative;
- can examine the breasts, the abdomen and perform a digital rectal examination;
- assist in a typical surgical procedure, prepare the surgical field and apply local anesthesia to the operated area

is ready to:

- perceive and recognize own limitations and self-assessing educational deficits and needs;
- to be guided by the well-being of a patient;
- respect medical confidentiality and patients' rights;
- take actions towards the patient on the basis of ethical norms and principles, with an awareness of the social determinants and limitations of the disease;
- to establish and maintain deep and respectful contact with patients and to show understanding for differences in world views and cultures.

Information volume of the discipline

270 hours of 9.0 ECTS credits are allocated for the study of the discipline.

Chapter 1. General Aspects of Surgery.

Chapter 2. General Semiotics and Methods of Diagnostics of the Main Pathological Processes in Surgery. Examination, supervision and basics of rehabilitation of a surgical patient.

CHAPTER 1. GENERAL ASPECTS OF SURGERY.

Table of Contents 1. Introduction to Surgery. Asepsis and antiseptics in surgery. Desmurgy.

Topic 1: Aseptics in surgery. Modern methods of antiseptics and their characteristics.

The concept of nosocomial infection. Sanitary and epidemiological regime and its components. Ensuring the sanitary and epidemiological regime in the surgical department. Aseptics. Ways of spreading exogenous and endogenous infection. Preparation for sterilization, sterilization, sterility storage of surgical linen, dressings, surgical instruments, suture material. Treatment of the surgeon's hands and skin in the area of the surgical field. Prevention of the spread of HIV infection in the surgical department.

The history of the emergence and development of the antiseptic method. Methods of modern antiseptics, their characteristics. Mechanism of action of physical, chemical, biological antiseptics. Classification of chemical antiseptics. Methods of using antiseptics.

Topic 2: Desmurgy

Definition of desmurgy. Classification of dressings, dressings. Requirements for dressings. General rules for applying bandages. Typical bandages on the upper limb, head, neck, chest. Typical bandages on the abdomen, perineum, limbs. Types of hardening dressings. Typical plaster casts. Samples for the quality of gypsum powder. Rules of gypsum technique.

Table of Contents 2. Operation. Basic principles of anesthesia in surgery. Fundamentals of resuscitation.

Topic 3: Preoperative period. Surgery. Fundamentals of minimally invasive and organ-preserving surgery.

Preoperative period, its tasks. Features of preparing patients for planned and urgent operations. Preoperative period: care of the patient's skin, sanitation of the oral cavity, hair shaving, cleansing of the intestines with enemas, hygiene of linen and clothes of patients.

The concept of surgery. Classification of surgical operations according to the features of performance, by purpose, by purpose, by stages, etc. The main stages of the surgical operation.

Topic 4: Postoperative period.

Basic principles of patient care in the postoperative period. Prevention of possible complications. Nutrition of patients.

Topic 5: Local Anesthesia in Surgical Practice. Principles of General Anesthesia in Surgery.

Definition of local anesthesia. Types of local anesthesia (superficial, layer-by-layer infiltrative, regional, subarachnoid, epidural, intraosseous). Drugs and their doses for local anesthesia. Indications, contraindications for the use of various methods

local anesthesia. Possible complications during local anesthesia and their prevention.

Definition of general anesthesia. Types of general anesthesia. Indications and contraindications for different types of anesthesia. The concept of premedication. Drugs for inhalation and non- inhalation anesthesia. Mask anesthesia, technique. Stages of ether anesthesia. Structure of the apparatus for inhalation anesthesia. Types of breathing circuits. Algorithm of endotracheal anesthesia. Types of non-inhalation anesthesia, application.

Features of non-inhalation anesthesia. Possible complications with general anesthesia and their prevention.

Topic 6: Fundamentals of resuscitation.

Definition of Resuscitation. Terminal conditions and their clinical manifestations. Clinical death: clinic, diagnosis. Stages of resuscitation measures for clinical death according to Safar and their purpose. Indications and techniques for basic life support (SAV) measures. Monitoring the effectiveness of basic life support measures. Working out an algorithm of actions in the diagnosis of clinical death and carrying out basic life support measures. Ethical and legal aspects of resuscitation.

Table of Contents 3. Bleeding and blood loss. Fundamentals of Transfusiology.

Topic 7: The concept of bleeding and blood loss. Classification of bleeding.

Definition and classification of bleeding. Determination of blood loss, methods for determining the amount of blood loss, classification of blood loss depending on its magnitude. Adaptive pathophysiological changes in blood loss. Mechanism of self-control of bleeding. Ways to temporarily stop bleeding (finger pressure, pressure bandage, twist, tourniquet, etc.). Methods of final bleeding control: mechanical, physical, biological. The concept of vascular suture. Ways to restore the integrity of the damaged main channel.

Topic 8: The Doctrine of Blood Groups and the Rh Factor. Methods of their determination.

History of the development of blood transfusion. Aspects of the Doctrine of Blood Groups. Methods for determining blood group by ABO and Rh-factor systems. Method for determining individual compatibility according to the ABO system, options for determining individual compatibility according to the Rh factor system. Indications and contraindications for transfusion of blood and its components. Ways and methods of blood transfusion. Mechanism of action of transfused blood and its components. Macroscopic determination of the quality of a blood product. Conducting a test for biological compatibility. before transfusion.

Topic 9: Components, Blood Products and Blood Substitutes, Blood Transfusion Technique and Blood Substitute Transfusion. Errors and complications with blood transfusions and blood substitutes.

Blood substitutes, their classification, indications and methods of use. Classification of drugs containing blood components. Organization and conduct of blood transfusion surgery. Completion of the blood transfusion protocol. Complications in transfusion of blood components, their classification, pathogenesis, clinic, differential diagnosis. Blood transfusion shock, clinic, diagnosis, principles of treatment.

Prevention of complications during blood transfusion. Aspects of Prevention of Transmission of Infectious Disease by Transfusion of Blood Components

Section II. General semiotics and methods for diagnosing the main pathological processes in surgery. Examination, supervision and basics of rehabilitation of a surgical patient.

Table of Contents 1. Examination of a surgical patient. General semiotics of closed injuries of soft tissues, internal organs, bones and joints

Topic 10: Clinical, laboratory and instrumental methods of examination of surgical patients.

Methods of clinical examination of surgical patients. The main laboratory, endoscopic, radiation, hardware methods of examination of surgical patients with lesions of the gastrointestinal tract, cardiovascular, respiratory and excretory systems.

Topic 11: Closed injuries to soft tissues, skull, chest, and abdomen. Semiotics of bone and joint injuries

The concept of injuries. Types of soft tissue damage: bruise, concussion, rupture. Pathomorphological and pathophysiological aspects in closed soft tissue injuries. Clinical

manifestations, diagnosis, differential diagnosis of closed soft tissue injuries. Clinical manifestations of closed damage to the brain, thoracic organs, abdominal organs, organs of the urinary system. First aid and features of transportation of victims with various closed injuries of soft tissues. Prevention of traumatic shock. Principles of treatment of soft tissue injuries in a hospital setting. Fractures and dislocations: classification; clinical manifestations; diagnostics; first aid; Principles of treatment. Definition of bone fracture. Classification of fractures. The mechanism of fracture and its effect on the displacement of bone fragments. Pathophysiological and pathomorphological aspects of bone tissue regeneration in fracture. Clinical manifestations of fracture of the cat, methods of instrumental diagnosis of fractures. Tasks and algorithm for providing first aid for a bone fracture. Prevention of traumatic shock at the pre-hospital stage of care for a victim with a fracture. Means of transport immobilization and features of their use in bone fractures. Principles of treatment of bone fractures in a hospital setting. Definition of Dislocation. Classification of dislocations. Pathophysiological and pathomorphological aspects of dislocation. Clinical manifestations and diagnosis of dislocation. Elements of first aid for dislocation.

General conditions for reduction in dislocation and methods of reduction depending on the location of the dislocation. Principles of dislocation treatment.

Topic 12: Polytrauma. Multiple injuries, combined and combined injuries. Traumatic shock. Long-term compression syndrome: pathogenesis, clinic, diagnosis, first aid, principles of treatment.

Definition of polytrauma, classification. Modern methods of diagnosis and treatment in the conditions of hostilities and natural disasters. Traumatic shock: pathogenesis, clinical manifestations, diagnosis, principles of developmental prevention and treatment at the pre-hospital and hospital stages of providing assistance to the victim. Long-term compression syndrome: definition, pathophysiological and pathological aspects, clinical manifestations, classification, diagnosis. Algorithm of first aid for long-term compression syndrome. Principles of treatment in a hospital setting. Algorithm for POCUS, including FAST, eFAST, BLUE, FEEL.

Table of Contents 2. Fundamentals of semiotics of changes in tissues caused by the influence of environmental factors. Open damage.

Topic 13. Semiotics of wounds. Phases of the wound process. Treatment of fresh wounds. Basic principles of treatment of infected and purulent types of wounds.

Definition of wound, wound structure, classification of wounds, characteristics of different types of wounds. Pathophysiological and pathomorphological aspects in wounds. Elements of first aid for a wound. Conditions conducive to the development of an infectious process in a contaminated wound. Prevention of the development of an infectious process in an accidental contaminated wound (primary surgical debridement). Pure postoperative surgery, its features. Healing of a clean wound by primary tension (stages of the wound process in a clean wound). Primary surgical suture and its varieties. Treatment of a clean wound in the postoperative period. Pathomorphological features of a gunshot wound. Features of structural and functional changes in tissue from the type of weapon. Primary surgical treatment of gunshot wounds, its features. depending on the stage of the wound process. Surgical debridement of a purulent wound: indications, contraindications, technique. Types of drainage of a purulent wound. Types of secondary surgical sutures, indications and contraindications for their use. Surgical operations that can be used in the stage of epithelialization and scarring. Clinical analysis of a patient with an infected wound.

Topic 14. Burns: classification, clinic. First aid for burns. Burn disease. Electrical trauma. Treatment of burns. Frostbite.

Definition of burn. Clinical manifestations depending on the degree of damage. Algorithm for providing first aid for thermal burns. Symptoms of varying degrees of burns with chemical compounds, features of first aid for this type of lesion. Radiation burn: causes, clinical manifestations, first aid, prevention. Determination of the depth and area of the lesion during the burn, the importance of these data in the provision of medical care to the victim. Features of damage by light radiation of a nuclear explosion, incendiary mixtures, first aid for these injuries.

Definition of burn disease. Periods of burn disease. Pathophysiological and pathomorphological aspects of burn disease periods. Principles of topical treatment of burns. Features of treatment of different periods of burn disease. Calculation of transfusion volume in the treatment of burn shock. Types of surgical operations in the treatment of burns. Electrotrauma: pathomorphological and pathophysiological aspects; clinical manifestations, features of first aid.

Definition of frostbite. Factors that contribute to the occurrence of cold injury. Periods of frostbite. Pathophysiological and pathomorphological aspects of the occurrence and course of frostbite lesions. Classification of frostbite: degrees of damage and their clinical manifestations. Features of providing first aid to a victim with frostbite in the pre-reactive period. Principles of treatment of frostbite in the post-reactive period. Surgical operations used in the treatment of frostbite.

Table of Contents 3. Semiotics of surgical infection. Semiotics of trophic disorders.

Topic 15: Semiotics of acute nonspecific surgical soft tissue infection. Semiotics of purulent diseases of the hand, bones, joints and synovial bags.

Definition of surgical infection. Classification of surgical infection. Causative agents of surgical infection and their characteristics. Pathophysiological and pathomorphological aspects of the development of local and general body response in surgical infection. Stages of the pathological process in surgical infection. Diagnosis and differential diagnosis of the stages of the course

Surgical infectious process. Principles of treatment of surgical infection. Abscess: definition, clinical manifestations, diagnosis, principle of treatment. Phlegmon: definition, features of the clinical course, diagnosis, principle of treatment. Acute purulent diseases of soft tissues: boil, carbuncle, hidradenitis, mastitis, paraproctitis, erysipelas. Definition and features of the clinical picture in these

surgical infectious processes depending on the stage of development. Clinical classification of mastitis, paraproctitis. Clinical forms of erysipelas. Surgical tactics and complex treatment for these diseases, depending on the clinical form and stage of development of the pathological process.

Definition of panaritium, classification of panaritium. Definition of phlegmon of the hand and its classification. Features of the anatomical structure of the hand, affecting the clinic and the development of the infectious process. Clinic for different forms of panaritis, diagnosis, principles and features of treatment of various forms of panaritis. Clinical manifestations of phlegmon of the hand, depending on the type and stage of development of the infectious process. Diagnosis, differential diagnosis of phlegmon of the hand, principles of surgical treatment. Definition of lymphangitis, lymphadenitis. Etiology, pathophysiology, and pathomorphological aspects of lymphangitis and lymphadenitis. Clinical forms of lymphangitis. Principles of surgical tactics and treatment for lymphangitis and lymphadenitis.

Topic 16: Semiotics of acute and chronic specific surgical infection. Sepsis.

Etiology, pathogenesis, clinic, diagnosis, principles of treatment of acute specific surgical infection (gas gangrene, tetanus, wound diphtheria, anthrax, rabies). Emergency tetanus prophylaxis.

Etiology, pathogenesis, clinic, diagnosis, principles of treatment of chronic specific surgical infection (tuberculosis of bones and joints, actinomycosis).

Definition of sepsis (sepsis-3). Historical aspects of the formation of the concept of sepsis. Etiology of sepsis, pathogenesis, classification, clinical manifestations. Algorithm and clinical criteria for diagnosing sepsis. Principles of complex treatment of surgical sepsis. Septic shock: criteria for diagnosis, principles of treatment. Multiple organ failure syndrome: the main indicators by which the insufficiency of a particular system is determined. The concept of detoxification, methods and indications for use. Immunotherapy, indications and principles of administration. Necrosis. Necrosis. Gangrene. Ulcers. Fistulas. Causes. Clinical manifestations, diagnosis, treatment. Definition of necrosis. Causes of necrosis, classification of necrosis, general principles of diagnosis and treatment. Definition of gangrene, pathogenesis, classification, diagnosis, principles of treatment. Stages of development of acute and chronic limb ischemia. Ulcers: definition, causes, pathogenesis, clinical manifestations, complications, principles of treatment. Fistulas: definition, causes of formation, pathogenesis, clinical manifestations, diagnostic methods, principles of local treatment, surgical tactics

Topic 17: Protection of medical history. Exam.

Students demonstrate knowledge of the anamnesis, results of objective and instrumental examination of the patient under their supervision. Students substantiate the diagnosis of a particular diagnosis, demonstrate certain methods and methods of objective examination of the patient, explain the results obtained by them during curation. Discussion of the applied method of treatment in the supervised patient. Analysis and discussion of mistakes made in the design of the educational form of the inpatient card.

Structure of the academic discipline

Topic	Lecture	Practical	Independent work
Topic 1. Asepsis in surgery. Modern methods of antiseptics and their characteristics.	4	6	6
Topic 2. Desmurgy.	-	12	5
Topic 3. Preoperative period. Surgery. Fundamentals of minimally invasive and organ-preserving surgery.	5	10	6
Topic 4. Postoperative period.	-	6	6
Topic 5. Local anesthesia in surgical practice. Principles of general anesthesia in surgery.	5	12	6
Topic 6. Fundamentals of resuscitation.	-	12	6
Topic 7. The concept of bleeding and cross. Classification of bleeding.	4	6	6
Topic 8. The doctrine of blood groups and the Rh factor. Methods of their determination.	4	6	6

Topic 9. Components, blood products and blood substitutes, blood transfusion techniques and blood substitute transfusions. Errors and complications with blood transfusions and blood substitutes.	5	9	6
Topic 10. Clinical, laboratory and instrumental methods of examination of surgical patients.	-	12	6
Topic 11. Closed soft tissue, skull, chest, and abdomen injuries. Semiotics of bone and joint injuries	-	6	6
Topic 12. Polytrauma. Multiple injuries, combined and combined injuries. Traumatic shock. Long-term compression syndrome: pathogenesis, clinic, diagnosis, first aid, principles of treatment; POCUS sonography.	5	12	6
Topic 13. Semiotics of wounds. Phases of the wound process. Treatment of fresh wounds. Basic principles of treatment of infected and purulent types of wounds.	-	6	6
Topic 14. Burns, classification, clinic. Burn injury. Frostbite.	5	6	6
Topic 15. Semiotics of acute nonspecific surgical soft tissue infection. Semiotics of purulent diseases of the hand, bones, joints and synovial bags.	-	6	6
Topic 16. Semiotics of Acute and Chronic Specific Surgical Infection	5	6	6
TOTAL	42	133	95

Lecture topics

No .	Title of the lecture
1	Aseptics and antiseptics in surgery
2	Anesthesia during surgery
3	Bleeding, blood loss. Blood Types and Transfusion Methods
4	Blood substitutes and complications of transfusions
5	Injuries. Closed damage to tissues and organs. Wounds, principles of wound treatment. Burns.
6	Surgical infection. The main types of soft tissue infections. The main types of acute specific surgical infection.
7	General surgical infection (sepsis). Modern methods of detoxification of the body. Local necrosis of organs and canines
8	Fundamentals of Clinical Oncology. Fundamentals of Plastic Surgery and Transplantology

Topics of practical classes

No .	Title of the lecture
1	Aseptics and antiseptics in surgery
2	Desmurgy.
3	Preoperative period. Surgery. Fundamentals of minimally invasive and organ-preserving surgery.
4	Postoperative period.
5	Local anesthesia in surgical practice. Principles of general anesthesia in surgery.
6	Fundamentals of resuscitation.
7	The concept of bleeding and croloss. Classification of bleeding.
8	The doctrine of blood groups and the Rh factor. Methods for their determination.
9	Components, blood products and blood substitutes, blood transfusion techniques and blood substitute transfusions. Errors and complications with transfusions of blood and blood substitutes.
10	Clinical, laboratory and instrumental methods of examination of surgical patients.
11	Closed soft tissue, skull, chest, and abdomen injuries. Semiotics of bone and joint injuries
12	Polytrauma. Multiple injuries, combined and combined injuries. Traumatic shock. Long-term compression syndrome: pathogenesis, clinic, diagnosis, first aid, principles of treatment. POCUS sonography training, FAST, eFAST included.
13	Semiotics of wounds. Phases of the wound process. Treatment of fresh wounds. Basic principles of treatment of infected and purulent types of wounds
14	Burns, classification, clinic. Burn injury. Frostbite
15	Semiotics of acute nonspecific surgical soft tissue infection. Semiotics of purulent diseases of the hand, bones, joints and synovial bags.
16	Semiotics of Acute and Chronic Specific Surgical Infection.

Independent work

No .	Title of the lecture
1	Preparation of theoretical material and practical skills for practical training
2	Curation of the patient. Writing a medical history.

Individual tasks

Individual tasks are one of the forms of organization of learning, which aims to deepen, generalize and consolidate the knowledge that students receive in the learning process, as well as the application of this knowledge in practice. Individual tasks are performed by students independently under the guidance of a teacher.

Individual tasks include: writing essays and creating multimedia presentations with reports at meetings of the scientific student circle of the department, participation in the research work of the department, participation in writing abstracts and articles of the report at student scientific conferences.

List of tasks for the student's individual work: Defense of an individual research project; participation in the work of the student scientific group and speeches at scientific forums; participation in the student Olympiad in the discipline; selection of video and audio materials from the sections of the discipline; selection of materials and creation of a presentation on the relevant topic or section of the discipline.

Teaching Methods

According to the sources of knowledge, teaching methods are used: verbal – storytelling, explanation, lecture, instruction; visual – demonstration, illustration; practical – practical work, problem solving. According to the nature of the logic of cognition, the following methods are used: **analytical, synthetic, analytical-synthetic, inductive, deductive**. According to the level of independent mental activity, the following methods are used: problem-based, searching, research.

1. Verbal methods: lecture, interactive lecture, conversation;
2. Visual methods: illustration, demonstration, demonstration at the patient's bedside;
3. Practical methods: performing practical work and solving situational tasks to develop skills and abilities;
4. Independent work of students on comprehension and assimilation of new material;
5. Use of control and educational computer programs;
6. Innovative teaching methods: Case-based learning; educational discussion; educational debates; role play; Team-based learning; think-pair-share;

Types of training sessions according to the curriculum are: lectures; practical classes; independent work of students.

Control methods

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

The forms of current control are: oral questioning (frontal, individual, combined), interview; practical verification of the formed professional skills (carried out based on the results of solving clinical cases, working with medical documentation, performing practical skills, working at the patient's bedside); test control ("open" and "closed" test tasks).

Ongoing control is mandatory. During the assessment of the mastery of each topic in all disciplines of the curriculum for the current educational activity, the student is given grades on a 4- point (traditional scale), taking into account the approved evaluation criteria for the discipline. All types of work provided for in the curriculum are taken into account. The student must receive a grade on each topic. The teacher conducts a survey of each student in the group at each lesson and assigns a grade in the register of attendance and student performance according to the traditional scale ("5", "4", "3", "2").

When assessing the current educational activity of a student, 20% of the grade is the student's independent work, which takes into account the knowledge of the topic of self-study and the performance of work in a notebook.

The final (final) control is carried out:

- in the form of a written test, which includes test tasks, theoretical questions
- control of practical skills (solving clinical cases, assessment of the correctness of practical skills - practice-oriented exam).

In accordance with the specifics of professional training, preference is given to test and practice-oriented control.

Form of final control of academic performance

The final control in the discipline is carried out on the basis of the control of theoretical knowledge, practical skills and abilities.

An exam is a form of final control of the student's mastery of theoretical and practical material in an academic discipline.

The scheme of accrual and distribution of points received by students.

The maximum number of points for the discipline is 200 points. The ratio between the results of the assessment of current educational activities and the final control of knowledge is 60% and 40%.

The study of the discipline ends with the final control in the form of a differential test. Only those students who do not have academic arrears (all missed classes have been worked out) and their average score for the current educational activity in the discipline is not less than the mark "3" are allowed to differentiate the credit.

The maximum number of points that a student can score for the current educational activity for admission to the exam is 120 points and is determined as the sum of the arithmetic mean of all grades received in the semester.

The minimum number of points that a student must score for the current academic activity for admission to the exam is 72 points. Recalculation of the average grade for the current academic performance (on a 120-point scale) in Table. 1.

Table 1. Conversion of the average grade for the current performance into a multi-point scale for disciplines ending with the exam.

4-points scale	200-point scale	4-point scale	200-point scale	4-point scale	200-point scale
5	120	4.29	103	3.58	86
4.96	119	4.25	102	3.54	85
4.92	118	4.21	101	3.50	84
4.87	117	4.17	100	3.46	83
4.83	116	4.12	99	3.42	82
4.79	115	4.08	98	3.37	81
4.75	114	4.04	97	3.33	80
4.71	113	4.00	96	3.29	79
4.67	112	3.96	95	3.25	78
4.62	111	3.92	94	3.21	77
4.58	110	3.87	93	3.17	76
4.54	109	3.83	92	3.12	75
4.50	108	3.79	91	3.08	74
4.46	107	3.75	90	3.04	73
4.42	106	3.71	89	3	72
4.37	105	3.67	88	Less than 3	Not enough

4.33	104	3.62	87		
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The maximum number of points that a student can score when taking the exam is 80 (minimum number – not less than 50).

Discipline assessment is defined comprehensively as the sum of points for the current educational activity and points for the exam .

From the allocated 120 points for the current educational activity, 4 to 12 additional points are allocated for the assessment of individual independent work of higher education applicants, according to the work curriculum. Encouragement points are added to the final grade for the discipline at the end of its study.

Points from the discipline for students who have successfully completed the program are converted into the national scale and the ECTS system (tables 2).

Rating scale: national and ECTS.

Rating scale: national and ECTS			
The sum of points for all types educational activity	Evaluation of ECTS	Evaluation on a national scale	
		for an exam, a diploma	for credit
180-200	A	perfectly	counted
160-179	B	okay	
150-159	C		
130-149	D	satisfactorily	
120-129	E		
50-119	FX	unsatisfactory with the possibility of refolding	not included with the possibility of refolding
0-49	F	unsatisfactory with mandatory restudy disciplines	not enrolled with mandatory restudy disciplines

Methodological support

1. Working curriculum of the discipline;
2. Plans of lectures, practical classes and independent work of students;
3. Abstracts of lectures on the discipline;
4. Methodical instructions for practical classes for students;
5. Methodical materials that ensure independent work of students;
6. Test and control tasks for practical classes;
7. List of exam questions.

List of theoretical questions to prepare for the final lesson for:

Section I. General Aspects of Surgery.

1. Desmurgy is a concept. Development of desmurgy. Materials used in desmurgy. Main Types of Headbands
2. Desmurgy is a concept. Bandaging rules. Main types of limb bandages
3. Desmurgy is a concept. Bandage-free bandages. Main types of bandages on the trunk and perineum
4. Antiseptic. The essence of the method, the main types.
5. Physical antiseptic. Methods of drainage in surgery. Sorbents. Environmental factors
6. Mechanical antiseptic. Primary and secondary surgical debridement of the wound, wound toileting.

7. Chemical antiseptic
8. Biological antiseptics.
9. Nosocomial infection, ways of spread and its prevention. Endogenous infection and its
10. importance in surgery.
11. **Organization of the work of the purulent dressing. Features of dressing and care for patients with anaerobic infection**
12. Aseptics. Definition. Prevention of airborne infection.
13. Principles of operation of the autoclave, methods of sterilization of dressings and surgical linen.
14. **Sterility control methods.**
15. Pre-sterilization preparation of instruments and methods of their sterilization. Methods of control of pre-sterilization treatment of instruments.
16. Chemical methods of sterilization. Features of sterilization of instruments with an optical system.
17. **Classification and requirements for suture material. Methods of sterilization of suture material.**
18. Implantation infection. Source. Features of prevention.
19. Methods of preparing the surgeon's hands for surgery.
20. **Methods of preparation and processing of the operative field.**
21. **Basic principles of organization of work in the operating room and dressing room.**
22. Surgery. Classification depending on the term and scope of implementation.
23. Classification of surgical operations depending on the purpose. Simultaneous and combined operations.
24. One-time, multi-moment, repeated operations
25. **Typical, atypical, special surgical operations. Classification of operations according to the degree of infection**
26. The main stages of the surgical operation.
27. Major intraoperative complications. Intraoperative prophylaxis of infectious complications.
28. **Features of preparation of patients for planned and urgent operations.**
29. **Preoperative period. Definition, main tasks of the diagnostic stage**
30. Preoperative period. Direct preparation of the patient for surgery
31. Degrees of risk of surgery.
32. Postoperative period. Definitions, tasks.
33. **Physiological phases of the postoperative period and clinical stages.**
34. **Uncomplicated postoperative period. Basic principles of postoperative management.**
35. Complications in the postoperative period from the wound, treatment of these complications, their prevention.
36. Complications in the postoperative period from the cardiovascular system and respiratory
37. system, treatment of these complications, their prevention.
38. **Complications in the postoperative period from the gastrointestinal tract and urinary system, treatment of these complications, their prevention**
39. Prevention and treatment of pressure ulcers.
40. Bleeding. Definition. Classification.
41. Classification of bleeding depending on severity. Changes in the body with acute blood loss. Compensatory and adaptive mechanisms.
42. Bleeding into the abdominal cavity, clinic, diagnosis. Treatment.
43. Bleeding into the chest cavity, clinic, diagnosis. Thoracic drainage methods

44. Methods for determining the volume of blood loss.
45. Temporary methods of stopping bleeding. Rules for applying a tourniquet
46. Temporary methods of stopping bleeding. Classification. The main points of digital pressure of the arteries.
47. **Mechanical methods of definitive bleeding control.**
48. Physical and chemical methods of definitive bleeding control.
49. Biological methods of definitive bleeding control
50. Blood loss, classification according to severity, principles of treatment.
51. Hemorrhagic shock. Degrees of severity. Stages of development.
52. **Basic principles of treatment of hemorrhagic shock**
53. The Doctrine of Blood Groups. The concept of ABO and Rh-factor systems.
54. Basic methods for determining blood groups according to the ABO system. The concept of blood chimeras.
55. Basic methods for determining the Rh factor. Possible errors.
56. **The concept of standard serums. Errors in determining blood groups are possible.**
57. Modern rules for blood transfusion. The doctor's procedure for blood transfusion.
58. Observation of the patient after blood transfusion. Documentation that is completed during a blood transfusion.
59. Mechanism of action of transfused blood.
60. **Methods of blood transfusion. Autoblood transfusion**
61. Methods of donor blood transfusion.
62. Macroscopic assessment of the suitability of blood for transfusion
63. Method of blood transfusion. Test for individual compatibility according to the ABO system.
64. Blood transfusion technique. Test for individual compatibility by Rh-factor. 63. Blood transfusion technique. **Biological test.**
65. Indications for blood transfusion.
66. Contraindications to blood transfusion.
67. Types of whole blood. The concept of component hemotherapy.
68. **Main components of blood. Indications for their use.**
69. **Blood products of complex and immunological action.**
70. Blood products are correctors of the hemostasis system.
71. Geodynamic blood substitutes
72. Blood substitutes of detoxification action.
73. Blood substitutes for parenteral nutrition
74. **Complications of mechanical blood transfusion**
75. Classification of complications in blood transfusion.
76. Pyrogenic blood transfusion reactions. Clinic, diagnosis, treatment and prevention.
77. Allergic blood transfusion reactions. Clinic, Diagnosis, Treatment and Prevention
78. **Complications in transfusion of blood incompatible with the Rh factor and other antigenic systems.**
79. Massive blood transfusion syndrome. Clinic, Diagnosis, Treatment and Prevention
80. Complications of an infectious nature. Clinic, Diagnosis, Treatment and Prevention
81. The concept of donation. Donor Groups
82. Indications and contraindications for donation.
83. Examination of donors. Methods of preservation of blood and its preparations.
84. Local anesthesia. Classification. Indications, contraindications.
85. Characteristics of the main anesthetics for local anesthesia.

86. Methods of local anesthesia, novocaine blockades.
87. Infiltration anesthesia according to A. V. Vishnevsky. Possible complications.
88. Conduction anesthesia. Possible complications.
89. Spinal anesthesia, technique. Possible complications.
90. Epidural. Technique. Possible complications.
91. General anesthesia, definition. Basic methods of general anesthesia.
92. Inhalation anesthesia. Methods. Drugs. Possible complications
93. Modern combined incubation anesthesia. Advantages.
94. Terminal states.
95. Collapse. Clinic, diagnostics. First aid.
96. Shock. Definition. The concept of shock organs.
97. Basic principles of resuscitation. Basic cardiopulmonary resuscitation
Methods of artificial lung ventilation. Effectiveness of resuscitation measures.
98. Prordial stroke Defibrillation. Intracardiac administration of drugs.
99. Indications and techniques for artificial lung ventilation and indirect cardiac massage.

List of theoretical questions to prepare for the final lesson for:

Section II. General Semiotics and Methods for Diagnosing the Main Pathological Processes in Surgery. Examination, Curation and Basics rehabilitation of a surgical patient.

1. Classification of wounds, clinical signs.
2. Physical, clinical, and biochemical changes in the wound. Pathogenesis of the wound process.
3. Phases (stages) of the wound process.
4. Wound healing by primary, secondary tension and under the scab. Pathomorphology.
5. First aid for an existing wound.
6. Primary surgical debridement of the wound.
7. Types of surgical sutures when performing primary surgical debridement of the wound.
8. Classification of wounds depending on the degree of infection.
9. Treatment of wounds in the first phase of the wound process.
10. Treatment of wounds in the second phase of the wound process.
11. Treatment of wounds in the third phase of the wound process
12. Surgical debridement of a purulent wound, types of sutures depending on the time of application.
13. Contusions, sprains, tears of soft tissues. Clinic, diagnosis, treatment.
14. Chest damage. Types of pneumothorax Clinic, diagnosis, treatment
15. Closed injuries of the skull – concussion, contusion, compression. Clinic, diagnosis, treatment.
16. Traumatic shock. Phases of development. Clinic, diagnosis, treatment.
17. Fractures. Classification, clinic, diagnosis.
18. Bone tissue regeneration. Stages of callus formation.
19. First aid for fractures. Immobilization, transportation.
20. Basic principles of fracture treatment. Open and closed reduction
21. Conservative method of treating fractures with a plaster cast.
22. Treatment of fractures by permanent traction.
23. Main types of surgical treatment of fractures.
24. Complications in the treatment of fractures, their treatment, prevention.
25. Dislocations. Mechanism of occurrence. Classification. Treatment methods.

26. Long-term compression syndrome. Clinic, treatment.
27. Burns, classification depending on the degree of damage. Methods for determining the depth of the burn
28. Burn disease, periods, clinical diagnosis.
29. **Methods for determining the area of the burn surface of the skin.**
30. Local treatment of burns. Features of the formation of scars, pores, burns.
31. Methods of surgical treatment of burns.
32. General principles of treatment of burn disease.
33. Characteristics of chemical burns
34. Electrical trauma, features of the effect on the human body. First aid when exposed to electric current.
35. Frostbite, classification, clinic, diagnosis, treatment.
36. Frostbite, periods depending on the course. General hypothermia.
37. Features of radiation burns. Their treatment.
38. General principles of conservative and surgical treatment of frostbite depending on periods.
39. Surgical infection. Definition, classification.
40. Acute purulent infection. Classification, etiology, pathogenesis, entrance gate. Specific and non-specific mechanisms of the body's defense.
41. Clinic of acute surgical infection – local signs of inflammation, accumulation of pus. Local complications of purulent processes.
42. General reaction of the body with a purulent infection, changes in laboratory parameters
43. Basic principles of treatment of local purulent infection
44. Basic principles of antibiotic therapy in acute purulent infection. The concept of endolymphatic therapy.
45. Basic principles of detoxification therapy in acute purulent infection. The concept of immunocorrection
46. Chronic purulent infection. Definition, classification
47. Boil. Etiology, pathogenesis, clinic, treatment.
48. Furunculosis. Etiology, pathogenesis, clinic, treatment.
49. Boil, carbuncle of the face, features, clinic, treatment.
50. Carbuncle, etiology, pathogenesis, diagnosis, treatment.
51. Abscess. Etiology, clinic, treatment.
52. Phlegmon, clinic, diagnosis, treatment.
53. Differential diagnosis of abscess, cellulitis and carbuncle
54. Differential diagnosis of abscess, cellulitis and hidradenitis
55. Differential diagnosis of abscess, adenophlegmon and carbuncle
56. Differential diagnosis of abscess, cellulitis and erysipelas
57. Phlegmons of the hand. Classification. Clinic of phlegmon of the rear of the hand diagnosis, treatment.
58. Phlegmons of the hand. Clinic of phlegmon of the palmar surface of the hand diagnosis, treatment
59. Hidradenitis, clinic, diagnosis, treatment.
60. Lymphangitis, lymphadenitis. Causes, clinic, diagnosis
61. Purulent lactational mastitis. Causes, clinic, diagnosis, treatment. 62. Purulent lactational mastitis. Causes, clinic, prevention.

62. Erysipelas. Etiology, pathogenesis, classification, clinic, treatment. 64. Paraproctitis. Clinic, classification, diagnosis, treatment.
63. Panaritium. Etiology, pathogenesis, classification.
64. Panaritium. Clinic, diagnosis, treatment.
65. Panaritium. Clinic, differential diagnosis, treatment of subcutaneous and subungual panaritium
66. Panaritium. Clinic, differential diagnosis, treatment of tendon panaritis.
67. Basic principles of treatment and diagnosis of panaritium. Complications of panaritium
68. The main cellular spaces of the hand. Phlegmons of the hand. Etiology, classification
69. Phlegmons of the back of the hand. Clinic, diagnosis, treatment.
70. Phlegmons of the palmar surface of the hand. Clinic, diagnosis, treatment.
71. Acute purulent arthritis. Clinic, diagnosis, treatment
72. Acute purulent bursitis. Clinic, diagnosis, treatment
73. Algorithm for diagnosing sepsis.
74. Sepsis, septic shock clinic, diagnosis, markers of sepsis
75. Sepsis, basic principles of treatment
76. Endogenous intoxication in surgical infection. Features of the course of acute purulent diseases in patients with AIDS and drug addiction
77. Tetanus. Etiology, classification, clinic, diagnosis, treatment.
78. Emergency prophylaxis of tetanus. Indications.
79. Anthrax carbuncle. Etiology, clinic, treatment.
80. Diphtheria wounds. Clinic, diagnosis, treatment
81. Anaerobic clostridial infection. Etiology, pathogenesis, clinic, treatment.
82. Anaerobic non-clostridial infection. Etiology, pathogenesis, clinic, treatment 85. Gas gangrene. Etiology, pathogenesis, clinic, diagnosis, treatment.
83. Basic principles of prevention and treatment of anaerobic infection.
84. Putrefactive infection. . Etiology, pathogenesis, clinic, diagnosis, treatment. 88. Osteoarticular tuberculosis. Pathological anatomy, forms, clinic, treatment. 89. Features of bone damage in osteomyelitis and tuberculosis.
85. Syphilis surgically. Diagnostics. Features of wound care
86. Causes and types of tissue necrosis.
87. Dry and wet gangrene. Clinic, diagnosis, treatment.
88. Treatment of dry and wet necrosis.
89. Trophic ulcers. Causes, features of the clinical course. Clinic, diagnostics.

Recommended Reading

Main:

1. General surgery: textbook / M. D. Zheliba, S. D. Khimich, I. G. Herych et al.: ed. Professors M.D. Zheliba, S.D. Khimich. Kyiv: VSV Meditsina Publ., 2010, 2016. – 448 p.
2. Obshchaya khirurgiya: uchebnik / N. D. Zheliba, S. D. Khimich, I. G. Gerich i dr.: pod ed. Professors N. D. Zheliba, S. D. Khimich. Kyiv: VSI "Medicine", 2011, 2016. – 488 p.
3. Surgery. (Textbook of General Surgery) /ed.. Prof. Y.S.Bereznitsky. – Dnipropetrovsk, RVA "Dnipro VAL", Vol.1. – 2014. – 443 p. (in Russian).

Secondary:

1. Ambulatory surgical manipulations. Prof. Polevoho V.P., Shkvarovsky I.V., Zheliba M.D. – Chernivtsi: Medical University, 2013. –252 p. (in Russian).

2. Care for surgical patients / V. P. Polevoy, O. Y. Khomko, S. P. Polyova, A. S. Palyanytsia, I. O. Vyshnevskyi. – Chernivtsi: Medunivrsitet – 2012. – 380 p.
3. Lecture Notes: General Surgery / Harold Ellis, Sir Roy Calne/ New York 2016/ 749 p.
4. First pre-medical aid / Andriushchenko V. P., Kushta Y. F., Andriushchenko D. V. – Lviv, Lviv National Medical University, 2011. – 351 p.
5. Polovyi V. P., Shkvarkovsky I. V., Zheliba M. D. Ambulatory surgical manipulations. – Chernivtsi: Medical University, 2013. – 252 p.
6. Fistal E.Ya., Kozynets G.P., Samoilenko G.E. et al. Combustiology. Kyiv, 2004. – 184 p.
7. Khimich S. D. Handbook of the surgeon / S. D. Khimich. Kyiv: Health, 2011. – 240 p.
8. Surgery. Vol.1: Textbook on General Surgery / edited by Y. S. Bereznitsky, M. P
9. Zakharash, V. G. Mishalov, V. O. Shidlovsky. – Dnipropetrovsk: RVA "Dnipro VAL", 2006. – 443 p. 9. Pantio V. I., Shymon V. M., Boldyzhar O. O. – Uzhhorod: IVA, 2010. – 464 p.
10. Butyrskiy O. G. General Surgery: Manual for Students, Interns and Young Surgeons. – Simferopol: PE "Elinyo", 2009. – 460 p.

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