

MINISTRY OF HEALTH OF THE REPUBLIC OF BELARUS
Educational Institution
BELARUSIAN STATE MEDICAL UNIVERSITY

Контрольный
экземпляр



APPROVED

by Rector of the Educational
Institution «Belarusian State
Medical University»

 S.P. Rubnikovich

20.11.2024

Reg. # UD-0911-01-15/24257 edu.

GENERAL SURGERY

**Curriculum of the educational institution
in the academic discipline for the specialty**

7-07-0911-01 «General Medicine»

Curriculum is based on the educational program «General Surgery», approved 20.11.2024, registration # УД-0911-01-15/2425/уч.; on the educational plan in the specialty 7-07-0911-01 «General Medicine», approved 15.05.2024, registration # 7-07-0911-01/2425/mf.

COMPILERS:

S.A.Alekseev, Head of the Department of General Surgery of the Educational Institution «Belarusian State Medical University», DSc, Professor;

O.F.Antiperovich, Associate Professor of the Department of General Surgery of the Educational Institution «Belarusian State Medical University», PhD, Associate Professor;

S.N.Chur, Associate Professor of the Department of General Surgery of the Educational Institution «Belarusian State Medical University», PhD, Associate Professor;

O.A.Fateeva, Associate Professor of the Department of General Surgery of the Educational Institution «Belarusian State Medical University», PhD, Associate Professor;

V.S.Derkachev, Associate Professor of the Department of General Surgery of the Educational Institution «Belarusian State Medical University», PhD, Associate Professor;

S.A.Klimuk, Assistant professor of the department of the General Surgery of the Educational Institution «Belarusian State Medical University», Assistant Professor

RECOMMENDED FOR APPROVAL:

by the Department of General Surgery of the Educational Institution «Belarusian State Medical University»
(protocol # 3 of 31.10.2024);

by the Scientific and Methodical Council of the Educational Institution «Belarusian State Medical University»
(protocol # 3 of 20.11.2024)

EXPLANATORY NOTE

«General Surgery» is an academic discipline of the Surgical Module # 1, containing systematized scientific knowledge about the main pathological conditions in surgery, as well as rarely elements of surgical activity.

The aim of the academic discipline «General Surgery» is the formation of specialized competencies for mastering the main areas of surgical work - compliance with the rules of asepsis and antiseptics when performing surgical operations, issues of anesthesia, stopping bleeding and compensating for blood loss, surgical methods of treating certain types of surgical diseases.

The objectives of the academic discipline «General Surgery» are to form students' scientific knowledge about: the basic concepts of clinical surgery, in desmurgy, aseptic and antiseptic, basics of hemotransfusiology, methods of hemostasis and compensation of blood loss, fundamentals of anesthesiology and resuscitation, the basics of plastic surgery, oncology and transplantology, basic principles of diagnosis and treatment of septic surgical diseases, methods of providing primary and specialized medical care to patients with certain acute surgical diseases, injuries and emergency conditions; skills and abilities necessary for:

- identification the syndromes of major surgical diseases, traumatic injuries;

- diagnosis and treatment of septic surgical pathology;

- mastering the methods of primary medical care in the development of a number of conditions that threaten the life of patients;

- resolving questions about the place of examination and treatment of patients with surgical diseases.

The knowledge, skills and abilities gained in the study of the academic discipline «General Surgery» are necessary for the successful study of the following academic disciplines: «Disaster Medicine», «Anesthesiology and Reanimatology», «Topographic Anatomy and Operative Surgery», module «Surgical Module # 3».

Studying the educational discipline «General Surgery» should ensure the formation of students' specialized competency: apply methods of examination, diagnosis, and primary care for the most common surgical diseases.

As a result of studying the academic discipline «General Surgery», the student should

know:

- the main types of modern asepsis and antisepsis;

- main methods of prevention and treatment of wound infection;

- methods of disinfection and sterilization of instruments, dressings and sutures, gloves, implants;

- methods of processing hands before surgical interventions;

- rules for preparing the patient and the operating field for surgery, rules for working in the operating room;

- local and general manifestations of traumatic injuries (mechanical injuries, thermal, chemical and radiation burns, frostbite), traumatic shock, crush syndrome;

- general and local symptoms of bleeding and methods of hemostasis, indications and contraindications for the transfusion of specific components of blood

products and blood products, blood substitutes, blood transfusion complications, taking into account the prevention and principles of basic treatment;

basics local anesthesia and basic resuscitation;

principles of diagnosis, classification of local and general treatment of individual nosological forms of surgical infection;

patterns of the wound healing process, types of wound healing and principles of their treatment, rules for dressings, taking into account the phases of the wound process;

basic principles of oncology, transplantology, plastic surgery;

be able to:

apply basic and additional methods of examination for the preliminary formulation of a clinical diagnosis;

carry out pre-sterilization processing of surgical instruments, perform packing of the sterilization box;

carry out certain types of local anesthesia using modern anesthetics;

perform primary and secondary surgical treatment of wounds, draining phlegmone and abscess of subcutaneous localization;

perform intradermal, subcutaneous, intramuscular injections;

gastric tube insertion and cleansing enemas performing;

carry out artificial ventilation of the lungs and closed heart massage;

determine the patient's blood group;

prepare the system for transfusion of blood products and blood substitutes;

perform a test for individual compatibility, compatibility by Rh factor;

perform a biological test before blood transfusion;

perform transport immobilization;

master:

method of processing hands in preparation for surgery;

how to put on a sterile gown, mask, gloves before surgery;

method of preparing the surgical field for surgery;

adjustment Specifics of the operating lamp and operating table;

the technique of sterilization box opening and the supply of sterile material during the operation;

methods of applying soft bandages of various types and types;

methods of temporarily bleeding control.

Total number of hours for the study of the discipline is 336 academic hours, of which 177 classroom hours and 159 hours of student independent work. Classroom hours according to the types of studies: lectures – 33 hours (including 9 hours of supervised student independent work (SSIW)), practical classes – 144 hours.

Intermediate assessment is carried out according to the syllabus of the specialty in the form of a credit (4, 5 semesters) and examination (6 semester).

Form of higher education – full-time.

ALLOCATION OF ACADEMIC TIME ACCORDING TO SEMESTERS OF STUDY

Code, name of the specialty	semester	Number of academic hours						Form of intermediate assessment
		total	in-class	including			out-of-class self-studies	
				lectures	supervised student independent work	practical classes		
7-07-0911-01 «General Medicine»	4	108	54	9	3	42	54	credit
	5	108	63	6	3	45	45	credit
	6	120	60	9	3	48	60	exam
Total hours		336	177	24	9	144	159	

THEMATIC PLAN

Topic (section) title	Number of in-class hours	
	lectures	practical
1. Introduction to the academic discipline «General Surgery»	1,5	2
2. Aseptic and antiseptic	3	10
3. Bleeding and blood loss	1,5	5
4. Fundamentals of clinical transfusiology	3	5
5. Endogenous intoxication. Water and electrolyte disorders	-	2,5
6. Nutrition of a patient with surgical pathology	-	2,5
7. Fundamentals of anesthesiology	-	5
8. Fundamentals of intensive care	-	2,5
9. Surgical operation	3	7,5
10. Desmurgy. Transport immobilization	3	9
11. Trauma and injuries	-	15
12. Wounds and wound infection	1,5	6
13. Sepsis	-	3
14. Burn injury. Thermal, chemical and radiation burns. Electrical injury	3	6
15. Cold injury	-	3
16. Fundamentals of out-patient surgery	-	3
17. Fundamentals of oncology	-	3
18. Fundamentals of plastic and reconstructive surgery	1,5	3

Topic (section) title	Number of in-class hours	
	lectures	practical
19. Fundamentals of transplantology	-	3
20. Examination of patient with surgical pathology	3	3
21. Surgical infection	3	27
22. Arterial circulation disorders	3	6
23. Venous circulation disorders. Chronic disorders of the lymph drainage	1,5	6
24. Diabetic foot syndrome	-	3
25. Trophic and necrotic changes in soft tissues	1,5	3
Total hours	33	144

CONTENT OF THE EDUCATIONAL MATERIAL

1. Introduction to the academic discipline «General Surgery»

Definition of the concept of surgery. Meaning, purpose, objectives and content of the academic discipline «General Surgery».

History of the development of surgery. Representatives of surgical schools and their role in the formation of the main periods of surgery.

Legislative legal acts regulating surgical activity. Issues of ethics and deontology in surgery. Interactions within the “doctor-patient” system. Medical and ethical specifics of professional interaction between doctors and patients on the different steps of medical care. The concept of medical secrecy, iatrogenics in the provision of surgical care. Rights and obligations of surgical patients.

Stages of surgeon training in the Republic of Belarus. Development of surgery in the Republic of Belarus.

2. Aseptic and antiseptic

Aseptic. Routes and sources of infection spread. Organization of a surgical hospital, operating unit. Zones of sterility. Types of cleaning in the operating room. Prevention of endogenous infection, airborne infection. Prevention of healthcare-associated and HIV-infection.

Prevention of endogenous infection. Specifics of healthcare-associated (nosocomial) infection. Prevention of nosocomial and HIV infection.

Prevention of contact infection. Characteristics and specifics of the main high-temperature and low-temperature sterilization methods. Treatment of the hands of the surgeon and the operating field. Epidemiological safety in healthcare. Specifics of sterilization of surgical instruments, dressings and surgical linen. Prevention of implantation infection. Characteristics of the suture material: structure, biodegradability, source of production, thickness. Metric system for measuring surgical threads.

Prevention of exogenous airborne infection. The specific of organizational measures aimed at the prevention of exogenous airborne infection.

Prevention of exogenous implantation infection. Sterility efficiency control: Specifics of physical, chemical and biological methods.

Antiseptic. Mechanical antiseptic. Components of mechanical antiseptics: primary surgical treatment (PST), secondary surgical treatment (SST), wound cleansing.

Physical antiseptic. Characteristics of wound drainage methods. Technical means of physical influence: ultrasonic cavitation, ultraviolet irradiation, hyperbaric oxygenation, local ozone therapy, photodynamic therapy.

Chemical antiseptic. Classification and representatives of chemical antiseptics. The concept and types of chemotherapeutic drugs.

Biological antiseptic. Classification and representatives of biological antiseptics. Classes of immunocorrective preparations and bacteriophages. Methods for correcting immunoresistance. Classes and representatives of antibiotics. The concept of antibiotic prophylaxis.

3. Bleeding and blood loss

Hemostasis system. Methods and mechanisms of physiological hemostasis. The concept of physiological anticoagulants and the fibrinolysis system. Disseminated intravascular coagulation syndrome (DIC) and hypercoagulability syndrome. Causes, treatment tactics.

Bleeding: types, classification, severity, outcomes and complications.

Blood loss: Estimation of the loss of circulating blood volume. Moore's formula. Types of therapeutic hemostasis. Reconstructive and restorative and endovascular interventions, special devices for final hemostasis (Blackmore's probe, Cook's rings, Danis stent). The concept of intrahepatic portosystemic shunting (TIPS). Types of coagulation. Types of local and systemic hemostatics. Types of local biological hemostatics.

4. Fundamentals of clinical transfusiology

Blood groups. Basic immunological aspects. Characteristics of ABO groups and its anomalies. Rh factor system. The concept of stem hematopoietic cells. Indications, contraindications, methods of transfusion of blood components. Routes of administration, preservatives. Methods for determining blood group and Rh factor. Compatibility tests, biological testing. Posttransfusion reactions and complications. Types, manifestations, treatment tactics.

Clinical transfusiology. Blood components. Blood products: classification, components, indications for use, shelf life.

Blood substitutes. Classification, mechanism of action, indications for use, Specifics of administration. Specifics of replenishment of acute blood loss with various loss of circulating blood volume.

5. Endogenous intoxication. Water and electrolyte disorders

Water-electrolyte disorders and disorders of the acid-base state (ABS) in surgical practice. Basic concepts. Types of toxins. Varieties of endotoxiosis. Principles of diagnostics. Medical directions. Types of extracorporeal detoxification. Types of water spaces. Types of electrolyte imbalance. The main buffer systems of the blood. Types of ABS disorders. principles of their treatment. Groups of blood substitutes for correction.

6. Nutrition of a patient with surgical pathology

Nutritional status. Assessment of nutritional status. Parenteral nutrition: indications, the concept of carrying out, varieties of blood substitutes used and the mode of their administration, indications. Types of standard diets in surgery. The concept of sip. Types of artificial parenteral nutrition. Types of basic endopits. Ways and modes of introduction of endopits. Indications for their introduction.

7. Fundamentals of anesthesiology

Specifics of the pain syndrome. The concept of transduction, transmission, modulation, perception. Types of algogens. Pain classification. Diagnostic criteria for pain syndrome (VAS-, SVO-scales). Principles of treatment. Anesthesia methods. Groups of analgesics and their representatives. Treatment of chronic pain syndrome. Routes of administration of anesthetics.

Anesthesia. Local anesthesia. Indications and contraindications. Classification of local anesthetics. Types of local anesthesia. Other types of anesthesia: intravenous, intraosseous, infiltration, conduction anesthesia. Novocaine blocks. Technique, indications for certain types.

8. Fundamentals of intensive care

Critical conditions. Types of shock, their clinical manifestations, principles of preclinical diagnosis and treatment. Preagony, agony, clinical death, signs. Stages of basic cardiopulmonary resuscitation. Criteria for its effectiveness. Management of cardiac arrest. Electrical defibrillation. Inotropic support.

9. Surgical operation

Surgical operation: definition, indications and contraindications. Degrees of operational risk. Classification of the main types. The concept of robotic operations VR-, 3D-, NOTES-technology. Stages of the operation. Types of completion of operations. Ways to prevent postoperative complications. Epidemiological safety during surgical interventions.

Preoperative period: definition, tasks, varieties, Specifics of the stages and their components. Preoperative preparation. Treatment of the operating field. Operational risk assessment (ASA scale). Treatment of the operating field. Premedication. Antibacterial prophylaxis, Prevention of thrombosis.

Postoperative period: definition, purpose, tasks. Characteristics of the phases of the course of the uncomplicated period. The concept of the program and method of accelerated recovery (Fast Track Surgery; ERAS). Complicated postoperative period. The main types of complications, their prevention. Assessment scales: Claven-Dindo, Satave.

10. Desmurgy. Transport immobilization

Types and characteristics of dressings. Soft bandages. Classification, bandaging rules. Soft headbands, neck, chest and shoulder girdle, abdomen, pelvis, upper limb, lower limb. Specifics of the use of bandages using elastic bandages of various compression classes, sports taping, adhesive plaster and contour bandages, scarves, elastic corsets and bandages.

Hardening bandages. Plaster bandages: types, Specifics and characteristics, indications and contraindications for application, application rules, care and removal.

Transport immobilization: definition, indications, immobilization rules. Standard transportation splint. Indications for use.

11. Trauma and injuries

Trauma and injuries. Definition. Classification of damage by type of agent, nature of damage. Types of damage: concussion, bruise, sprain, rupture, compression.

Closed injuries of the skull and brain: clinical manifestations, diagnosis, treatment.

Closed and open injuries of the chest: clinical manifestations, diagnosis, treatment. Hemothorax, pneumothorax: clinical manifestations, diagnosis, treatment.

Closed and open injuries of the abdomen and retroperitoneal space: mechanisms of injury, clinical manifestations, diagnosis and treatment.

Dislocations: definition, classification, reliable and probable signs, diagnosis. Shoulder dislocation reduction. Indications for surgical treatment.

Fractures: definition, classification, reliable and probable signs, instrumental diagnostics. First aid for fractures of long bones, pelvic bones, spine. Specifics of transport immobilization in fractures. Indications for surgical treatment.

Osteosynthesis: types, indications, contraindications. Skeletal traction: indications, contraindications, overlay rule. Bone tissue regeneration: morphogenesis, timing, types of callus.

Traumatic shock: definition, etiology, pathogenesis, classification, clinical symptoms, diagnosis. Monitoring of the patient's condition. Basic therapeutic measures.

Crush syndrome: definition, etiopathogenesis, clinical symptoms and diagnosis depending on the periods of the pathological process. First aid. Approaches to the treatment of patients in a hospital setting.

12. Wounds and wound infection

Wounds. Definition. Components of the wound: mandatory, possible. Classification of wounds. Specifics of gunshot wound zones. Pathogenesis of the wound process. Clinical symptoms. Types of wound healing. Treatment (operative, conservative). Wound suturing. Sutures classification.

Wound infection. Causes of wound infection. Complications of wound infection. Open wound management. Types of sutures in the complicated course of the wound process. Indications for removal of primary and secondary sutures. Active and passive drainage of septic wounds. Local treatment of infected wounds, taking into account the phases of the wound process: Specifics and main drugs. Types of wound dressings and their representatives used in the presence of wound infection.

13. Sepsis

Sepsis: definition, concept, classification, pathogenesis. Concept of a Gate (primary, secondary, metastatic septic locus), role of host and microorganism in sepsis development. Clinical forms and clinical presentation. Diagnostic of sepsis. Rules of blood culture sampling. Sepsis treatment: source control, general intensive care.

14. Burn injury. Thermal, chemical and radiation burns. Electrical injury

Burn injury: definition, pathomorphological changes in tissues and classification. Prognosis.

Thermal burns: classification and clinical symptoms. Determination of the depth and area of the burn. Formulation of the diagnosis of burn injury. First aid in

thermal trauma, principles of specialized care. Outcomes of burn trauma (systemic and local complications). Burn disease and its periods.

Chemical burns: classification and clinical symptoms. Severity assessment. First aid in chemical burns. Principles for the provision of specialized care. Outcomes of chemical burns (systemic and local complications). Prevention of chemical burns.

Radiation burns: causes, pathogenesis, clinical symptoms. First aid. Principles for the provision of specialized care. The concept of radiation sickness. Close and long-term outcomes of radiation burns.

Electrical injury. Specifics of direct and indirect effects of current (thermal, electrochemical, biological). General and local disorders that occur in the body as a result of electrical injury. Degrees of electrical injury. First aid. In electrical trauma. Principles for the provision of specialized care. Outcomes of electrical trauma (systemic and local complications).

15. Cold injury

Definition, types of cold injury. Factors that increase the risk of cold injury.

General cooling (freezing): clinical presentation, degrees of cooling. First aid. Principles for the provision of specialized care in general cooling.

Frostbite: definition, pathogenesis, classification, clinical symptoms in pre-reactive and reactive (early and late) periods. Methods for determining the viability of tissues in the late reactive period. First aid and principles of frostbite treatment. Complications of frostbite in the early and late remote periods. The concept of trench foot.

16. Fundamentals of out-patient surgery

Organization of outpatient surgical care in the Republic of Belarus. Continuity between outpatient and inpatient levels of surgical care. Indications and contraindications for outpatient surgery. Organization of observation of an outpatient surgical profile. Indications for planned and emergency hospitalization.

Ingrown toenail: causes, modern methods of treatment. Skin lesions (dermoid cyst, atheroma), ligature fistula: clinical symptoms, surgical treatment.

Pilonidal cyst: causes, diagnosis, treatment.

17. Fundamentals of oncology

Organization of cancer care in the Republic of Belarus. Tumor: definition, etiopathogenesis, international classification (TNM). Precancerous conditions (facultative and obligate precancers). Clinical symptoms and diagnosis of the tumor process. Biopsy, its types. Types of metastasis. Specifics of radical, palliative and symptomatic treatment. Clinical stages.

18. Fundamentals of plastic and reconstructive surgery

Plastic surgery: definition, tasks and directions of plastic surgery. Classification by types of transplanted tissues. Skin plastics: indications, types. Modern types of skin allografts.

Reconstructive and restorative surgery of organs and tissues. Peculiarities of plastics of tendons, cartilaginous and bone tissue, nerves, vessels. Plastic surgery on the hollow organs of the chest and abdominal cavities. Endoprosthetics: concept, types, indications. Replantation: indications, conditions for implementation.

19. Fundamentals of transplantology

Transplantology: definition, tasks, classification. The concepts of «donor» and «recipient». Organization of a transplant service in the Republic of Belarus. Moral-ethical and legal aspects. Principles for ensuring the viability of a donor organ. Tissue incompatibility and ways to overcome it.

20. Examination of patient with surgical pathology

Examination of a patient with surgical pathology: examination, collection of complaints and anamnesis of the disease, physical examination, formulation of a preliminary diagnosis. Laboratory and instrumental diagnostic methods.

Provisional and clinical diagnosis. Components of a diagnosis. Medical documentation: medical record of an inpatient, rules for storage and use. Distinctive components of the academic medical record of an inpatient with surgical pathology.

21. Surgical infection

Surgical infection: definition, epidemiology, pathogenesis factors, classification of surgical infectious processes. Clinical symptoms: local and general reaction to a septic infection. Methods of control of a septic focus: physical, enzymatic, mechanical and autolytic.

Surgical infection of the skin and subcutaneous tissue: types, classification according to the level of damage and localization of the septic-infectious process.

Furuncle: definition, etiopathogenesis, clinical symptoms, treatment. Multiple boils, furunculosis: clinical symptoms, treatment Specifics.

Carbuncle: definition, etiopathogenesis, clinical symptoms, treatment.

Hidradenitis: definition, etiopathogenesis, clinical symptoms, treatment.

Abscess: definition, clinical presentation, diagnosis, treatment.

Phlegmon: definition, classification, clinic, diagnosis, treatment. Complications of phlegmon.

Erysipelas: definition, etiopathogenesis, classification, clinical symptoms, diagnosis, treatment. Prevention of relapses.

Surgical infection of the lymphatic and venous system. Lymphadenitis: definition, etiopathogenesis, classification, clinical symptoms, diagnosis, treatment.

Acute lymphangitis: definition, pathogenesis, classification, clinical presentation, diagnosis, treatment.

Surgical infection of venous blood vessels. Acute thrombophlebitis: definition, etiopathogenesis, classification, clinical symptoms, diagnosis, treatment.

Adenophlegmon: definition, etiopathogenesis, clinical presentation, diagnosis, treatment.

Surgical infection of the glandular organs. Acute mastitis: definition, etiopathogenesis, classification, clinical symptoms, diagnosis, treatment.

Acute parotitis: definition, etiopathogenesis, classification, clinical symptoms, diagnosis, treatment.

Acute paraproctitis: definition, etiopathogenesis, classification, clinical symptoms, diagnosis, treatment. Chronic paraproctitis.

Surgical infection of fingers and hand. Panaritium: definition, etiopathogenesis, classification, clinical symptoms, diagnosis, treatment.

Phlegmon of the hand: definition, etiopathogenesis, classification, clinical symptoms, diagnosis, treatment.

Surgical infection of bones and joints. Acute septic arthritis: definition, etiopathogenesis, clinical symptoms, diagnosis, treatment.

Acute septic bursitis: definition, etiopathogenesis, clinical symptoms, diagnosis, treatment.

Osteoarticular tuberculosis: phases of the course, clinical symptoms, diagnosis and treatment.

Actinomycosis: definition, etiology, pathogenesis (paths of infection), clinical symptoms and diagnosis of various forms (cervical-facial, abdominal (intestinal), pulmonary), treatment.

Osteomyelitis: definition, classification. Acute hematogenous osteomyelitis: etiopathogenesis, clinical symptoms, diagnosis, treatment. Chronic non-hematogenous osteomyelitis: etiopathogenesis, clinical symptoms, diagnosis, treatment. Rare primary chronic forms of osteomyelitis (Broddy, Garre, Ollie).

Anaerobic infection: definition, classification. Anaerobic clostridial infection: etiopathogenesis, clinical symptoms, diagnosis. Gas gangrene. Principles of local and general treatment of anaerobic infection. Prevention (specific and non-specific).

Anaerobic non-clostridial infection: etiopathogenesis, clinical symptoms, diagnosis, treatment.

Tetanus: definition, etiopathogenesis, classification, clinical symptoms. Early signs of tetanus. treatment. Specific and non-specific emergency prophylaxis of tetanus.

Anthrax: definition, etiology, pathogenesis, classification, clinical symptoms and diagnosis, treatment.

Rabies: definition, stages, Specifics of anti-rabies care and topical treatment of bite wounds.

Septic pericarditis: definition, etiopathogenesis, classification, clinical symptoms, diagnosis, treatment.

Septic pleurisy: definition, etiopathogenesis, classification, clinical symptoms, diagnosis, treatment. Methods (closed and open) of surgical treatment.

Septic peritonitis: definition, classification, stages of peritonitis and their clinical manifestations. Diagnostic criteria for peritonitis. Principles of treatment.

22. Arterial circulation disorders

Acute arterial insufficiency of the main arteries of the lower extremities: definition, etiology, pathogenesis, classification, clinical symptoms, diagnosis of blood flow disorders. Methods of treatment (medical and surgical). Complications. Prevention.

Chronic arterial insufficiency (CAI) of the main arteries of the lower extremities: etiology, pathogenesis, classification of stages, clinical symptoms, diagnosis of blood flow disorders. Methods of medical and surgical treatment of CAI (X-ray endovascular and reconstructive and restorative operations).

23. Venous circulation disorders. Chronic disorders of the lymph drainage

Acute venous insufficiency: definition, etiopathogenesis.

Thrombophlebitis: clinical symptoms, diagnosis, complications, treatment.

Phlebothrombosis: clinical symptoms depending on the level of the lesion (subclavian-jugular, iliac-femoral, tibial segments), diagnosis, complications, treatment.

Chronic venous insufficiency (CVI): definition, etiology, pathogenesis, classification (CEAP), diagnostics (non-invasive and invasive), clinical symptoms. Treatment of varicose veins and post-thrombotic syndrome of the lower extremities. Prevention of varicose veins of the lower extremities.

Chronic disorders of lymph drainage: etiology, pathogenesis of primary and secondary lymphatic insufficiency, clinical symptoms and diagnosis, methods of medical and surgical treatment.

24. Diabetic foot syndrome

Diabetic foot syndrome (SDF). Definition, pathogenesis, classification (clinical forms). Clinical signs of polyneuropathy, angiopathy and osteoarthropathy in SDF. Diagnosis (assessment of the state of peripheral blood flow, innervation, the state of the bone structures of the foot, chronic wounds (ulcers) of the foot). Treatment of neuropathic and neuroischemic forms of SDF. Prevention of SDF.

25. Trophic and necrotic changes in soft tissues

Gangrene: definition, causes, pathogenesis, classification, clinical symptoms, differential diagnosis with necrosis, treatment.

Trophic ulcer: definition, causes of formation, clinical manifestations, diagnosis of the main types of trophic ulcers (arterial, venous, diabetic). Treatment (local and general).

Fistula: definition, pathogenesis, classification, clinical manifestations, diagnosis of internal and external fistulas, treatment.

Pressure sore: definition, causes. Stages of formation of a decubitus. Clinical symptoms, diagnosis and treatment, taking into account the stages. Treatment. Prevention of bedsores.

ACADEMIC DISCIPLINE CURRICULAR CHART

Section, topic #	Section (topic) name	Number of class hours		Supervised student independent work	Literature	Practical skill	Form of control	
		lectures	practical				of practical skills	of current / intermediate assessment
4 th semester								
	Lectures	9	-	3				
1.	Introduction to the academic discipline «General Surgery»	1,5	-	-	1, 5			
2.	Aseptic and antiseptic	1,5	-	1,5	1, 5			Conversation, quiz
3.	Bleeding and blood loss	1,5	-	-	1, 5			
4.	Blood groups. Hemotransfusion	1,5	-	-	1, 5			
5.	Blood components. Blood products. Blood substitutes	1,5	-	1,5	1, 5			Conversation, presentation
6.	Surgical operation	1,5	-	-	1, 5			
	Practical classes	-	42	-				
1.	Introduction to the academic discipline «General Surgery»	-	2	-	1-4			Solving situational cases, quiz
2.	Aseptic. Prevention of endogenous infection	-	2,5	-	1-4	Hands hygiene and surgical scrubbing according to EN-1500 standard	Performing a practical skill with assistance of a simulated participant*	Solving situational cases, quiz
3.	Prevention of contact infection	-	2,5	-	1-4			Solving situational cases, quiz, test
4.	Antiseptic. Mechanical antiseptic. Physical antiseptic	-	2,5	-	1-4			Solving situational cases, quiz, test
5.	Chemical antiseptic. Biological antiseptic	-	2,5	-	1-4			Solving situational cases, quiz, test, control test*

6.	Bleeding and blood loss. System of hemostasis	-	2,5	-	1-4			Solving situational cases, quiz, test
7.	Bleeding	-	2,5	-	1-4	Application of a tourniquet to stop arterial bleeding from injured artery of hand, forearm, shoulder, foot, lower leg, thigh	Performing a practical skill with assistance of a simulated participant*	Solving situational cases, quiz, test, presentation
8.	Clinical hemotransfusiology. Blood groups	-	2,5	-	1-4	Main arteries compression	Performing a practical skill using simulation tools or with assistance of a simulated participant/standardized patient	Solving situational cases, quiz, test, thesis presentation
9.	Clinical hemotransfusiology. Blood components	-	2,5	-	1-4	On the phantom, Z-shaped or purse-string suture, single stitch with instrumental waving knot technique	Performing a practical skill using simulation tools*	Solving situational cases, quiz, test, control test*
10.	Endogenous intoxication. Water and electrolyte disorders	-	2,5	-	1-4			Solving situational cases, quiz, test
11.	Nutrition of a patient with surgical pathology	-	2,5	-	1-4			Solving situational cases, quiz
12.	Fundamentals of anesthesiology. Pain syndrome	-	2,5	-	1-4			Solving situational cases, quiz, test
13.	Anesthesia	-	2,5	-	1-4			Solving situational cases, quiz
14.	Fundamentals of intensive care	-	2,5	-	1-4			Solving situational cases, quiz, test, control test*
15.	Surgical operation	-	2,5	-	1-4	Interrupted stitch removal	Performing a practical skill using simulation tools	Solving situational cases, quiz, presentation

16.	Preoperative period	-	2,5	-	1-4	1.Scrubbing and gloving for surgery as a nurse. 2. Assisting a surgeon in scrubbing in and gloving for surgery as a nurse	Performing a practical skill using simulation tools or with assistance of a simulated participant	Solving situational cases, quiz
17.	Postoperative period	-	2,5	-	1-4			Final test, credit
5th semester								
	Lectures	6	-	3				
1.	Desmurgy. Transport immobilization	1,5	-	1,5	1, 5			Quiz, presentation
2.	Wounds and wound infection	1,5	-	-	1, 5			
3.	Burn injury. Thermal, chemical and radiation burns. Electrical injury	1,5	-	1,5	1, 5			Quiz, test
4.	Fundamentals of plastic and reconstructive surgery	1,5	-	-	1, 5			
	Practical classes	-	54	-				
1.	Desmurgy. Soft bandages	-	3	-	1-4			Solving situational cases, quiz
2.	Hardening bandages	-	3	-	1-4			Solving situational cases, quiz
3.	Transport immobilization	-	3	-	1-4	The application of a typical bandage dressing for any part of body	Performing a practical skill with assistance of a simulated participant*	Solving situational cases, quiz, presentation
4.	Trauma. Injuries. Head injuries	-	3	-	1-4			Solving situational cases, quiz
5.	Closed and open chest injuries	-	3	-	1-4			Solving situational cases, quiz
6.	Closed and open injuries of the abdominal cavity and retroperitoneal space	-	3	-	1-4			Solving situational cases, quiz, defending a thesis
7.	Dislocations and fractures	-	3	-	1-4			Solving situational cases, quiz

8.	Traumatic shock. Crush syndrome	-	3	-	1-4			Solving situational cases, control work*
9.	Wounds	-	3	-	1-4			Solving situational cases, quiz
10.	Wounds infections	-	3	-				Solving situational cases, quiz
11.	Sepsis	-	3	-	1-4			Solving situational cases, control work*
12.	Burn injury. Thermal burns	-	3	-	1-4	Dressing fixation using tubular reticular band in the head and limb	Performing a practical skill with assistance of a simulated participant	Situational cases, quiz
13.	Chemical burns. Radiation (beam) burns. Electrical injury	-	3	-	1-4			Solving situational cases, quiz, test
14.	Cold injury	-	3	-	1-4			Solving situational cases, quiz
15.	Fundamentals of out-patient surgery	-	3	-	1-4	Operation field cleansing and draping	Performing a practical skill using simulation tools	Control work*
16.	Fundamentals of oncology	-	3	-	1-4			Solving situational cases, quiz
17.	Fundamentals of plastic and reconstructive surgery	-	3	-	1-4			Solving situational cases, quiz, test
18.	Fundamentals of transplantology	-	3	-	1-4			Solving situational cases, quiz. Credit
6th semester								
	Lectures	9	-	3				
1.	Examination of a patient with surgical pathology	1,5	-	1,5	1, 5			Quiz, test
2.	General issues of surgical infection. Infection process	1,5	-	-	1, 5			

3.	Special issues of surgical infection	1,5	-	-	1, 5			
4.	Arterial circulation disorders	1,5	-	1,5	1, 5			Quiz, presentation
5.	Venous circulation disorders. Chronic disorders of the lymph drainage	1,5	-	-	1, 5			
6.	Trophic and necrotic changes in soft tissues	1,5	-	-	1, 5			
	Practical classes	-	48	-				
1.	Examination of a patient with surgical pathology	-	3	-	1-4	Patient's interview, physical examination	Academical long case creation*	Solving situational cases, quiz, presentation
2.	Surgical infection	-	3	-	1-4			Solving situational cases, quiz
3.	Acute septic diseases of the skin and subcutaneous tissue	-	3	-	1-4			Solving situational cases, quiz
4.	Surgical infection of the lymphatic and venous system. Infection of glandular organs	-	3	-	1-4			Solving situational cases, quiz, test
5.	Fingers and hand infection	-	3	-	1-4			Solving situational cases, quiz
6.	Surgical infection of bones and joints. Bone-articular tuberculosis	-	3	-	1-4			Solving situational cases, quiz
7.	Chronic specific surgical infection. Actinomyces	-	3	-	1-4			Solving situational cases, quiz
8.	Osteomyelitis	-	3	-	1-4			Solving situational cases, quiz
9.	Anaerobic clostridial and nonclostridial infection. Tetanus. Rabies. Anthrax.	-	3	-	1-4			Solving situational cases, quiz, defending a thesis
10.	Surgical infection of serous cavities. Septic pericarditis. Septic pleurisy. Peritonitis	-	3	-	1-4			Quiz, control work*
11.	Arterial circulation disorders. Acute arterial limb insufficiency	-	3	-	1-4			Solving situational cases, quiz
12.	Chronic arterial limb insufficiency	-	3	-	1-4	Determination of pulsation of arteries: temporal, maxillar, subclavian, humeral, radial, femoral, dorsalis	Performing a practical skill using simulation tools or with assistance of a	Solving situational cases, quiz, test

						pedis, posterior tibial	simulated participant/standar dized patient	
13.	Acute venous insufficiency	-	3	-	1-4			Solving situational cases, quiz
14.	Chronic venous insufficiency. Chronic disorders of the lymph drainage	-	3	-	1-4			Solving situational cases, quiz, test
15.	Diabetic foot syndrome	-	3	-	1-4			Control work*
16.	Trophic and necrotic changes in soft tissues	-	3	-	1-4			Solving situational cases, quiz, test
	Total hours	24	144	9				Exam

*This is a mandatory form of current certification

INFORMATION AND INSTRUCTIONAL UNIT

LITERATURE

Basic:

1. Alexeev, S. A. Surgical diseases. Practice book : textbook for foreign students of higher education institutions in the specialty «Dentistry» – Minsk : Вышэйш. школа, 2020. – 222 p.

Additional:

2. Gostishchev, V. K. General Surgery : the manual / V. K. Gostishchev – Moscow : Geotar Media, 2015 – 220 p.

3. Gostishchev, V. K. General Surgery : textbook / V. K. Gostishchev – Moscow : Geotar Media, 2021 – 799 p.

4. General Surgery : textbook / ed. by S. D. Khimich, M. D. Zheliba. – Kyiv : AUS Medicine Publishing, 2019. – 534p.

Electronic courseware for the educational discipline «General Surgery»:

5. <https://etest.bsmu.by/course/view.php?id=1376>.

METHODOLOGICAL RECOMMENDATIONS FOR THE ORGANIZATION AND PERFORMANCE OF STUDENT'S INDEPENDENT WORK IN THE ACADEMIC DISCIPLINE

The time allotted for independent work can be used by students:

preparation for lectures, practical classes;
preparation for credits and exams in academic discipline;
the study of topics (issues) for independent study;
preparation of thematic reports, abstracts, presentations;
compilation of tests by students to organize mutual control.

METHODOLOGICAL RECOMMENDATIONS FOR THE ORGANIZATION AND PERFORMANCE OF SUPERVISED STUDENT INDEPENDENT WORK IN THE ACADEMIC DISCIPLINE

APPROXIMATE LIST OF TASKS FOR SUPERVISED STUDENT INDEPENDENT WORK:

writing and presentation of the abstract;
compilation of tests by students for organizing mutual control.

FORMS OF CONTROL OF SUPERVISED STUDENT INDEPENDENT WORK:

conversation,
quiz;
presentation;
test.

LIST OF AVAILABLE DIAGNOSTIC TOOLS

The following forms of current certification are used to diagnose competencies:

Solving situational cases,
quiz
tests;
control work;
presentation.

LIST OF AVAILABLE TEACHING METHODS

Traditional method;
Active (interactive) methods:
Problem-Based Learning;
Team-Based Learning;
Case-Based Learning;
Research-Based Learning;
training based on simulation technologies.

LIST OF PRACTICAL SKILLS

	Name of practical skills	Form of practical skills control
1.	Hands hygiene and surgical scrubbing according to EN-1500 standard	Performing a practical skill with assistance of a simulated participant
2.	Application of a tourniquet to stop arterial bleeding from injured artery of hand, forearm, shoulder, foot, lower leg, thigh	Performing a practical skill with assistance of a simulated participant
3.	Main arteries compression	Performing a practical skill using simulation tools or with assistance of a simulated participant/standardized patient
4.	On the phantom, Z-shaped or purse-string suture, single stitch with instrumental waving knot technique	Performing a practical skill using simulation tools
5.	Interrupted stitch removal	Performing a practical skill using simulation tools
6.	Scrubbing and gloving for surgery as a nurse	Performing a practical skill using simulation tools or with assistance of a simulated participant
7.	Assisting a surgeon in scrubbing in and gloving for surgery as a nurse	Performing a practical skill with assistance of a simulated participant
8.	The application of a typical bandage dressing for any part of body	Performing a practical skill with assistance of a simulated participant
9.	Dressing fixation using tubular reticular band in the head and limb	Performing a practical skill with assistance of a simulated participant

	Name of practical skills	Form of practical skills control
10.	Operation field cleansing and draping	Performing a practical skill using simulation tools
11.	Patient's interview, physical examination	Academical long case creation
12.	Determination of pulsation of arteries: temporal, maxillar, subclavian, humeral, radial, femoral, dorsalis pedis, posterior tibial	Performing a practical skill using simulation tools or with assistance of a simulated participant/standardized patient

LIST OF EQUIPMENT USED

1. Simulators (to practice wound suturing skills, removal of the stitches, performance of intramuscular, intravenous and subcutaneous injections)
2. Mannequin (for practicing percussion methods, palpation of the chest, abdominal cavity during examination of the patient, performing the installation of a nasogastric tube, urinary catheter, for dressings for the head, trunk and limbs).
3. A set of surgical instruments (tweezers, clamps, scissors, needle holders, reusable needles).
4. Drainages.
5. Dressing material (gauze napkins, balls, turunda), adhesive plaster.
6. Antiseptics, disinfectant drugs.
7. Syringes of various volumes, sterilization boxes, linen, suture material.
8. A set of blood substitutes, tourniquets (Esmarchz, CAT/twist).
9. A set of isogemagglutinating sera.
10. Ambu sac.

**PROTOCOL OF THE CURRICULUM APPROVAL
BY OTHER DEPARTMENTS**

Title of the discipline requiring approval	The name of the department	Amendments to the curriculum in the academic discipline	Decision of the department, which designed the curriculum (date, protocol #)
1. Disaster Medicine	Department of Military Health Maintenance Organization and Emergency Medicine	There are no additions and changes	There are no additions and changes (protocol # 3 of 31.10.2024)
2. Anesthesiology and Reanimatology	Department of Anesthesiology and Reanimatology	There are no additions and changes	There are no additions and changes (protocol # 3 of 31.10.2024)
3. Operative Surgery and Topographic Anatomy	Department of Operative Surgery and Topographic Anatomy	There are no additions and changes	There are no additions and changes (protocol # 3 of 31.10.2024)

COMPILERS/AUTHORS

Head of the Department of General Surgery of the Educational Institution «Belarusian State Medical University», DSc, Professor

S.A.Alekseev

Associate Professor of the Department of General Surgery of the Educational Institution «Belarusian State Medical University», PhD, Associate Professor

O.F.Antiperovich

Associate Professor of the Department of General Surgery of the Educational Institution «Belarusian State Medical University», PhD, Associate Professor

S.N.Chur

Associate Professor of the Department of General Surgery of the Educational Institution «Belarusian State Medical University», PhD, Associate Professor

O.A.Fateeva

Associate Professor of the Department of General Surgery of the Educational Institution «Belarusian State Medical University», PhD, Associate Professor

V.S.Derkachev

Assistant professor of the department of the General Surgery of the Educational Institution «Belarusian State Medical University», Assistant Professor

S.A.Klimuk

Curriculum content, composition and accompanying documents comply with established requirements

Head of the Office of Educational Activities of the Educational Institution «Belarusian State Medical University»

I.L.Kotovich

Methodologist of the Educational and Methodological Department of the Office of Educational Activities of the Educational Institution «Belarusian State Medical University»

S.V.Zaturanova

COMPILERS/AUTHORS

Head of the Department of General Surgery of the Educational Institution «Belarusian State Medical University», DSc, Professor



S.A. Alekseev

Associate Professor of the Department of General Surgery of the Educational Institution «Belarusian State Medical University», PhD, Associate Professor



O.F. Antiperovich

Associate Professor of the Department of General Surgery of the Educational Institution «Belarusian State Medical University», PhD, Associate Professor



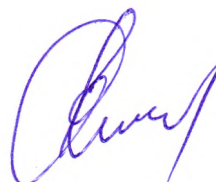
S.N. Chur

Associate Professor of the Department of General Surgery of the Educational Institution «Belarusian State Medical University», PhD, Associate Professor



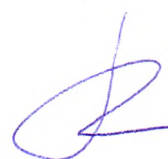
O.A. Fateeva

Associate Professor of the Department of General Surgery of the Educational Institution «Belarusian State Medical University», PhD, Associate Professor



V.S. Derkachev

Assistant professor of the department of the General Surgery of the Educational Institution «Belarusian State Medical University», Assistant Professor



S.A. Klimuk

Curriculum content, composition and accompanying documents comply with established requirements

Head of the Office of Educational Activities of the educational institution «Belarusian State Medical University»



I.L. Kotovich

Methodologist of the Educational and Methodological Department of the Office of Educational Activities of the educational institution «Belarusian State Medical University»



S.V. Zaturanova

18.11.2024