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**MINISTRY OF HEALTH PROTECTION OF UKRAINE**

**ODESSA NATIONAL MEDICAL UNIVERSITY**

Department of Surgery

**CONFIRMED by**

Vice-rector for scientific and pedagogical work

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September 1, 2024



**WORKING PROGRAM OF EDUCATIONAL DISCIPLINE  
"SURGERY"**

**Level of higher education:**second (master's)

**Branch of knowledge:**22 "Health care"

**Specialty:**222 "Medicine"

**Educational and professional program:** Medicine

The work program is compiled on the basis of the educational and professional program "Medicine" for the training of specialists of the second (master's) level of higher education in the specialty 222 "Medicine" of the field of knowledge 22 "Health care", approved by the Scientific Council of ONMedU (protocol No. 10 of June 27, 2024).

Developers:

head of the department, doctor of medicine, prof. Grubnik V. V.  
Doctor of Medicine, Assoc. S. D. Polyak  
Doctor of Medicine, Assoc. Parfentiev R.S.  
Doctor of Medicine, Assoc. Vorotyntseva K.O.

The work program was approved at the meeting of the department Surgery  
Protocol No1 dated August 26, 2024.

Head of the department  Volodymyr GRUBNIK

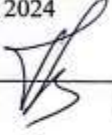
Agreed with the guarantor of the OPP  Valeriia Marichereda

Approved by the subject cyclical methodical commission for surgical disciplines of ONMedU  
Protocol No 1 dated August 30 2024

Head of the subject cycle methodical commission for surgical disciplines of ONMedU

 Vasyl Mishchenko

Reviewed and approved at the meeting of the department Surgery radiation diagnostics  
radiation medicine, therapy and oncology  
Protocol No. 1 of "02" september 2024

Head of the department  Volodymyr Geybriic  
(signature) (First Name Surname)

Reviewed and approved at the meeting of the department \_\_\_\_\_  
Protocol No. \_\_\_ of "\_\_\_" \_\_\_\_\_ 20\_\_

Head of the department \_\_\_\_\_  
(signature) (First Name Surname)

## 1. Description of the academic discipline

<b>Course Description Indicators</b>	<b>Field of Knowledge, Specialty, Specialization, Education Level</b>	<b>Characteristics of the Academic Discipline</b>
<b>Total Number:</b> Credits - 14.5 Hours - 435 Content Modules - 7	<b>Field of Knowledge:</b> 22 "Healthcare" <b>Specialty:</b> 222 "Medicine" <b>Education Level:</b> Second (Master's)	<b>Form of Study:</b> <i>Daytime education</i> <i>Mandatory discipline</i>
<b>Total Number:</b> Credits - 3.5 Hours - 105 Content Modules - 7	<b>Year of Study:</b> 4 <b>Semesters:</b> VII - VIII	<i>Lectures (Hours): 6</i> <i>Seminars (Hours): 0</i> <i>Practicals (Hours): 64</i> <i>Laboratory (Hours): 0</i> <i>Independent Work (Hours): 35</i> <i>Including Individual Tasks (Hours): 0</i> <i>Form of Final Assessment: Differentiated Credit</i>
<b>Total Number:</b> Credits: 4 Hours: 120 Content Modules: 3	<b>Year of Study:</b> 5 <b>Semesters:</b> IX - X	<i>Lectures (Hours): 12</i> <i>Seminars (Hours): 0</i> <i>Practicals (Hours): 68</i> <i>Laboratory (Hours): 0</i> <i>Independent Work (Hours): 40</i> <i>Including Individual Tasks (Hours): 0</i> <i>Form of Final Assessment: Differentiated Credit</i>
<b>Total Number:</b> Credits: 7 Hours: 210 Content Modules: 2	<b>Year of Study:</b> 6 <b>Semesters:</b> XI - XII	<i>Lectures (Hours): 0</i> <i>Seminars (Hours): 0</i> <i>Practicals (Hours): 140</i> <i>Laboratory (Hours): 0</i> <i>Independent Work (Hours): 70</i> <i>Including Individual Tasks (Hours): 0</i> <i>Form of Final Assessment: Exam</i>

## **2. The goals and tasks of the academic discipline, competencies, and program learning outcomes.**

**Aim:** To form the ability to perform diagnostics, conservative and surgical treatment, and prevention of diseases and emergency conditions of the surgical profile.

### **Tasks:**

- To form the ability to determine diagnostic methods, algorithms for conservative and surgical treatment of surgical diseases of the digestive system, cardiovascular and respiratory systems depending on the occurrence and characteristics of their clinical manifestations;
- mastery of differential diagnostics of diseases of the abdominal organs, extra-peritoneal space, and thoracic cavity;
- to form the ability to determine the principles of postoperative treatment and rehabilitation of patients with surgical pathology;
- to form the ability to identify modern methods of diagnostics and treatment, postoperative care, and rehabilitation of surgical diseases;
- mastery of risk factors for complications of diseases of the digestive system, cardiovascular and respiratory systems;
- to form the ability to interpret the results of laboratory and instrumental research of the digestive system, cardiovascular and respiratory systems;
- to form the ability to adhere to the moral-deontological principles of a medical professional and the principles of professional subordination in surgery;
- to form the ability to make prognoses of life and work capacity in surgical diseases of the digestive system, cardiovascular and respiratory systems;
- to form the ability to interpret the general principles of treatment, rehabilitation, and prevention of the most common surgical diseases of the digestive system, cardiovascular and respiratory systems;
- to form the ability to maintain medical documentation in the clinic of surgical diseases;
- to form the ability to provide emergency medical care for urgent diseases of the digestive system, cardiovascular and respiratory systems.

**The learning process of the discipline is aimed at forming elements of the following competencies:**

### **• General (GK):**

GK 1 – Ability for abstract thinking, analysis, and synthesis.

GK 3 – Ability to apply knowledge in practical situations.

GK 4 – Knowledge and understanding of the subject area and understanding of professional activity.

GK 6 – Ability to make justified decisions.

GK 7 – Ability to work in a team.

GK 8 – Ability to evaluate and ensure the quality of performed work.

GK 11 – Ability to search, process, and analyze information from various sources.

GK 12 – Determination and perseverance concerning the tasks and obligations taken.

GK 15 – Ability to preserve and enhance the moral, cultural, scientific values, and achievements of society based on understanding the history and development patterns of the subject area, its place in the general system of knowledge about nature and society, and in the development of society, technology, and technologies; use various types and forms of physical activity for active rest and leading a healthy lifestyle.

GK 16. – Ability to evaluate and ensure the quality of performed work.

### **• Special (SK):**

SK 1 – Skills in communication and clinical examination of a patient.

SK 2 – Ability to determine the list of necessary clinical-laboratory and instrumental studies and to evaluate their results.

SK 3 – Ability to establish a preliminary and clinical diagnosis of the disease.

SK 4 – Ability to define principles of treatment of diseases, the necessary regime of work and rest, and the character of nutrition.

SK 5 – Ability to diagnose emergency conditions.

SK 6 – Ability to define tactics and provide emergency medical care.

SK 7 – Ability to diagnose emergency conditions.

SK 8 – Ability to perform medical manipulations.

SK 10 – Ability to plan and conduct sanitary-hygienic and preventive measures.

SK 11 – Ability to solve medical problems in new or unfamiliar environments in the presence of incomplete or limited information, considering aspects of social and ethical responsibility, including an early intervention system.

SK 15 – Ability to conduct an examination of work capacity.

SK 16 – Ability to maintain medical documentation, including electronic forms.

SK 24 – Adherence to ethical principles when working with patients, laboratory animals.

SK 25. Adherence to professional and academic integrity, responsibility for the authenticity of scientific results obtained.

SK 26 – Ability to determine the tactics of management of persons subject to dispensary observation.

SK 27 – Ability to diagnose and determine the tactics of management of patients with extra-pulmonary and generalized forms of tuberculosis, including TB/HIV co-infection with chemoresistant course.

### **Program Learning Outcomes (PLOs):**

PLO 1- Possess skills in communication and clinical examination of a patient. Collect data on patient complaints, disease history, life history.

PLO 2 - Evaluate information regarding diagnosis using a standard procedure, based on the results of laboratory and instrumental studies. Define the list of necessary clinical-laboratory and instrumental studies and evaluate their results (according to the list 4).

PLO 3 - Specialized conceptual knowledge, including scientific achievements in the field of health care, which is the basis for conducting research, critical reflection on problems in the field of medicine, and related interdisciplinary problems, including an early intervention system.

PLO 4 - To identify and identify leading clinical symptoms and syndromes (according to list 1); by standard methods, using preliminary data of the patient's history, data of the patient's examination, knowledge about the human, her organs, and systems, to establish a preliminary clinical diagnosis of the disease (according to list 2).

PLO 5 - To collect complaints, life history, and disease history, to assess the psychomotor and physical development of the patient, the state of organs and body systems, based on the results of laboratory and instrumental studies to evaluate information regarding the diagnosis (according to list 4), considering the patient's age.

PLO 6 - To establish a final clinical diagnosis by making a justified decision and analyzing the obtained subjective and objective data of clinical, additional examination, conducting differential diagnostics, adhering to the corresponding ethical and legal norms, under the control of the attending physician in the conditions of the health care institution (according to list 2).

PLO 7 - To prescribe and analyze additional (mandatory and optional) methods of examination (laboratory, functional and/or instrumental) (according to list 4), patients with diseases of organs and body systems for the differential diagnosis of diseases (according to list 2).

PLO 8 - To determine the main clinical syndrome or symptom that causes the severity of the condition of the injured/sufferer (according to list 3) by making a justified decision on the state of a person under any circumstances (in the conditions of a health care institution, beyond it) including in emergency situations and combat actions, in field conditions, in conditions of lack of information and limited time.

PLO 9 - To determine the nature and principles of treatment of patients (conservative, surgical) with diseases (according to list 2), considering the patient's age, in the conditions of a health care institution, beyond it, and at the stages of medical evacuation, including in field conditions, based on a preliminary clinical diagnosis, adhering to the corresponding ethical and legal norms, by making a justified decision according to existing algorithms and standard schemes, if necessary, expansion of the standard scheme to be able to justify personalized recommendations under the control of the attending physician in the conditions of the medical institution.

PLO 10 - To determine the necessary regime of work, rest, and nutrition based on the final clinical diagnosis, adhering to the corresponding ethical and legal norms, by making a justified decision

according to existing algorithms and standard schemes.

PLO 14 - To determine tactics and provide emergency medical assistance in emergency conditions (according to list 3) in conditions of limited time according to existing clinical protocols and treatment standards.

PLO 15 - To organize the provision of medical care and medical evacuation measures to the population and military personnel in emergency situations and combat actions, including in field conditions.

PLO 17 - To perform medical manipulations (according to list 5) in the conditions of a medical institution, at home, or at production based on a preliminary clinical diagnosis and/or indicators of the patient's condition by making a justified decision, adhering to the corresponding ethical and legal norms.

PLO 18. To determine the state of functioning and limitations of a person's life activity and the duration of disability with the registration of the relevant documents, in the conditions of a health care institution based on data on the disease and its course, the peculiarities of the person's professional activity, etc. To maintain medical documentation regarding the patient and the population contingent based on normative documents.

PLO 21 - To find the necessary information in professional literature and databases of other sources, analyze, evaluate, and apply this information.

PLO 24. Organize the necessary level of individual safety (own and the persons cared for) in case of typical dangerous situations in the individual field of activity.

PLO 32. Ability to diagnose and determine the tactics of management of patients with non-pulmonary and generalized forms of tuberculosis, including TB/HIV co-infection with chemoresistant course.

**As a result of studying the academic discipline, the higher education applicant should:**

**Know:**

- The clinic, diagnostics, treatment of the most common surgical diseases of the abdominal organs;
- Modern concepts of domestic and foreign theoretical and practical surgery;
- The main principles of organizing surgical care for the population of Ukraine;
- The basics of organizing a rational regime and treatment of a surgical patient;
- General elements of care for surgical patients;
- Clinical manifestations of terminal states, their diagnostics, stages, and measures when conducting cardiopulmonary resuscitation;
- General issues of oncology and transplantology;
- Theoretical aspects of chronic diseases of the abdominal organs;
- General issues of surgical and HIV infection;
- The methodology of patient examination, the peculiarities of examining a patient with surgical pathology;
- The structure of the medical chart of a hospitalized patient.

**Be able to:**

1. Communicate with patients, collect complaints, life, and disease history.
2. Assess the physical and psychomotor development of patients.
3. Conduct a clinical examination of patients using standard methods.
4. Analyze the results of laboratory, functional, and instrumental studies.
5. Conduct differential diagnostics and justify the clinical diagnosis.
6. Determine tactics and provide emergency medical care in urgent conditions in patients.
7. Determine the nature and principles of treatment of patients based on a preliminary clinical diagnosis, adhering to the appropriate ethical and legal norms, by making a justified decision using existing algorithms and standard schemes.
8. Perform medical manipulations in surgical patients according to the list of practical skills.

9. Maintain medical documentation for surgical diseases in patients.

### **3. The content of the academic discipline for the 4th year**

#### **Content Module 1**

#### **URGENT ABDOMINAL SURGERY**

**Topic 1. Acute appendicitis.** Anatomy-physiological information. Etiology and pathogenesis. Classification. Clinic, diagnostics, differential diagnosis. Treatment tactics. Features of acute appendicitis course in children, pregnant women, and elderly patients. Diagnostic and therapeutic program. The role of laparoscopic technologies in the diagnosis and treatment of patients with acute appendicitis. Complications of acute appendicitis and appendectomy: appendicular infiltrate, appendicular abscess, interloop, pelvic and subdiaphragmatic abscesses. Pylephlebitis. Sepsis. Clinic, diagnostics, modern treatment tactics. Features of the disease course in HIV-infected and other patients.

**Topic 2. Acute cholecystitis.** Anatomical and physiological features of the biliary tract. Etiology and pathogenesis. Classification. Clinic, diagnostics, differential diagnosis. Surgical tactics. Features of the clinical course, clinical picture of acute cholecystitis, and diagnostic and therapeutic program in elderly patients and patients with concomitant pathology. Complications of acute cholecystitis and cholecystectomy (perforation of the gallbladder, perivesical infiltrate and abscess, cholangitis, cholangiogenic liver abscesses, biliary peritonitis, liver failure, mechanical jaundice, cholecystopancreatitis. Intraoperative damage to extrahepatic biliary tracts, vessels, abdominal organs). Diagnostics and surgical tactics. The role of minimally invasive methods of diagnosis and treatment of complications.

**Topic 3. Acute pancreatitis.** Etiology and pathogenesis, classification of acute pancreatitis. Clinic of mild and severe acute pancreatitis. Differential diagnosis of acute pancreatitis. Complications of acute pancreatitis: acute pseudocyst of the pancreas, pancreatic abscess, generalized peritonitis, necrosis of the walls of hollow organs, bleeding into the abdominal cavity, acute ulcers of the digestive canal, bleeding from acute ulcers into the cavity of the digestive canal. Methods of diagnosing acute pancreatitis: laboratory, instrumental - ultrasound, CT, laparoscopic. Modern treatment tactics for acute pancreatitis. Conservative therapy. Indications and methods of minimally invasive and open surgical interventions.

**Topic 4. Peptic ulcer disease of the stomach and duodenum.** Acute complications of peptic ulcer disease of the stomach and duodenum. Etiology, pathogenesis, and classification of peptic ulcer disease. Classification of perforative gastroduodenal ulcers. Clinic of typical and atypical perforative gastroduodenal ulcer. Diagnostics and differential diagnosis of typical and atypical perforative gastroduodenal ulcer. Radiological, laparoscopic methods, and ultrasound methods. "Treatment tactics for perforative gastroduodenal ulcer. Preparation of the patient for surgery and choice of the optimal method of surgical intervention. Conservative therapy in the postoperative period". Etiopathogenesis, classification of ulcerative bleeding. Forrest's endoscopic classification. Clinic of ulcerative bleeding. Laboratory and endoscopic diagnostic methods for ulcerative bleeding. Differential diagnosis of gastrointestinal bleeding. Treatment tactics for ulcerative bleeding: indications for choosing conservative treatment, endoscopic hemostasis methods, surgical intervention. Choice of surgical intervention method for ulcerative bleeding. Features of the disease course in HIV-infected and other patients.

**Topic 5. Acute intestinal obstruction.** The relevance of the problem. Definition of the concept. Etiology and pathogenesis. Typical clinical picture. Classification (by etiology, anatomical localization, clinical course). Differential diagnosis. Features of patient examination with acute intestinal obstruction. Mechanical intestinal obstruction. Early clinical signs of mechanical intestinal obstruction. Modern diagnostic methods. Features of preoperative preparation: correction of water-electrolyte disturbances and acid-base state. Features of general anesthesia administration. Surgical tactics for acute intestinal obstruction and types of surgical interventions depending on its cause. Features of postoperative period management. Consequences of surgical treatment. Dynamic intestinal obstruction. Classification. Features of the clinic. Principles of conservative and surgical treatment. Adhesive disease. Etiology, pathogenesis. Clinic. Classification. Indications for surgical

treatment. Features and types of surgical interventions.

**Topic 6. Acute peritonitis.** Etiology, pathogenesis, classification of acute peritonitis. Clinic of local and generalized acute peritonitis. Diagnostic methods for local and generalized peritonitis: laboratory, laparoscopic, ultrasound. Differential diagnosis of acute local and generalized peritonitis. Treatment tactics for acute local (limited and unlimited), generalized peritonitis. Puncture treatment methods. Laparostomy method. Features of the disease course in HIV-infected and other patients.

**Topic 7. External and internal abdominal hernias and their complications.** External abdominal hernias. The relevance of the topic. Classification. Etiology. Pathogenesis. Disease clinic. Modern examination methods. General principles of surgical treatment. Indications and contraindications for surgery. Hernias of the white line of the abdomen. Umbilical hernias. Postoperative hernias. Typical clinic. Classification. Differential diagnosis of each type of hernia. Methods of surgical intervention: classical and laparoscopic. Inguinal and femoral hernias. Typical clinic. Classification. Differential diagnosis. Methods of surgical intervention (Lichtenstein, Cilbert, Shouldice methods, classical and laparoscopic) Complications of hernias (acute and chronic). Types of strangulation by mechanism, clinical picture. Classic clinic of strangulation and its clinical forms. Differential diagnosis. Examination methods. Features of surgical intervention in strangulated hernias. Inflammation, trauma, intestinal obstruction, irreducibility of the hernia. Internal hernias. Classification. Etiology Pathogenesis. Disease clinic. Complications. Treatment. Diaphragmatic hernias. Indications for surgical treatment. Methods of surgery for diaphragmatic hernia.

**Topic 8. Patient management.** The work of higher education applicants with patients, collecting complaints, disease and life history, improving methods of physical examination, work in endoscopic and radiological offices, and in the ultrasound examination office. Practical skills of working in a dressing room (care for a wound, drains, changing dressings, removing drains, removing sutures, expanding the wound, surgical treatment of a purulent focus). Work in the operating room (assistance in operations, catheterization of central veins, administration of anesthesia, transfusion of blood products).

## Content Module 2

### SURGICAL GASTROENTEROLOGY AND PROCTOLOGY

**Topic 9. Surgery of the stomach and duodenum.** Pyloroduodenal stenosis (pathogenesis, classification, clinic, features of clinical manifestations of different degrees of stenosis, differential diagnosis, research methods, conservative and surgical treatment, types of operations). Duodenal stenosis. Penetration of gastric and duodenal ulcers (pathogenesis, dependence of the clinic on the penetrating organ, differential diagnosis, research methods, conservative and surgical treatment, types of operations). Malignancy of the ulcer (state of the problem, clinical manifestations, differential diagnosis, research methods, features of surgical interventions). Ulcerogenic endocrine diseases (primary hyperparathyroidism, Zollinger-Ellison syndrome, features of clinic, diagnostics, and treatment). Diseases of the operated stomach (post-gastrectomy and post-vagotomy, pathogenesis, clinic, classification, characteristics of functional disorders and organic lesions of the stomach and its stoma, conservative and surgical treatment). Rare diseases of the stomach and duodenum: foreign bodies (various objects, bezoars (phytobezoars, trichobezoars, sebobezoars), burns (chemical, thermal), Mallory-Weiss syndrome, Menetrier's disease, Schmidten's syndrome, Rendu-Osler-Weber disease, diverticula of the stomach and duodenum.

**Topic 10. Liver diseases.** Fibrosis, cirrhosis of the liver. Surgical aspects of the topic. Modern pathogenesis, classification. Complications. Clinic of complications. Differential diagnosis. Principles of conservative and surgical treatment of portal hypertension and its complications. Jaundice as a surgical problem. Etiology, pathogenesis. Clinical manifestations. Research methods. Principles of conservative treatment. Surgical tactics. The role of minimally invasive surgical methods in the treatment of mechanical jaundice. Liver insufficiency. State of the problem. Classification. Pathogenesis. Clinical manifestations depending on the degree of severity. Modern methods of treatment of liver insufficiency. Liver transplantation. Parasitic and non-parasitic lesions of the liver. Features of the clinic. Differential diagnosis. Research methods. Complications. Principles of



therapeutic tactics.

**Topic 11. Diseases of the extrahepatic bile ducts.** Cholelithiasis. State of the problem. Etiology. Pathogenesis. Reasons for stone formation. Clinical picture. Diagnostics. Differential diagnosis. Chronic calculous cholecystitis. Clinical manifestations. Research methods. Differential diagnosis. Principles of treatment. Indications for endoscopic, laparoscopic, and minimally invasive interventions. Prognosis. Complications of chronic calculous cholecystitis. Clinic. Diagnostics. Differential diagnosis. Treatment. Postcholecystectomy syndrome. Frequency. Classification. Clinic of different forms. Differential diagnosis. Research methods. Treatment.

**Topic 12. Diseases of the pancreas and spleen.** Chronic pancreatitis. Diagnostic methods. Clinic. Diagnostics. Differential diagnosis. Principles of conservative treatment. Indications for surgery. Complications of chronic pancreatitis. Clinic. Diagnostics. Differential diagnosis. Treatment. Cysts and fistulas. Clinic. Diagnostics. Differential diagnosis. Complications of cysts (suppuration, perforation, bleeding, malignancy). Principles of surgical tactics. Diseases of the spleen (trauma, abscess, cysts, infarction, splenomegaly, hypersplenism, Werlhof's disease, Banti's syndrome, hemolytic jaundice, malarial splenomegaly). Clinic. Diagnostics. Differential diagnosis. Treatment. Indications for splenectomy. Post-splenectomy syndrome. Work in the intensive care unit. Management of patients with hepatopancreatobiliary zone pathology.

**Topic 13. Surgical diseases of the small and large intestine.** Diseases of the small intestine. Research methods. Classification of surgical diseases of the small intestine. Diverticula, Meckel's diverticulum, its complications: chronic (abdominal "frog") and acute (occlusion of mesenteric vessels, Crohn's disease, intestinal). Surgical tactics for complicated forms of infectious and parasitic diseases. Non-specific ulcerative colitis (etiology, pathogenesis, classification, clinic, research methods, differential diagnosis, conservative and surgical treatment). Crohn's disease of the colon (etiology, pathogenesis, classification, clinic, research methods, differential diagnosis, conservative and surgical treatment). Diverticular disease of the colon (etiology, pathogenesis, classification, clinic, research methods, differential diagnosis, conservative and surgical treatment). Polyps and polyposis of the colon (etiology, pathogenesis, classification, clinic, research methods, differential diagnosis, conservative and surgical treatment). Hamartomatous polyposis (etiology, pathogenesis, classification, clinic, research methods, differential diagnosis, conservative and surgical treatment). Defects of the intestinal position, pneumatosis, dolichomegacolon. Chronic colostasis (etiology, pathogenesis, classification, clinic, research methods, differential diagnosis, conservative and surgical treatment). New technologies of surgical treatment of colon diseases (laparoscopic, endoscopic). Patient management (work of the applicant in the ward, following the algorithm of patient examination, with the analysis of endoscopic, ultrasound data, laboratory indicators), formulation of diagnosis, and treatment scheme. Irritable bowel syndrome (etiology, pathogenesis, classification, clinic, research methods, differential diagnosis, treatment).

**Topic 14. Diseases of the rectum.** Chronic hemorrhoids (etiology, pathogenesis, classification, clinic, features of clinical manifestations of different stages of hemorrhoid development, research methods, differential diagnosis, conservative and surgical treatment, types of operations). Acute hemorrhoids (etiology, pathogenesis, classification, clinic, features of clinical manifestations of different stages of hemorrhoid development, research methods, differential diagnosis, conservative and surgical treatment, types of operations). Acute proctitis (etiology, pathogenesis, classification, clinic, research methods, differential diagnosis, conservative and surgical treatment). Chronic proctitis (etiology, pathogenesis, classification, clinic, research methods, differential diagnosis, conservative and surgical treatment). Anal fissure, anal itching (etiology, pathogenesis, classification, clinic, research methods, differential diagnosis, conservative and surgical treatment). Rectal prolapse (etiology, pathogenesis, classification, clinic, research methods, differential diagnosis, conservative and surgical treatment). Other diseases of the rectum: rectocele, rectovaginal fistula, papillitis, solitary ulcer, proctalgia, insufficiency of the anal sphincter (etiology, pathogenesis, classification, clinic, research methods, differential diagnosis, conservative and surgical treatment). Patient management (work of the applicant with patients, collecting complaints, history, conducting digital and instrumental examination of the rectum).

**Topic 15. Diseases of the soft tissues of the perineum.** Syndrome of perineal descent (state

of the problem, etiology, pathogenesis, classification, clinical manifestations, diagnostics, differential diagnosis, therapeutic tactics) Perineal pyoderma (state of the problem, etiology, pathogenesis, classification, clinical manifestations, diagnostics, differential diagnosis, therapeutic tactics). Perianal dermatitis (state of the problem, etiology, pathogenesis, classification, clinical manifestations, diagnostics, differential diagnosis, therapeutic tactics). Condylomatosis of the perineum (state of the problem, etiology, pathogenesis, classification, clinical manifestations, diagnostics, differential diagnosis, therapeutic tactics). Epithelial coccygeal sinking (state of the problem, etiology, pathogenesis, classification, clinical manifestations, diagnostics, differential diagnosis, therapeutic tactics). Rare diseases of the soft tissues of the perineum: Kaposi's sarcoma, melanoma, Paget's disease, Bowen's disease (state of the problem, etiology, pathogenesis, classification, clinical manifestations, diagnostics, differential diagnosis, therapeutic tactics). Anococcygeal pain syndrome (state of the problem, etiology, pathogenesis, classification, clinical manifestations, diagnostics, differential diagnosis, therapeutic tactics). Teratomas of pararectal localization (state of the problem, etiology, pathogenesis, classification, clinical manifestations, diagnostics, differential diagnosis, therapeutic tactics) Patient management with diseases of the soft tissues of the perineum.

**Topic 16. Closed and open abdominal trauma in peacetime and wartime.** Differential diagnosis for injuries of the internal organs of the abdominal cavity based on research results and laboratory indicators. Indications for conservative and surgical treatment. Principles of surgical treatment of injuries to the organs of the abdominal cavity.

### **The content of the academic discipline for the 5th year**

#### **Content Module 1.**

#### **THORACIC, CARDIAC, ENDOCRINE SURGERY**

**Topic 1. Chest trauma.** Rib fractures. Classification. Early and late complications. Clinic and diagnostics of pneumothorax, hemothorax. Special research methods: echocardiography, ultrasound scanning, heart catheterization, ciné-cardiography, thoracocentesis. Differential diagnosis. First medical aid and treatment tactics. Diagnostic program for heart injury. The triad of symptoms of heart injury. A unified clinical-diagnostic and therapeutic-surgical program for heart injuries. Determination of penetrating and non-penetrating heart injuries. Classification of heart injuries. Pathogenesis. Diagnostics and differential diagnosis of penetrating and non-penetrating heart wounds.

**Topic 2. Purulent diseases of lungs and pleura.** Lung abscess and gangrene, bronchiectatic disease. Acute and chronic empyema of pleura, pyopneumothorax. Etiology, pathogenesis, diagnostics. Features of the clinical course. Differential diagnosis. Methods of conservative and surgical treatment.

**Topic 3. Mediastinal diseases.** Benign tumors and cysts. Classification. Diagnostics. Differential diagnosis. Methods of surgical treatment. Diseases and injuries of the esophagus: Benign tumors and cysts. Achalasia of the cardia, Burns. Esophageal diverticula. Gastroesophageal reflux. Other esophageal diseases: foreign bodies, injuries, Barrett's esophagus. Hernias of the esophageal opening of the diaphragm. Classification. Diagnostics. Differential diagnosis. Methods of surgical treatment.

**Topic 4. Euthyroid and toxic goiter.** Classification. Etiology, pathogenesis. Diagnostics. Differential diagnosis. Special research methods. Conservative therapy. Preoperative preparation. Surgical treatment. Thyroiditis. Etiology, pathogenesis. Classification. Diagnostics. Differential diagnosis. Special research methods. Conservative therapy. Preoperative preparation. Surgical treatment.

**Topic 5. Breast diseases (dys-hormonal, neoplastic).** Mastitis. Etiology, pathogenesis. Classification. Special research methods. Diagnostics. Differential diagnosis. Conservative therapy. Surgical treatment. Mastopathy and benign tumors of the breast. Etiology, pathogenesis. Classification. Special research methods. Diagnostics. Differential diagnosis. Conservative therapy. Surgical treatment.

#### **Content Module 2.**

#### **VASCULAR SURGERY**

**Topic 6. Arterial thrombosis and embolisms.** Etiology, pathogenesis. Classification of acute

limb ischemia. Clinical stages of progression. Diagnostics. Functional tests. Differential diagnosis. Methods of surgical treatment.

**Topic 7. Chronic ischemia of lower limbs.** Obliterative atherosclerosis and endarteritis. Buerger's disease. Raynaud's disease. Classification of chronic ischemia and levels of occlusion of the aorta and lower limb arteries. Clinical stages of progression. Diagnostics. Functional tests. Special research methods. Differential diagnosis. Methods of conservative and surgical treatment.

**Topic 8. Diabetic Foot.** Etiology, pathogenesis. Classification. Wagner's classification. Clinical picture. Special research methods. Comparative diagnostics of different forms of diabetic foot. Differential diagnosis. Conservative therapy. Surgical treatment.

**Topic 9. Thromboembolism of the pulmonary artery.** Etiology, pathogenesis. Pathomorphological and clinical classifications. Clinic, diagnostics, treatment. Modern endovascular surgical interventions. Prevention methods.

**Topic 10. Aneurysm of the aorta and peripheral arteries.** Etiology, pathogenesis. Classification. Clinical variations of progression. Special research methods. Diagnostics. Differential diagnosis. Conservative therapy. Preoperative preparation. Surgical treatment.

**Topic 11. Abdominal ischemic syndrome.** Mesenteric thrombosis. Etiology, pathogenesis. Classification. Clinical variations of progression. Special research methods. Diagnostics. Differential diagnosis. Complications. Methods of conservative treatment. Prevention. Rehabilitation.

**Topic 12. Varicose vein expansion of lower limbs.** Etiology. Pathogenesis. Classification. Complications. Diagnostics. Functional tests. Special research methods. Methods of conservative treatment. Compression therapy. Methods of surgical treatment. Treatment of varicose ulcer. Diagnostics and treatment of bleeding from a varicose node.

**Topic 13. Thrombosis of major veins.** Etiology. Pathogenesis. Classification. Clinic. Diagnostics. Differential diagnosis. Methods of conservative and surgical treatment. Iliofemoral thrombosis. White and blue phlegmasia. Clinic. Diagnostics. Differential diagnosis. Methods of conservative and surgical treatment.

**Topic 14. Post-Thrombophlebitic syndrome.** Etiology. Pathogenesis. Classification. Complications. Diagnostics. Functional tests. Special research methods. Methods of conservative treatment. Compression therapy. Methods of surgical treatment. Treatment of venous ulcer.

**Topic 15. Lymphedema of limbs.** Etiology. Pathogenesis. Classification. Stages of lymphedema. Complications. Diagnostics. Special research methods. Methods of conservative treatment. Compression therapy. Conservative therapy. Methods of surgical treatment.

**Topic 16. Patient management.** Structure and scheme of the medical history of a surgical patient. Order of collecting complaints, disease and life history. Specifics of the physical examination of the patient by systems. Examination of the site of disease. The role of additional examination methods in diagnosis. Diagnosis and determination of treatment tactics for the patient. Management of thematic patients. Writing an educational medical history. Defense of the educational medical history.

### **Content Module 3.**

#### **MILITARY SURGERY**

**Topic 17. Gunshot wounds.** Chest injuries. Gunshot wound. Classification. Features of the pathogenesis of gunshot and blast wounds. Zones of injury and their clinical characteristics. The course of uncomplicated gunshot wounds. Treatment of uncomplicated gunshot wounds. Gunshot wounds to the chest. Non-penetrating and penetrating chest injuries. Features of the clinical picture. Pneumothorax, hemothorax, chylothorax. Classification. Clinical manifestations. Instrumental diagnostic methods. Features of the diagnosis of tension pneumothorax. First medical aid for chest injuries. Technique of pleural puncture. Methods of draining the pleural cavity. Indications for thoracotomy.

**Topic 18. Thermal Injuries.** Classification of burns. Etiology of burn injuries, the importance of contributing factors. The mechanism of local and general changes in the body due to burns, including chemical and electrical injuries. Diagnosis and treatment of different periods of burn disease. Frank's coefficient and its use. The importance of determining the area of the burn. Complications of burn

disease, its treatment, prevention. Classification of frostbite and general hypothermia. Clinic and diagnosis of frostbite. First aid for frostbite and hypothermia. Local and general treatment of frostbite and hypothermia. Features of electrical injury (clinic, diagnosis, course, first aid, treatment).

**Topic 19. Infectious complications of combat injuries.** Classification of infected and purulent wounds. Causes of infection and features of the wound process in infected wounds. Features of the clinical picture of infected and purulent wounds in gunshot wounds. Main principles of treatment of purulent gunshot wounds. New methods and means for treating patients with purulent surgical infection.

**Topic 20. Bleeding, blood loss.** Definition of bleeding, classification of bleedings. Causes of bleeding. Clinical picture of acute blood loss; adaptive and compensatory mechanisms during blood loss. Consequences of bleeding. Hemorrhagic shock: causes, pathogenesis, clinical course. Features of providing first aid for different types of bleeding: temporary cessation of bleeding. Principles of treating patients with bleeding: final cessation of bleeding, compensation of BV (blood volume). Clinical picture and first aid for individual types of bleeding - nasal, pulmonary, gastrointestinal, uterine, intra-abdominal.

## **The content of the academic discipline for the 6th year**

### **Content Module 1.**

#### **GENERAL ISSUES IN SURGERY**

**Topic 1. History of surgery in Ukraine.** Organization of surgical care in Ukraine. Ethics and deontology in surgery. New technologies in surgery. Modern methods of diagnostics and treatment. Development of surgery in Ukraine in ancient times. Features of the formation of surgery in Ukraine in the 18th-19th centuries. The role of I.V. Buyalsky, P.P. Pelekhin, M.I. Pirogov, M.V. Sklifosovsky, M.I. Yelinsky, V.O. Karavayev, V.F. Grube, A.I. Pidriz in the establishment of practical and theoretical surgery in Ukraine. Development of surgery in Ukraine in the 20th century. Contribution of Ukrainian scientists M.P. Trinkler, M.M. Volkovich, O.P. Krymov in the development of Ukrainian surgery in the first half of the 20th century. Contribution to the development of surgical science in Ukraine by academicians M.M. Amosov and O.O. Shalimov. Importance of the congresses of surgeons of Ukraine in organizing surgical care. Deontological interrelations in surgical practice (doctor-colleagues, doctor-patient). New technologies in surgery. Modern methods of diagnostics and treatment. Video endoscopic operations in surgery. Basic principles of operative endoscopic technique. Biliary endoscopic surgery. Laparoscopic methods of operations on the liver, esophagus, for peptic ulcers. Laparoscopic appendectomy, splenectomy, operations on retroperitoneal space organs. Video thoracoscopic operative interventions for the treatment of lung neoplasms. Endoscopic retrograde cholangiopancreatography. Endoscopic papillotomy. Puncture treatment under ultrasound control.

**Topic 2. Systemic inflammatory response syndrome in surgical patients.** Shock in surgical patients. Pathogenesis. Importance in various diseases and traumas. Treatment tactics. Shock in surgical patients. Causes. Diagnosis, treatment tactics. Pathogenesis of shock development. Stages of shock development. Types of shock - anaphylactic, hemorrhagic, traumatic, septic, cardiogenic shock. Features of the clinical picture depending on the type of shock. Diagnostic algorithm. Treatment of different clinical types of shock. Provision of emergency care in traumatic shock in wartime conditions. Transport immobilization in military conditions as a means of preventing shock. Temporary cessation of bleeding as a means of preventing hemorrhagic shock during war.

**Topic 3. Critical conditions in surgical patients.** Acute respiratory distress syndrome, abdominal compartment syndrome. Clinical picture, diagnosis, treatment of acute respiratory distress syndrome. Compartment syndrome - causes, diagnosis, prevention. Collapse - causes, clinical picture, differential diagnosis, emergency aid.

**Topic 4. Rules for conducting antibiotic therapy in the prevention and treatment of surgical infection.** Classification of surgical infection. Pathogens of surgical infection. Local and general clinical manifestations of surgical infection depending on age, comorbidities, and virulence

of microflora. Acute purulent inflammatory processes of the skin and subcutaneous tissue. Principles of conservative and surgical treatment of acute purulent diseases. Etiology, clinic, and treatment of anaerobic infection. Rational antibiotic therapy of surgical infection.

**Topic 5. Purulent diseases of the skin and soft tissues.** Diagnosis, differential diagnosis. Methods of conservative and surgical treatment. Purulent diseases of the hand and fingers. Classification of purulent infection of soft tissues. Principles of treatment of purulent wounds. Purulent diseases of the skin and subcutaneous tissue, their diagnosis, and treatment. Purulent inflammations of cellular spaces. Features of the course and principles of treatment of purulent infection of soft tissues of the face. Features of the clinic and treatment of inflammatory processes in patients suffering from diabetes mellitus. Methods of surgical operations and drainage of purulent cavities. Prevention of inflammatory diseases of soft tissues. Primary surgical treatment as a means of preventing purulent complications during war. Purulent diseases of the hand and fingers. Clinic, diagnostics, differential diagnosis. Methods of conservative and surgical treatment. Anatomy of the hand. Methodology for examining patients with purulent diseases of the hand. Classification of purulent diseases of the hand. Indications for conservative and surgical treatment of patients with felon. Features of incisions and drainage during operations on the hand. Clinic and diagnosis of superficial and deep phlegmon of the hand. Prevention of inflammatory processes on the hand. Main principles of functional treatment in the postoperative period. Issues of labor rehabilitation after surgery on the hand.

## **Content Module 2. Clinical manifestations of surgical diseases**

**Topic 6. Abdominal Pain, evaluation of pain syndrome features in differential diagnosis of diseases of the abdominal organs.** Pseudoabdominal pains. Features of pain syndrome in peritonitis. Features of pain in perforation of a hollow organ. Features of pain syndrome in surgical pathology: in the upper abdomen (acute cholecystitis, acute pancreatitis, perforation of gastric and duodenal ulcers). Features of local pain in acute appendicitis.

**Topic 7. Dysphagia, vomiting, and defecation act syndrome.** Importance in diagnosis and differential diagnosis. Medical tactics. Differential diagnosis of dysphagias. Features of vomiting in acute pancreatitis, acute cholecystitis, perforation of a hollow organ, bleeding into the lumen of the gastrointestinal tract. Disorders of the act of defecation in surgical diseases – constipation, diarrhea. Change in stool color in bleeding. Digital rectal examination.

**Topic 8. Acute intestinal obstruction syndrome.** Classification of intestinal obstruction. Dynamic intestinal obstruction – etiology, clinical picture, diagnosis, differential diagnosis, treatment, prevention. Mechanical intestinal obstruction – etiology, pathogenesis, clinic, differential diagnosis of obstructive and strangulation intestinal obstruction. Surgeon's tactics depending on the form of intestinal obstruction. Preoperative preparation of patients. Correction of electrolyte imbalances. Choice of operation method depending on the type of obstruction. Diagnosis and prevention of postoperative complications.

**Topic 9. Acute abdomen syndrome.** Diagnosis, differential diagnosis, and treatment tactics. Differential diagnosis of acute diseases of the abdominal cavity. Peritonitis. Diagnosis and differential diagnosis of peritonitis. Laboratory methods of examination. Etiology and pathogenesis of peritonitis. Classification of peritonitis. Stages of peritonitis. Prognosis of the course of acute peritonitis. Main principles of peritonitis treatment.

**Topic 10. Local and widespread purulent inflammatory processes of the abdominal organs and peritoneum.** Etiology, pathogenesis, clinic, diagnosis, treatment. Acute appendicitis, clinic, diagnosis, treatment. Perforated ulcer, acute pancreatitis, acute cholecystitis – differential diagnosis, clinic, treatment.

**Topic 11. Mechanical jaundice.** Causes of occurrence. Differential diagnostic tactics. Modern approaches to treatment. Hepatic failure in surgical diseases, methods of prevention and treatment. Mechanical jaundice, as a complication of cholelithiasis. Tumors of the head of the pancreas, the Vater papilla, intraductal tumors, as a cause of mechanical jaundice. Differential diagnosis, clinic, treatment.

**Topic 12. Gastrointestinal bleeding.** Causes of occurrence, diagnosis and differential diagnosis, treatment tactics. Ulcerative bleeding – clinic, diagnosis, treatment. Portal hypertension syndrome, complicated by bleeding. Mallory-Weiss syndrome. Hernias of the esophageal opening of the diaphragm, complicated by bleeding. Tumors of the gastrointestinal tract with decay and bleeding – clinic, diagnosis, differential diagnosis, treatment tactics.

**Topic 13. Injuries to the abdominal organs.** Symptomatology of damage to the abdominal organs and retroperitoneal space. Instrumental diagnostic methods. Diagnostic and therapeutic tactics. Closed abdominal trauma – diagnostic algorithm. Clinical picture of liver, spleen, rupture of hollow organs - stomach, intestine, bladder, kidney. Penetrating injuries – clinical picture, differential diagnosis. Treatment tactics.

**Topic 14. Features of surgical diseases in pregnant women.** Diagnosis and differential diagnosis of acute diseases of the abdominal organs. Features of examination of pregnant women. Surgical tactics. Features of pain syndrome. Change in pain localization. The risk of surgery depending on the term of pregnancy. Anesthesiological support in surgical patients during pregnancy.

**Topic 15. The course of acute diseases in the elderly.** Age-related changes in the body. Features of the course in patients with diabetes, cardiovascular pathology, renal failure. Diagnosis and differential diagnosis of acute surgical diseases in the elderly. Features of the clinical picture, examination of patients. Surgical tactics.

**Topic 16. Surgical complications in patients with infectious pathology.** Differential diagnosis between acute surgical and infectious diseases. Pathogenesis of typhoid fever. Local changes in the intestine. Features of the clinical picture of perforated ulcers of the small intestine. Bleeding into the lumen of the gastrointestinal tract in infectious diseases. Differential diagnosis of mechanical and parenchymal jaundice. Treatment of acute hepatic failure. Surgical complications of echinococcosis of the liver. Endemic focus of human echinococcosis in the Odessa region. Work of the anti-echinococcal aid center based on the regional clinical hospital (Dept. of Surgery № 1)

**Topic 17. Modern methods of diagnosis and treatment of diseases of the cardiovascular and respiratory systems.** Special research methods echocardiography, ultrasound scanning, heart catheterization, cinecardiography, coronary angiography. Diagnostic methods for examining the organs of the thoracic cage - laryngoscopy, bronchoscopy, bronchography, biopsy, thoracocentesis. Treatment of congenital heart defects. Aortocoronary bypass. The importance of the artificial circulation apparatus for heart surgery.

**Topic 18. Chest pain syndrome, respiratory and cardiac insufficiency in the diagnosis and differential diagnosis of diseases of the thoracic cavity organs.** Etiology: spontaneous pneumothorax, pulmonary artery thromboembolism, bronchial foreign body, mediastinitis, lung abscess, bronchiectatic disease, pleural empyema, lung gangrene, pyopneumothorax, esophageal injury, chest trauma. Differential diagnosis. Principles of conservative therapy and surgical treatment.

**Topic 19. Surgical pathology of the lungs and pleura.** Principles of Diagnosis and Treatment. Purulent diseases of the lungs and pleura. Classification: a) Acute lung abscess, purulent; b) Acute lung abscess, gangrenous. c) Widespread gangrene. d) Chronic lung abscess. Etiology, pathogenesis, diagnostics. Conservative and surgical treatment. Prevention. Bronchiectatic disease – classification, pathoanatomy, diagnostics, treatment. Empyemas of the pleura – etiology, pathogenesis, clinical picture, diagnostics. Technique of pleural puncture. Prevention of pleural empyema.

**Topic 20. Oncological pathology of the lungs and pleura. principles of diagnosis and treatment. lung and mediastinal tumors.** Benign tumors – classification. Tumors that occur rarely (fibromas, angiomas, teratomas, neurinomas, leiomyomas). Clinical and instrumental diagnostics. Differential diagnosis. Treatment. Echinococcal lesions of the lungs – clinic, diagnostics, treatment. Lung cancer: Classification according to the TNM system. Pathoanatomy. Histological structure. Clinical picture. Diagnostics, differential diagnosis. Treatment – surgical, radiation. Recanalization of the bronchi – indications for its conduct.

**Topic 21. Injuries to the organs of the thoracic cavity.** Diagnostic program for heart injury. Symptom triad of heart injury. Unified clinical-diagnostic and therapeutic-surgical program for heart injuries. Determination of penetrating and non-penetrating heart injuries. Classification of heart

injuries. Pathogenesis. Diagnosis and differential diagnosis of penetrating and non-penetrating heart injuries.

**Topic 22. Injuries to the organs of the thoracic cavity.** Clinic and diagnostics of pneumothorax, hemothorax, and chylothorax. Treatment approaches. Determination of open and closed chest injuries. Pathogenesis of complications. Risk factors for injuries. Injury classification. Pneumothorax - types, clinical picture, diagnosis, treatment tactics. Hemothorax. Causes. Clinic, diagnostics, differential diagnostics. Treatment.

**Topic 23. Aortic arch syndrome.** Clinic, diagnostics, differential diagnostics, treatment approaches. Aneurysms of the thoracic aorta. Etiology, pathogenesis, pathological anatomy. Clinical picture and diagnostics. Complications. Clinical picture. Diagnostics. Differential diagnostics. Treatment. Occlusive lesions of the branches of the aortic arch. Etiology and pathogenesis. Clinical picture. Diagnostics. Treatment tactics.

**Topic 24. Limb ischemia syndrome.** Diseases causing it. Assessment of pain syndrome in the limbs during diagnostics and differential diagnosis of modern diseases. Conservative and surgical treatment of lower limb ischemia. Obliterating atherosclerosis of the lower limb arteries. Classification. Etiopathogenesis. Clinical picture. Diagnostics and differential diagnostics. Conservative and surgical treatment. Obliterating thromboangiitis. Causes. Pathogenesis of the disease. Clinical picture. Diagnostic program. Conservative and surgical treatment. Prevention. Assessment of pain syndrome in the limbs during diagnostics and differential diagnosis of modern diseases, lesions of the nervous system, and pathology of the musculoskeletal system. Features of pain syndrome in diabetic foot. Night pain in obliterating diseases of the lower limb vessels. "Shop window pain". Determination of pulsation on distal arteries of the lower limbs.

**Topic 25. Issues of thrombosis and embolisms.** Venous Diseases. Causes of occurrence. Ways of prevention, diagnosis, and differential diagnosis, treatment tactics. Modern possibilities of conservative treatment. Indications for surgical treatment and its main methods. Acute arterial thrombosis, arterial embolism, etiology, pathogenesis. Degrees of acute arterial ischemia. Clinical picture. Diagnosis. Differential diagnosis. Conservative treatment. Surgical treatment of acute arterial occlusion. Modern endovascular interventions. Venous diseases. Superior vena cava syndrome. Inferior vena cava syndrome. Causes. Diagnostics. Differential diagnosis. Treatment tactics. Etiology, pathogenesis of inferior and superior vena cava syndrome. Clinical signs. Diagnostic program. Differential diagnosis. Treatment tactics.

#### 4. Educational discipline structure for the 4th year course

Names of topics	Number of hours			
	Total	including		
		lect	pr	Self-Study
1	2	3	4	5
<b>Content Module 1. Urgent abdominal surgery</b>				
Topic 1. Acute Appendicitis	6	-	4	2
Topic 2. Acute Cholecystitis	6	-	4	2
Topic 3. Acute Pancreatitis	8	2	4	2
Topic 4. Peptic ulcer disease of the stomach and duodenum and acute complications of peptic ulcer disease of the stomach and duodenum	8	2	4	2
Tema 5. Acute Intestinal Obstruction	6	-	4	2
Tema 6. Acute Peritonitis	5	-	4	1
Tema 7. External and internal abdominal hernias and their complications	8	2	4	2
Tema 8. Patient management	10		4	6
<i>Together according to the content module 1</i>	<i>57</i>	<i>6</i>	<i>32</i>	<i>19</i>

<b>Content Module 2. Surgical gastroenterology and proctology</b>				
Topic 9. Surgery of the stomach, duodenum, diseases of the operated stomach	6	-	2	4
Topic 10. Liver Diseases	6	-	4	2
Topic 11. Diseases of the extrahepatic bile ducts	4	-	2	2
Topic 12. Diseases of the pancreas and spleen	6	-	4	2
Topic 13. Diseases of the small and large intestine	6	-	4	2
Topic 14. Diseases of the Rectum	4	-	2	2
Topic 15. Diseases of the soft tissues of the perineum	2	-	2	-
Topic 16. Closed and open abdominal trauma in peacetime and wartime	6	-	4	2
<i>Total for Content Module 2</i>	<i>40</i>	<i>-</i>	<i>24</i>	<i>16</i>
<i>Test Control Preparation</i>		-	4	
<i>Differential Credit</i>		-	4	-
<b>TOTAL</b>	<b>105</b>	<b>6</b>	<b>64</b>	<b>35</b>

#### Educational discipline structure for the 5th year course

Names of topics	Number of hours			
	Total	including		
		lect	pr	Self-Study
<b>Content Module 1. THORACIC, CARDIAC, ENDOCRINE SURGERY</b>				
Topic 1. Chest trauma.	6	-	4	2
Topic 2. Purulent diseases of the lungs and pleura.	6	-	4	2
Topic 3. Mediastinal diseases. diseases and traumas of the esophagus: hernias of the esophageal hiatus of the diaphragm.	10	2	6	2
Topic 4. Euthyroid and toxic goiter.	4	-	2	2
Topic 5. Diseases of the mammary gland (dys hormonal, tumorous).	4	-	2	2
<i>Together according to the content module 1</i>	<i>30</i>	<i>2</i>	<i>18</i>	<i>10</i>
<b>Content Module 2. VASCULAR SURGERY</b>				
Topic 6. Arterial Thrombosis and Embolisms.	5	1	2	2
Topic 7. Chronic Ischemia of Lower Limbs.	7	1	4	2
Topic 8. Diabetic Foot.	4	-	2	2
Topic 9. Thromboembolism of the Pulmonary Artery.	4	-	2	2
Topic 10. Aneurysm of the Aorta and Peripheral Arteries.	6	-	4	2
Topic 11. Abdominal Ischemic Syndrome. Mesenteric Thrombosis.	6	-	4	2
Topic 12. Varicose Vein Expansion of Lower Limbs.	9	1	4	2
Topic 13. Thrombosis of Major Veins.	5	1	2	2
Topic 14. Post-Thrombophlebitic Syndrome.	6	-	4	2



Topic 15. Lymphedema of Limbs.	4	-	2	2
Topic 16. Patient Management.	6	-	6	
<i>Together according to the content module 2</i>	<i>62</i>	<i>4</i>	<i>36</i>	<i>20</i>
<b>Content Module 3. MILITARY SURGERY</b>				
Topic 17. Gunshot wounds. Chest injuries.	10	4	4	2
Topic 18. Thermal injuries.	4	-	2	2
Topic 19. Infectious Complications of Combat Injuries.	4	-	2	2
Topic 20. Bleeding, blood loss.	6	2	2	2
<i>Together according to the content module 3</i>	<i>24</i>	<i>6</i>	<i>8</i>	<i>8</i>
Test Control	2	-	2	
Differential Credit	4	-	2	2
<b>Total</b>	<b>120</b>	<b>12</b>	<b>68</b>	<b>40</b>

### Структура навчальної дисципліни для 6 курсу

Names of topics	Number of hours			
	Total	including		
		lect	pr	Self-Study
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Content Module 1. General Issues in Surgery</b>				
Topic 1. History of surgery in ukraine. Organization of surgical care in ukraine. Ethics and deontology in surgery. New technologies in surgery. Modern diagnostic and treatment methods.	8	-	6	2
Topic 2. Systemic inflammatory response syndrome in surgical patients. Pathogenesis, importance in different diseases and traumas. Treatment tactics. Shock in surgical patients. Causes, diagnosis, treatment tactics.	10	-	6	4
Topic 3. Critical states in surgical patients: acute respiratory distress syndrome, abdominal compartment syndrome, collapse.	6	-	4	2
Topic 4. Rules for conducting antibiotic therapy for the prevention and treatment of surgical infection.	4	-	2	2
Topic 5. Purulent diseases of the skin and soft tissues. Diagnosis, differential diagnosis. Methods of conservative and surgical treatment. Purulent diseases of the hand and fingers. Methods of conservative and surgical treatment.	10	-	6	4
<i>Together according to the content module 1</i>	<i>38</i>	<i>-</i>	<i>24</i>	<i>14</i>
<b>Content Module 2. Clinical Manifestations of Surgical Diseases</b>				
Topic 6. Abdominal pain, evaluation of pain syndrome features in differential diagnosis of diseases of the abdominal organs.	8	-	6	2
Topic 7. Dysphagia syndrome, vomiting, and defecation act disorder. Importance in diagnosis	10	-	6	4

and differential diagnosis. Medical tactics.				
Topic 8. Syndrome of acute intestinal obstruction.	8	-	6	2
Topic 9. Acute abdomen syndrome. Diagnosis, differential diagnosis, and treatment tactics. Differential diagnosis of acute diseases of the abdominal organs.	11	-	6	5
Topic 10. Local and diffuse purulent inflammatory processes of abdominal organs and abdomen. Etiology, pathogenesis, clinic, diagnosis, and treatment.	8	-	6	2
Topic 11. Mechanical jaundice. Causes of occurrence. Differential diagnostic tactics. Modern approaches to treatment. Liver failure in surgical diseases, methods of prevention and treatment.	8	-	6	2
Topic 12. Gastrointestinal bleeding. Causes, diagnosis, and differential diagnosis, treatment tactics.	11	-	6	5
Topic 13. Abdominal trauma. Symptomatology of damage to abdominal organs and retroperitoneal space. Instrumental diagnostic methods. Diagnostic and treatment tactics.	11	-	6	5
Topic 14. Peculiarities of surgical disease progression in pregnant women. Diagnosis and differential diagnosis of acute diseases of the abdominal organs. Special examination features. Surgical tactics. Prevention of premature labor.	6	-	4	2
Topic 15. Progression of acute diseases in the elderly.	4	-	2	2
Topic 16. Surgical diseases in patients with infectious pathology. Differential diagnosis between acute surgical and infectious diseases.	8	-	6	2
Topic 17. Modern diagnostic and treatment methods for diseases of the cardiovascular and respiratory systems.	8	-	6	2
Topic 18. Chest pain syndrome, respiratory and cardiac insufficiency in the diagnosis and differential diagnosis of diseases of the thoracic organs.	8	-	6	2
Topic 19. Surgical pathology of the lungs and pleura. Purulent diseases of the lungs and pleura.	8	-	6	2
Topic 20. Oncological pathology of the lungs and pleura. Tumors of the lungs and mediastinum.	8	-	6	2
Topic 21. Damage to the organs of the thoracic cavity. Diagnostic program for heart damage. Symptom triad of heart injury. Unified clinical-diagnostic and surgical treatment program for heart injuries.	8	-	6	2

Topic 22. Damage to the organs of the thoracic cavity. Clinical diagnosis of pneumothorax, hemothorax, and chylothorax. Treatment approaches.	10	-	6	4
Topic 23. Aortic arch syndrome. Clinic, differential diagnosis, treatment approaches.	8	-	6	2
Topic 24. Limb ischemia syndrome. Diseases causing it. Conservative and surgical treatment of lower limb occlusions. Evaluation of pain syndrome in the limbs in the diagnosis and differential diagnosis of vascular diseases, nervous system disorders, and musculoskeletal pathology.	9	-	4	5
Topic 25. Problems of thromboses and embolisms. Venous diseases.	6	-	4	2
<i>Together according to the content module 2</i>	166	-	110	56
Exam	6	-	6	
<b>Total (hours)</b>	210	-	140	70

## 5. Topics of Lectures/Seminars/Practical/Laboratory Classes

### 5.1. Lecture Topics

#### 4th Year

№	Topic	Number of hours
<b>4th Year</b>		
1.	Lecture 1: hernias of the abdomen and their complications.	2
2.	Lecture 2: acute pancreatitis.	2
3.	Lecture 3: peptic ulcer disease and acute complications of peptic ulcer disease of the stomach and duodenum.	2
	<b>Total</b>	<b>6</b>
<b>5th Year</b>		
1.	Lecture 1: diseases and injuries of the esophagus. Hernias of the esophageal hiatus of the diaphragm. Clinic, diagnosis, and treatment.	2
2.	Lecture 2: clinic, diagnosis, and treatment of acute and chronic ischemia of the lower limbs.	2
3.	Lecture 3: diagnosis and treatment of acute and chronic diseases of the peripheral veins of the upper and lower limbs.	2
4.	Lecture 4: gunshot wounds.	2
5.	Lecture 5: injuries (damage) to the chest.	2
8.	Lecture 6: bleeding, blood loss.	2
	<b>Total</b>	<b>12</b>

**Lectures are not provided for the 6th year.**

### 5.2. Topics of seminar classes

Seminar classes are not provided.

### 5.3. Topics of practical classes

#### 4th Year

№	Topic	Number of hours
1.	Practical lesson No. 1. Acute appendicitis. Anatomical and physiological information. Etiology and pathogenesis. Classification. Clinic, diagnosis, differential diagnosis. Tactics of treatment.	2
2.	Practice session #2. Atypical clinical picture of acute appendicitis Complications of acute appendicitis and appendectomy. Diagnostic and treatment program.	2
3.	Practical lesson No. 3 Features of the clinical course, clinical picture of acute cholecystitis and diagnostic and treatment program in elderly patients and patients with concomitant pathology. Complications of acute cholecystitis and cholecystectomy	4
4.	Practical lesson No. 4 Etiology and pathogenesis, classification of acute pancreatitis. Clinic of mild and severe acute pancreatitis. Differential diagnosis of acute pancreatitis.	2
5.	Practical lesson No. 5 Complications of acute pancreatitis: acute pseudocyst of the pancreas, pancreatic abscess, widespread peritonitis, necrosis of the walls of cavity organs, bleeding into the abdominal cavity, acute ulcers of the alimentary canal, bleeding from acute ulcers into the cavity of the alimentary canal, perforation of acute.	2
6.	Practical lesson No. 6 Etiology, pathogenesis and classification of peptic ulcer disease, classification of perforated gastroduodenal ulcers. Clinic of typical and atypical perforated gastroduodenal ulcer. Treatment tactics for perforated gastroduodenal ulcer	2
7.	Practical lesson No. 7 Complications of peptic ulcer disease of the stomach and duodenum. Etiopathogenesis, classification of peptic ulcer bleeding. Clinic for complications of ulcer disease. Laboratory and endoscopic methods of diagnosing ulcer bleeding. Treatment tactics for complications of UD.	2
8.	Practical lesson No. 8 Acute intestinal obstruction. Etiology and pathogenesis. Typical clinical picture. Classification	2
9.	Practical class No.9 Acute intestinal obstruction Principles of conservative and surgical treatment	2
10.	Practical class No.10 Etiology, pathogenesis, classification of acute peritonitis. Clinic. Treatment tactics for acute peritonitis. Peculiarities of providing assistance to patients with HIV infection.	4
11.	Practice lesson No. 11 Abdominal hernias. Classification of abdominal hernias. Etiology. Pathogenesis. Disease clinic. Principles of surgical treatment. Differential diagnosis of external abdominal hernias. Methods of examination and diagnosis.	2

12.	Practical lesson No. 12 Types of hernia complications and principles of surgical treatment. Methods of instrumental research in internal hernias. Complication.	2
13.	Practical class No.13 Treatment of patients. Writing medical history.	4
14.	Practical class No.14 Conservative and operative treatment of gastric ulcer and peptic ulcer, types of operations. Diseases of the operated stomach	2
15.	Practical class No.15 Liver diseases Fibrosis, cirrhosis of the liver. Liver failure. Parasitic and non-parasitic lesions of the liver. Examination methods. Complication. Principles of therapeutic tactics".	4
16.	Practical class No.16 Anatomical and physiological features of the biliary tract. Cholangitis, choledocholithiasis, mechanical jaundice. Etiology and pathogenesis. Classification. Clinic, diagnosis, differential diagnosis. Surgical tactics. Principles of treatment. Postcholecystectomy syndrome	2
17.	Practical class No.17 Chronic pancreatitis. Diagnostic methods. Clinic. Diagnostics. Complication of chronic pancreatitis. Principles of treatment. Cysts and fistulas. Principles of surgical tactics.	2
18.	Practical class No.18 Spleen disease. Malformations, cysts of the spleen. Spleen injury. Diagnostic methods, indications for surgical treatment	2
19.	Practical class No.19 Classification of surgical diseases of the small intestine. Nonspecific ulcerative colitis. Crohn's disease. Diverticular disease and colon polyposis. Methods of diagnosis and treatment.	4
20.	Practical class No.20 Diseases of the rectum - hemorrhoids, paraproctitis, anal fissure, rectal prolapse	2
21.	Practical class No.21 Diseases of the soft tissues of the perineum "Perineal prolapse syndrome. Perineal pyoderma. Condylomatosis of the perineum. Epithelial coccygeal immersion	2
22.	Practical lesson No.22 Closed and open abdominal trauma. Differential diagnosis of injuries of the internal organs of the abdominal cavity according to the results of research and laboratory indicators. Principles of surgical treatment.	4
23.	Compilation of test control	4
23.	Differential calculation	4
<b>TOTAL</b>		<b>64</b>

#### 5th year

№	Topic	A number of hours
1.	Chest injuries. Rib fractures. Classification. Early and late complications.	2

	Clinic and diagnosis of pneumothorax, hemothorax. Special research methods: echocardiography, ultrasound scanning, heart probing, cinecardiography, thoracentesis. Differential diagnosis. First aid and treatment tactics.	
2.	Chest injuries. Diagnostic program for heart damage. Triad of symptoms of heart injury. The only clinical-diagnostic and medical-surgical program for heart injuries. Definition of penetrating and non-penetrating heart injuries. Classification of heart damage. Pathogenesis. Diagnosis and differential diagnosis of penetrating and non-penetrating wounds of the heart.	2
3.	Purulent diseases of the lungs and pleura. Lung abscess and gangrene, bronchiectasis. Etiology, pathogenesis, diagnosis. Features of the clinical course.	2
4.	Purulent diseases of the lungs and pleura. Acute and chronic pleural empyema, pneumothorax. Differential diagnosis. Methods of conservative and surgical treatment.	2
5.	Interstitial disease. Classification. Diagnostics. Differential diagnosis. Methods of surgical treatment.	2
6.	Esophageal diseases and injuries: Benign tumors and cysts. Achalasia of the cardia, Burns. Esophageal diverticula.	2
7.	Gastroesophageal reflux. Other diseases of the esophagus: foreign bodies, injuries, BARRETT's esophagus. Hiatal hernia.	2
8.	Euthyroid and toxic goiter. Classification. Special research methods. Diagnostics. Differential diagnosis. Preoperative preparation. Surgical treatment.	2
9.	Diseases of the mammary gland (dyshormonal, tumor). Mastitis. Classification. Special research methods. Diagnostics. Differential diagnosis. Preoperative preparation. Surgical treatment.	2
10.	Arterial thrombosis and embolism. Classification of acute limb ischemia. clinical stages of the course. Diagnostics. Differential diagnosis. Methods of surgical treatment.	2
11.	Chronic ischemia of the lower extremities. Obliterating atherosclerosis and endarteritis. Buerger's disease. Raynaud's disease. Classification of chronic ischemia and levels of occlusion of the aorta and arteries of the lower extremities. Clinical stages of the course.	2
12.	Chronic ischemia of the lower limbs. Diagnostics. Functional tests. Special research methods. Differential diagnosis. Methods of conservative and surgical treatment.	2
13.	Diabetic foot. Diagnostics. Special research methods. Methods of treatment.	2
14.	Thromboembolism of the pulmonary artery. Clinic, diagnosis, treatment. Means of prevention.	2
15.	Aneurysm of the aorta and peripheral arteries. Etiology, pathogenesis. Classification. Clinical variants of the course.	2
16.	Aneurysm of the aorta and peripheral arteries. Special research methods. Diagnostics. Differential diagnosis. Conservative therapy. Preoperative preparation. Surgical treatment.	2
17.	Abdominal ischemic syndrome. Clinical course options. Diagnostics. Differential diagnosis. Complication. Methods of conservative treatment. Prevention. Rehabilitation	2
18.	Mesenteriothrombosis. Clinical course options. Diagnostics. Differential diagnosis. Complication. Methods of conservative treatment. Prevention. Rehabilitation	2
19.	Varicose veins of lower limbs. Etiology. Pathogenesis. Classification. Clinic. Diagnostics. Complication.	2

20.	Varicose veins of the lower limbs. Special methods of diagnostic. Methods of surgical treatment	2
21.	Thrombosis of main veins. Etiology. Pathogenesis. Classification. Clinic. Diagnostics. Differential diagnosis. Methods of conservative and surgical treatment.	2
22.	Postthrombophlebitic syndrome. Etiology. Pathogenesis. Classification. Clinic. Diagnostics. Complication.	2
23.	Postthrombophlebitic syndrome. Special methods of investigation. Methods of surgical treatment	2
24.	Lymphedema of limbs. Forms of the disease. Diagnostics. Conservative and surgical treatment.	2
25.	Treatment of patients. Structure and scheme of medical history of a surgical patient. Procedure for collecting complaints, medical and life history. Peculiarities of the physical examination of the patient according to the systems. Examination of the site of the disease. Making a diagnosis and determining the patient's treatment tactics.	2
26.	Curation of thematic patients. Writing an educational medical history.	2
27.	Defense of educational medical history.	2
28.	Fire wound. Classification. Features of the pathogenesis of gunshot and mine-explosive wounds. Damage zones and their clinical characteristics. Features of the course of uncomplicated gunshot wounds	2
29.	Gunshot wounds (injuries) of the chest. Non-penetrating and penetrating wounds of the chest. Features of the clinical picture. Pneumothorax, hemothorax, chylothorax. Classification. Clinical manifestations.	2
30.	Thermal damage	2
31.	Infectious complications of combat injuries	2
32.	Bleeding, blood loss	2
33.	Test control	2
34.	Differential exam	2
	<b>Total</b>	<b>68</b>

#### 6th year

№	Topic	A number of hours
1.	Practical lesson 1-3 History of surgery of Ukraine. Organization of surgical care in Ukraine. Ethics and deontology in surgery. Deontological relationships in surgical practice (doctor-colleagues, doctor-patient). New technologies in surgery. Modern methods of diagnosis and treatment. Video endoscopic operations in surgery. Basic principles of operative endoscopic technique. Biliary endoscopic surgery. Laparoscopic methods of operations on the liver, esophagus, and peptic ulcers. Videothoracoscopic surgical interventions.	6
2.	Practical lesson 4-6 Systemic inflammatory response syndrome in surgical patients. Pathogenesis, significance in various diseases and injuries. Treatment tactics. Shock in surgical patients. Causes, diagnosis, treatment tactics. Types of shock - anaphylactic, hemorrhagic, traumatic, septic, cardiogenic. Clinical picture. Diagnostic algorithm. Treatment of various types of shock.	6
3.	Practical lesson 7-9. Critical conditions in surgical patients: acute respiratory distress syndrome. Clinical picture, diagnosis, treatment	4

	Abdominal cavity syndrome - causes, diagnosis, treatment, prevention. Collapse - causes, pathogenesis, clinical picture, differential diagnosis, emergency care.	
4.	Practical lesson 10-11 Rules for antibiotic therapy in the prevention and treatment of surgical infection.	2
5.	Practical lesson 12-14 Purulent diseases of the skin and soft tissues. Diagnosis, differential diagnosis. Methods of conservative and surgical treatment. Boils, carbuncles. Diagnosis, treatment. Abscesses and phlegmons - clinic, diagnosis, treatment. Prevention of purulent diseases of the skin and soft tissues. Purulent diseases of the hand and fingers. Anatomy of the hand. Classification of purulent diseases of the hand. Clinic and diagnosis of panaritium, deep and superficial phlegmon of the hand. Treatment of purulent diseases of the hand and fingers. Methods of conservative surgical treatment	6
6.	Practical lesson 15-17 Abdominal pain, assessment of pain syndrome features in the differential diagnosis of diseases of the abdominal cavity	6
7.	Practical class 18-20. Syndrome of dysphagia, vomiting and violation of the act of defecation. Significance of the syndrome in the diagnosis and differential diagnosis of acute diseases of the abdominal cavity.	6
8.	Practical lesson 21-23. Syndrome of acute intestinal obstruction. Etiology, pathogenesis. Diagnostics. Treatment tactics.	6
9.	Practical lesson 24-25. Acute abdominal syndrome. Diagnosis, differential diagnosis and treatment tactics. Differential diagnosis of acute diseases of abdominal organs.	6
10.	Practical lesson 26-27. Local and widespread purulent-inflammatory processes of the organs of the abdominal cavity and abdomen. Etiology, pathogenesis, clinic, diagnosis and treatment.	6
11.	Practical lesson 28-30. Mechanical jaundice. Causes of occurrence. Differential diagnostic tactics. Modern approaches to treatment. Liver failure in surgical diseases, methods of prevention and treatment.	6
12.	Practical lesson 31-33. Bleeding from the digestive tract. Causes, diagnosis and differential diagnosis, treatment tactics.	6
13.	Practical lesson 34-36. Abdominal injuries. Symptoms of damage to the organs of the abdominal cavity and the abdominal space. Instrumental methods of diagnosis. Therapeutic and diagnostic tactics.	6
14.	Practical lesson 37-38. Peculiarities of the course of surgical disease in pregnant women. Diagnosis and differential diagnosis of acute diseases of the abdominal cavity. Peculiarities of examination. Surgical tactics. Prevention of premature birth.	4
15.	Practical lesson 39-40. The course of acute diseases in the elderly.	2
16.	Practical lesson 41-42. Surgical diseases in patients with infectious pathology. Differential diagnosis between acute surgical and infectious diseases.	6



17.	Practical lesson 43-44. Modern methods of diagnosis and treatment of diseases of the cardiovascular and respiratory systems.	6
18.	Practical lesson 45-46. Syndrome of chest pain, respiratory and heart failure in the diagnosis and differential diagnosis of diseases of the chest cavity.	6
19.	Practical lesson 47-49. Surgical pathology of lungs and pleura. Purulent diseases of the lungs and pleura.	6
20.	Practical lesson 50-54. Oncological pathology of lungs and pleura. Lung and interstitial tumors.	6
21.	Practical lesson 55-57. Damage to the organs of the chest cavity. Diagnostic program for heart damage. Triad of symptoms of heart injury. The only clinical-diagnostic and medical-surgical program for heart injuries.	6
22.	Practical lesson 58-60. Damage to the organs of the chest cavity. Clinic and diagnosis of pneumothorax, hemothorax and chylothorax. Treatment approaches.	6
23.	Practical lesson 61-63 Aortic arch syndrome. Clinic, differential diagnosis, treatment approaches.	6
24.	Practical lesson 64-66. Limb ischemia syndrome. Causing diseases. Conservative and surgical treatment of lower limb occlusions. Assessment of pain syndrome in the extremities during diagnosis and differential diagnosis of vascular diseases, lesions of the nervous system and pathology of the musculoskeletal system.	4
25.	Practical lesson 67-69. Problems of thrombosis and embolism. Causes of occurrence, ways of prevention, diagnosis and differential diagnosis, treatment tactics. Modern possibilities of conservative treatment. Indications for surgical treatment and its main methods. Diseases of the veins. Superior vena cava syndrome	4
26.	Exam	6
<b>27.</b>	<b>Total</b>	<b>140</b>

#### 5.4. Topics of laboratory classes

Laboratory classes are not provided.

### 6. Independent work of a applicant of higher education

#### 4th year

<b>№</b>	<b>Title of the topic / types of tasks</b>	<b>A number of hours</b>
1.	Topic 1. Preparation for practical classes 1-2	2
2.	Topic 2. Preparation for practical classes 3	2
3.	Topic 3. Preparation for practical classes 4-5	2
4.	Topic 4. Preparation for practical classes 6-7	3
5.	Topic 5. Preparation for practical classes 8-9	3
6.	Topic 6. Preparation for practical classes 10	2
7.	Topic 7. Preparation for practical classes 11-12	3
8.	Topic 8. Preparation for practical classes 13	2
9.	Topic 9. Preparation for practical classes 14	2
10.	Topic 10. Preparation for practical classes 15	2
11.	Topic 11. Preparation for practical classes 16	2

12.	Topic 12. Preparation for practical classes 17-18	3
13.	Topic 13. Preparation for practical classes 19	2
14.	Topic 14. Preparation for practical classes 20	1
15.	Topic 15. Preparation for practical classes 21	2
16.	Topic 16. Preparation for practical classes 22	2
	<b>Total</b>	<b>35</b>

#### 5th year

№	Title of the topic / types of tasks	A number of hours
1.	<b>Preparation for practical classes</b> – theoretical preparation and development of practical skills	28
2.	<b>Independent study of topics that are not part of the classroom lesson plan:</b> 1. Modern methods of diagnosis, minimally invasive surgical treatment of heart diseases Endoscopic aorto-coronary bypass. 2. Acquire heart defects. Classification. Diagnostics. Indications for surgical treatment. Methods of operative interventions. Complication. Pericardial disease. Classification. Diagnostics. Differential diagnosis. Methods of surgical treatment. 3 Ischemic heart disease. Diagnostics. Indications for surgical treatment. Methods of operative interventions. Myocardial infarction, heart aneurysm, conduction disorder. Indications for surgical treatment. Methods of operative interventions. 4. Diseases of the parathyroid glands. Classification. Special research methods. Diagnostics. Differential diagnosis. Preoperative preparation. Surgical treatment. 5. Diseases of the adrenal glands. Classification. Special research methods. Diagnostics. Differential diagnosis. Preoperative preparation. Surgical treatment.	10
3.	<b>Preparation for differential assessment.</b>	2
	<b>Total</b>	<b>40</b>

#### 6th year

№	Title of the topic / types of tasks	A number of hours
1.	Preparation for practical classes – theoretical preparation and development of practical skills. Solving test control problems "Step-2" and situational problems.	30
2.	Independent work of students	30
	1. Differential diagnosis of gastrointestinal bleeding.	4
	2. Functional, instrumental research methods for diseases of the stomach and intestines.	4
	3. Functional, instrumental research methods for diseases of the liver, extrahepatic bile ducts, pancreas.	2
	4. Transplantology.	2
	5. Differential diagnosis and treatment of thyroid gland diseases.	2
	6. Differential diagnosis and treatment of diseases of the rectum and pararectal space.	2
	7. Differential diagnosis and treatment of mediastinal diseases	2
	8. Differential diagnosis and treatment of acute thrombosis of mesenteric vessels.	2
	9. Differential diagnosis and treatment of intestinal fistula	2

	10. Anticoagulants and thrombolytic therapy in acute thrombosis	4
	11. Differential diagnosis, prevention and treatment of acute peptic ulcer	2
	12. Writing the abstract "Treatment of purulent diseases of the skin and soft tissues".	2
	13. Learning the practical skill "Finger examination of the rectum" on dummies.	1
	14. Writing an essay "Treatment of acute intestinal obstruction".	1
	15. Learning the technique of laparocentesis.	2
	16. Learning the practical skill "Determination of blood groups and temporary stopping of bleeding".	2
	17. Performing primary surgical treatment on a dummy	2
	18. Learning the practical skill "Transport immobilization"	2
	<b>Total</b>	<b>70</b>

## 7. Teaching methods

**Lectures:** educational, informative, lecture-visualization, lecture-discussion, lecture-consultation.

**Practical classes:** oral and written survey, solving test tasks (to control the initial and final level of knowledge), solving typical and atypical situational problems, training of relevant practical skills and professional skills on stimulation dummies takes place under the supervision of the teacher.

**Independent work:** independent work with recommended basic and additional literature, with electronic information resources, independent work with the Step-2 test task bank, independent mastering of communication algorithms with surgical patients.

## 8. Forms of control and assessment methods (including criteria for evaluating learning outcomes)

**Current control:** oral survey, testing, assessment of performance of practical skills, assessment of communication skills during role-playing, solving situational clinical tasks, assessment of activity in class.

**Final control:** testing by type Step-2, oral exam.

**Evaluation of the current educational activity in a practical session:**

- Evaluation of theoretical knowledge on the subject of the lesson:
  - methods: survey, solving a situational clinical problem
  - maximum score - 5, minimum score - 3, unsatisfactory score - 2.
- Evaluation of practical skills and manipulations on the subject of the lesson:
  - methods: assessment of the correctness of the performance of practical skills
  - maximum score - 5, minimum score - 3, unsatisfactory score - 2.
- Evaluation of work with a patient on the subject of the lesson:
  - methods: assessment of: a) communication skills of communicating with the patient, b) the correctness of prescribing and evaluating laboratory and instrumental studies, c) compliance with the differential diagnosis algorithm, d) substantiation of the clinical diagnosis, e) drawing up a treatment plan;
  - maximum score - 5, minimum score - 3, unsatisfactory score - 2.

The grade for one practical lesson is the arithmetic average of all components and can only have a whole value (5, 4, 3, 2), which is rounded according to the statistical method.

## Current evaluation criteria in practical training

<b>Rating</b>	<b>Evaluation criteria</b>
Excellent "5"	The applicant is fluent in the material, takes an active part in discussing and solving a situational clinical problem, confidently demonstrates practical skills during patient examination and interpretation of clinical, laboratory and instrumental research data, expresses his opinion on the subject of the lesson, demonstrates clinical thinking.
Fine "4"	The applicant has a good command of the material, participates in the discussion and solution of a situational clinical problem, demonstrates practical skills during the patient examination and interpretation of clinical, laboratory and instrumental research data with some errors, expresses his opinion on the subject of the lesson, demonstrates clinical thinking.
Satisfactory "3"	The acquirer does not have sufficient knowledge of the material, is unsure of participating in the discussion and solution of the situational clinical problem, demonstrates practical skills during the examination of the patient and the interpretation of clinical, laboratory and instrumental research data with significant errors.
Unsatisfactory "2"	The acquirer does not possess the material, does not participate in the discussion and solution of the situational clinical problem, does not demonstrate practical skills during the examination of the patient and the interpretation of clinical, laboratory and instrumental research data.

The applicant is admitted to the exam provided that the requirements of the educational program are fulfilled and if he received at least 3.00 points for the current educational activity and passed the test control of the "Step-2" tests with at least 90% (50 tasks).

The test control is held in the Educational and Production Complex of Innovative Technologies of Learning, Informatization and Continuous Education of ONMedU in the last class before the exam.

### **Evaluation of learning results during the final control**

<b>The content of the evaluated activity</b>	<b>Scores</b>
1. Treatment of patients	1
2. Practical skills	1
3. Solution of situational problems	1
4. Solution of test tasks STEP-2	2

### **Criteria for evaluating the learning outcomes of education seekers on the exam**

<b>Rating</b>	<b>Evaluation criteria</b>
Excellent "5"	The student correctly, accurately and completely completed all the tasks of the examination ticket, clearly and logically answered the questions posed by the examiners. Thoroughly and comprehensively knows the content of theoretical issues, fluent in professional and scientific terminology. Thinks logically and constructs an answer, freely uses acquired theoretical knowledge when analyzing practical tasks. When solving a clinical problem, he correctly interpreted the anamnesis data, the results of clinical, laboratory and instrumental studies, answered all the questions correctly and convincingly substantiated his point of view, could propose and justify an alternative version of the decision on individual issues. When solving a practical task according to the OSKI type, he correctly demonstrated the implementation of practical skills, strictly followed the algorithm of their implementation.
Fine "4"	The student completed all the tasks of the examination ticket in a sufficiently complete manner, clearly and logically answered the questions posed by the examiners. He knows the content of theoretical issues deeply and

	comprehensively, and has professional and scientific terminology. Thinks logically and constructs an answer, uses acquired theoretical knowledge when analyzing practical tasks. But when teaching some questions, there is not enough depth and argumentation, it makes insignificant mistakes, which are eliminated by the applicant himself when the examiner points them out. When solving a clinical problem, assumed insignificant errors or inaccuracies in the interpretation of anamnesis data, results of clinical, laboratory and instrumental studies, answered all the questions without significant errors, fully substantiated his point of view, however, the proposal of an alternative option caused difficulties. When solving a practical task according to the OSKI type, he made minor mistakes in the algorithm and technique of performing skills, which were corrected at the instruction of the teacher.
Satisfactory "3"	The student of education incompletely completed all the tasks of the examination ticket, the answers to additional and leading questions are vague and vague. Possesses a basic amount of theoretical knowledge, uses professional and scientific terminology inaccurately. Experiences significant difficulties in constructing an independent logical answer, in applying theoretical knowledge in the analysis of practical tasks. There are significant errors in the answers. When solving a clinical problem, he interpreted the anamnesis data, the results of clinical, laboratory and instrumental studies with errors, did not know individual details, allowed inaccuracies in the answers to questions, did not sufficiently justify his answers and interpret the wording correctly, experienced difficulties in completing tasks and offering alternative options.
Unsatisfactory "2"	The student of education did not complete the task of the examination ticket, in most cases did not answer the additional and leading questions of the examiners. He did not master the basic amount of theoretical knowledge, he showed a low level of mastery of professional and scientific terminology. Answers to questions are fragmentary, inconsistent, illogical, cannot apply theoretical knowledge when analyzing practical tasks. There are a significant number of gross errors in the answers. When solving a clinical problem, he could not interpret the received data from the anamnesis, the results of clinical, laboratory and instrumental studies, answer the questions, or made significant mistakes in the answers; could not justify his decisions or did it unconvincingly. He did not offer alternative options.

**Forms of control and assessment methods  
(including criteria for evaluating learning outcomes)  
For 6 year**

**Current control:** oral survey, testing, assessment of performance of practical skills, assessment of communication skills during role-playing, solving situational clinical tasks, assessment of activity in class.

**Final control:** testing by type Step-2, oral exam.

**Evaluation of the current educational activity in a practical session:**

1. Evaluation of theoretical knowledge on the subject of the lesson:
  - methods: survey, solving a situational clinical problem
  - the maximum score is 5, the minimum score is 3, the unsatisfactory score is 2.
2. Evaluation of practical skills and manipulations on the subject of the lesson:

- methods: assessment of the correctness of the performance of practical skills
  - the maximum score is 5, the minimum score is 3, the unsatisfactory score is 2.
3. Evaluation of work with a patient on the subject of the lesson:
- methods: assessment of: a) communication skills of communication with the patient, b) the correctness of the appointment and evaluation of laboratory and instrumental studies, c) compliance with the differential diagnosis algorithm, d) substantiation of the clinical diagnosis, e) drawing up a treatment plan;
  - the maximum score is 5, the minimum score is 3, the unsatisfactory score is 2.
- The grade for one practical session is the arithmetic average of all components and can only have a whole value (5, 4, 3, 2), which is rounded according to the statistical method.

### **Current evaluation criteria in practical training**

<b>Rating</b>	<b>Evaluation criteria</b>
Excellent "5"	The applicant is fluent in the material, takes an active part in discussing and solving a situational clinical problem, confidently demonstrates practical skills during patient examination and interpretation of clinical, laboratory and instrumental research data, expresses his opinion on the subject of the lesson, demonstrates clinical thinking.
Fine "4"	The applicant has a good command of the material, participates in the discussion and solution of a situational clinical problem, demonstrates practical skills during the patient examination and interpretation of clinical, laboratory and instrumental research data with some errors, expresses his opinion on the subject of the lesson, demonstrates clinical thinking.
Satisfactory "3"	The acquirer does not have sufficient knowledge of the material, is unsure of participating in the discussion and solution of the situational clinical problem, demonstrates practical skills during the examination of the patient and the interpretation of clinical, laboratory and instrumental research data with significant errors.
Unsatisfactory "2"	The acquirer does not possess the material, does not participate in the discussion and solution of the situational clinical problem, does not demonstrate practical skills during the examination of the patient and the interpretation of clinical, laboratory and instrumental research data.

The applicant is admitted to the exam provided that the requirements of the educational program are fulfilled and if he received at least 3.00 points for the current educational activity and passed the test control of the "Step-2" tests with at least 90% (50 tasks).

The test control is held in the Educational and Production Complex of Innovative Technologies of Learning, Informatization and Continuous Education of ONMedU in the last class before the exam.

### **Evaluation of learning results during the final control**

<b>The content of the evaluated activity</b>
1. Treatment of patients
2. Practical skills
3. Solution of situational problems
4. Solution of test tasks STEP-2

Exam evaluation is the arithmetic average of 4 components. Each of these components (types of work) is evaluated according to a 4-point system. The solution of Step-2 test tasks is evaluated depending on the percentage of correctly solved tasks as follows: correct answers: 91-100% - "5" excellent, 81-90% - "4" good, 71-80% - "3" satisfactory, 70% or less is unsatisfactory.

Scores for answers to all items are added up, then divided by 4; the obtained average grade is exam grade.

### Criteria for evaluating the learning outcomes of education seekers on the exam

Rating	Evaluation criteria
Perfectly "5"	The student correctly, accurately and completely completed all the tasks of the examination ticket, clearly and logically answered the questions posed by the examiners. Thoroughly and comprehensively knows the content of theoretical issues, fluent in professional and scientific terminology. Thinks logically and constructs an answer, freely uses acquired theoretical knowledge when analyzing practical tasks. When solving a clinical problem, he correctly interpreted the anamnesis data, the results of clinical, laboratory and instrumental studies, answered all the questions correctly and convincingly substantiated his point of view, could propose and justify an alternative version of the decision on individual issues. When solving a practical task according to the OSKI type, he correctly demonstrated the implementation of practical skills, strictly followed the algorithm of their implementation.
Fine "4"	The student completed all the tasks of the examination ticket in a sufficiently complete manner, clearly and logically answered the questions posed by the examiners. He knows the content of theoretical issues deeply and comprehensively, and has professional and scientific terminology. Thinks logically and constructs an answer, uses acquired theoretical knowledge when analyzing practical tasks. But when teaching some questions, there is not enough depth and argumentation, it makes insignificant mistakes, which are eliminated by the applicant himself when the examiner points them out. When solving a clinical problem, assumed insignificant errors or inaccuracies in the interpretation of anamnesis data, results of clinical, laboratory and instrumental studies, answered all the questions without significant errors, fully substantiated his point of view, however, the proposal of an alternative option caused difficulties. When solving a practical task according to the OSKI type, he made minor mistakes in the algorithm and technique of performing skills, which were corrected at the instruction of the teacher.
Satisfactorily "3"	The student of education incompletely completed all the tasks of the examination ticket, the answers to additional and leading questions are vague and vague. Possesses a basic amount of theoretical knowledge, uses professional and scientific terminology inaccurately. Experiences significant difficulties in constructing an independent logical answer, in applying theoretical knowledge in the analysis of practical tasks. There are significant errors in the answers. When solving a clinical problem, he interpreted the anamnesis data, the results of clinical, laboratory and instrumental studies with errors, did not know individual details, allowed inaccuracies in the answers to questions, did not sufficiently justify his answers and interpret the wording correctly, experienced difficulties in completing tasks and offering alternative options.
Unsatisfactorily "2"	The student of education did not complete the task of the examination ticket, in most cases did not answer the additional and leading questions of the examiners. He did not master the basic amount of theoretical knowledge, he showed a low level of mastery of professional and scientific terminology. Answers to questions are fragmentary, inconsistent, illogical, cannot apply theoretical knowledge when analyzing practical tasks. There are a significant number of gross errors in the answers. When solving a clinical problem, he could not interpret the received data from the anamnesis, the results of clinical, laboratory and instrumental studies, answer the questions, or made significant mistakes in the answers; could

	not justify his decisions or did it unconvincingly. He did not offer alternative options.
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## 9. Distribution of points received by students of higher education

The grade for the discipline consists of 50% of the grade for the current academic performance and 50% of the grade for the exam.

The average score for the discipline is translated into a national score and converted into points on a multi-point scale (200-point scale).

The conversion of a traditional grade into a 200-point grade is performed by the information and technical department of the University using the "Contingent" program according to the formula:

$$\text{Average success score (current success in the discipline)} \times 40$$

### Table of conversion of traditional assessment to multi-point assessment

National assessment for discipline	The sum of points for the discipline
Excellent ("5")	185 - 200
Good ("4")	151 - 184
Satisfactory ("3")	120-150
Unsatisfactory ("2")	Below 120

According to the ECTS rating scale, the achievements of students in the educational component who study in the same course of the same specialty are evaluated, according to the points they received, by ranking, namely:

### Conversion of the traditional grade from the discipline and the sum of points on the ECTS scale

Evaluation on the ECTS scale	Statistical indicator
A	Top 10% achievers
B	The next 25% of earners
C	The next 30% of earners
D	The next 25% of earners
E	The next 10% of earners

## 10. Methodological support

- Working program of the academic discipline
- Syllabus
- Methodical developments for practical classes
- Methodical recommendations for independent work of higher education applicants
- Multimedia presentations
- Situational clinical tasks
- Scenarios of role-playing games (if necessary)
- Electronic bank of test tasks by subdivisions of the discipline

### Educational and methodical literature:

1. Endoscopic surgery: a study guide / edited by V. M. Zaporozhana, V. V. Hrubnika; V. M. Zaporozhan, V. V. Grubnik, Yu. V. Grubnik and others. - K.: Medicine, 2019. - 591 p.
2. Endoscopic and robotic surgery / edited by V. M. Zaporozhana. V.V. Grubnik, Yap Boniera. Medicine 2023. 558 p.
3. Surgical diseases - a textbook for students of higher medical educational institutions / edited by V. M. Zaporozhana, V. V. Grubnika, Odesa Medical University, 2003, 421 p.



## 11. Questions for preparing for the final control

### 4th year

1. Acute appendicitis: etiology, classification, clinical picture, treatment methods.
2. Acute appendicitis in special groups: features in children, elderly, pregnant women. Differential diagnosis.
3. Appendiceal infiltrate: clinic, diagnosis, therapeutic tactics.
4. Appendiceal abscess in the right iliac fossa: clinic, diagnosis, therapeutic tactics.
5. Pylephlebitis: clinic, diagnosis, therapeutic tactics.
6. Subdiaphragmatic abscess: clinic, diagnosis, therapeutic tactics.
7. Acute cholecystitis: etiology, classification, diagnostic methods.
8. Modern surgical interventions in acute cholecystitis.
9. Differential diagnosis of acute cholecystitis.
10. Complications of acute cholecystitis: empyema, choledocholithiasis, cholangitis. Clinical picture. Features in complications with comorbidities.
11. Indications for minimally invasive surgery: endoscopic, laparoscopic, ct and ultrasound-guided procedures. Intraoperative complications and their treatment.
12. Acute pancreatitis: etiology and pathogenesis. Classification. Patient examination methods.
13. Typical clinical picture of acute pancreatitis: differential diagnosis.
14. Stages of acute destructive pancreatitis: treatment tactics for necrotizing pancreatitis. Complications.
15. Indications for surgery in acute destructive pancreatitis: types of surgeries. Indications for minimally invasive interventions. Intraoperative complications and their treatment.
16. Peptic ulcer disease of the stomach and duodenum: perforation of ulcer. Classification of perforative ulcer. Clinical picture. Diagnostic methods for ulcer perforation.
17. Atypical perforative ulcer: features in covered perforation, perforation into the omental bursa, and retroperitoneal space.
18. Choice of surgical intervention for perforative ulcer: technique of suturing perforative ulcer. Types and techniques of pyloroduodenoplasty.
19. Organ-preserving surgeries on stomach and duodenum.
20. Resection methods in surgery: indications, types, and techniques of gastric resection.
21. Gastrointestinal bleeding: etiology and pathogenesis of peptic ulcer bleeding. Clinical picture. Examination methods.
22. Classification of peptic ulcer bleeding: according to Forrest, according to O.O. Shalimov. Differential diagnosis. Features depending on the degree of activity.
23. Choice of hemostasis method: indications for conservative treatment of peptic ulcer bleeding.
24. Therapy for peptic ulcer bleeding: methods of endoscopic hemostasis and indications for their use.
25. Surgical methods for peptic ulcer bleeding: choosing a surgical method depending on the patient's condition, intensity of bleeding, blood loss, and ulcer location.
26. Intestinal obstruction: concept, etiology, and pathogenesis. Classification.
27. Dynamic intestinal obstruction: classification and clinic. Treatment.
28. Types of mechanical intestinal obstruction: clinic of obstructive intestinal obstruction. Diagnostic methods.
29. Differential diagnosis of mechanical intestinal obstruction types: obstruction, strangulation, intestinal volvulus.
30. Adhesive disease: etiology and pathogenesis. Typical clinical picture.
31. Acute peritonitis: etiology, pathogenesis, classification. Examination methods.
32. Stages of acute peritonitis: diagnostic methods. Clinical picture of widespread peritonitis.
33. Therapeutic tactics in acute widespread peritonitis.

34. Complications of acute peritonitis: features in the clinical picture with comorbidities.
35. Concept, types, and technique of peritoneal dialysis.
36. Concept of hernia: causes, classification.
37. Clinical picture of hernias: importance of shape and size for disease progression.
38. Hernias of the white line of the abdomen: clinic, diagnosis, differential diagnosis, treatment.
39. Umbilical hernias: clinic, classification, diagnosis, differential diagnosis, treatment.
40. Inguinal hernias: clinic, classification, diagnosis, differential diagnosis, treatment.
41. Postoperative (ventral) hernias: clinic, classification, diagnosis, differential diagnosis, treatment.
42. Femoral hernias: clinic, diagnosis, differential diagnosis, treatment.
43. Strangulated hernias: typical clinic. Types of strangulated hernias. Diagnosis, differential diagnosis.
44. Surgical tactics in strangulated hernia: features of surgical intervention. Signs of intestinal viability and non-viability.
45. Irreducible hernia: clinic, differential diagnosis. Treatment.
46. Modern principles and methods of surgical treatment of hernias: prevention of hernias.
47. Internal hernias: clinic, classification, diagnosis.
48. Hiatal hernias: classification, clinic, diagnosis, differential diagnosis.
49. Concept, classification, etiopathogenesis of peptic ulcer disease.
50. Penetration as a complication of peptic ulcer disease: clinic, diagnosis, treatment.
51. Definition of pyloroduodenal stenosis: causes of pyloroduodenal stenosis. Classification. Diagnostic methods.
52. Clinical picture of subcompensated and decompensated stenosis: diagnostic methods. Principles of preoperative preparation.
53. Treatment of pyloroduodenal stenosis: types of surgical interventions.
54. Surgical treatment of peptic ulcer disease of stomach and duodenum: resection and organ-preserving methods.
55. Definition of dumping syndrome: causes, treatment.
56. Syndrome of the afferent loop: causes, diagnosis, treatment.
57. Definition of Mallory-Weiss syndrome: clinic, diagnosis, treatment.
58. Indications for surgical treatment of hiatal hernia: surgical techniques.
59. Closed blunt abdominal trauma: injuries to the spleen, types, diagnostic methods, treatment.
60. Classification of surgical diseases of the small intestine: nonspecific ulcerative colitis. Crohn's disease: classification, diagnosis, complications, treatment.
61. Diverticular disease and polyposis of the colon: diagnostic and treatment methods.
62. Liver cirrhosis: classification, diagnosis, treatment. Liver failure.
63. Echinococcosis of the liver: examination methods. Complications. Treatment principles.
64. Mechanical jaundice as a surgical problem: methods of draining the extrahepatic bile ducts.
65. Classification, clinic, diagnosis, and treatment of hemorrhoids.
66. Etiology, clinic, diagnosis, and treatment of acute proctitis.
67. Chronic proctitis: classification. Rectal fistula: classification, diagnosis, treatment.
68. Clinical picture of intra-abdominal bleeding: classification of blood loss, diagnostic and surgical methods.
69. Pilonidal cyst: causes, classification, examination methods, treatment.
70. Liver transplantation: indications, surgical techniques.

#### **5th year**

1. Clinic of anterior mediastinal tumors. Surgical treatment of posterior mediastinal tumors.
2. Treatment of acute mediastinitis.
3. Classification of hiatal hernia.
4. Clinical course of sliding hiatal hernia.
5. Treatment of sliding hiatal hernia.
6. Treatment of paraesophageal hiatal hernia.
7. Clinical forms of lung gangrene.

8. Clinical symptoms of acute lung abscess in the "pre-opening" stage. Clinical symptoms of acute lung abscess in the "post-opening" stage.
9. Clinic of chronic lung abscess.
10. Methods of sanitization of the tracheobronchial tree.
11. Treatment of acute lung abscess. Indications for surgical treatment.
12. Acute empyema of the pleura. Etiology, pathogenesis, clinic.
13. Total pyopneumothorax. Etiology, clinical course. Additional examination methods for pyopneumothorax. Treatment tactics for patients with pyopneumothorax. Features of conservative treatment of pyopneumothorax.
14. Indications for pleural puncture. Technique of pleural puncture.
15. Indications for draining the pleural cavity. Technique of pleural drainage.
16. Classification of post-traumatic hemothorax. Clinical-radiological signs of small hemothorax.
17. Treatment tactics for closed chest trauma complicated by large hemothorax.
18. Treatment tactics for organized hemothorax.
19. Diagnosis and treatment of penetrating heart wound.
20. Causes of mediastinal emphysema onset and clinical course. Treatment of mediastinal emphysema.
21. Treatment tactics for tension (valve) pneumothorax.
22. Clinic of double rib fracture. Methods of fixation of the chest wall in floating rib fracture. Treatment tactics for floating rib fracture.
23. Stages of mitral stenosis. Clinical manifestations. Surgical treatment of mitral stenosis.
24. Pathogenesis and complications of complete atrioventricular block. Clinic. Diagnosis.
25. Ischemic heart disease. Clinic, diagnosis, surgical treatment.
26. Heart defects. Clinic, diagnosis, surgical treatment.
27. Achalasia of the esophagus. Clinic, diagnosis. Clinical stages of esophageal achalasia. Objective examination data in esophageal achalasia.
28. Classification of esophageal diverticulum.
29. Complications of bifurcation diverticulum of the esophagus. Clinical course. Clinic of epiphrenic diverticulum. Additional examination methods.
30. Surgical treatment of zenker's diverticulum. Intraoperative and postoperative complications.
31. Emergency assistance for esophageal burn. Conservative treatment of esophageal burn.
32. Toxic goiter. Diagnosis. Differential diagnosis. Preoperative preparation.
33. Euthyroid and toxic goiter. Treatment.
34. Diseases of the parathyroid glands. Classification. Special examination methods. Surgical treatment.
35. Diseases of the adrenal glands. Classification. Special examination methods. Diagnosis. Surgical treatment.
36. Mastitis. Classification. Special examination methods. Diagnosis. Surgical treatment.
37. Dysglandular diseases of the breast. Classification. Special examination methods. Diagnosis. Differential diagnosis. Preoperative preparation. Surgical treatment.
38. Clinical characterization of thromboembolism and acute thrombosis of major arteries.
39. Surgical tactics and methods of operative treatment of thromboembolism and acute thrombosis of major arteries.
40. Etiology, pathogenesis of obliterating atherosclerosis, and endarteritis of the lower limbs.
41. Classification of chronic ischemia and occlusion level of major arteries in obliterating atherosclerosis.
42. Clinical characterization and methods of surgical treatment of leriche syndrome.
43. Indications and contraindications for surgical treatment of obliterating atherosclerosis of major arteries of the lower limbs.
44. Indications and contraindications for surgical treatment of obliterating endarteritis of the lower limbs.
45. Clinical characterization of varicose disease of the lower limbs.
46. Functional tests to determine the status of valves of superficial, communicating, and deep veins

- of the lower limbs. Methods and indications for phlebography.
47. Conservative treatment of varicose disease of the lower limbs.
  48. Treatment of trophic ulcers caused by chronic venous insufficiency.
  49. Indications and contraindications for surgical treatment of varicose disease of the lower limbs.
  50. Etiology of thrombophlebitis of subcutaneous veins of the lower limbs. Pathogenesis and clinic of migrating thrombophlebitis of subcutaneous veins.
  51. Indications and contraindications for surgical treatment of acute thrombophlebitis of subcutaneous veins of the lower limbs. Surgical techniques in acute thrombophlebitis of subcutaneous veins of the lower limbs.
  52. Clinical manifestations of venous thrombosis of the calves. Clinical manifestations of iliofemoral thrombosis.
  53. Clinical characterization of white phlegmasia.
  54. Clinical characterization of blue phlegmasia.
  55. Differential diagnosis of deep vein thrombosis of the lower limbs.
  56. Conservative treatment of deep vein thrombosis of the lower limbs.
  57. Etiology, pathogenesis of post-thrombophlebitic syndrome. Features of venous hemodynamics in patients with pts.
  58. Clinical characterization of the sclerotic form of post-thrombophlebitic syndrome.
  59. Clinical characterization of the varicose form of post-thrombophlebitic syndrome.
  60. Clinical characterization of the edema-pain form of post-thrombophlebitic syndrome.
  61. Clinical characterization of the ulcerative form of post-thrombophlebitic syndrome.
  62. Conservative treatment of pts.
  63. Surgical treatment of patients with pts.
  64. Etiology of lymphostasis. Pathogenesis of lymphostasis.
  65. Clinical characterization of the stage of lymphedema.
  66. Clinical characterization of the stage of fibredema.
  67. Differential diagnosis of lymphedema.
  68. Methods of examination of the lymphatic system. Indications and methods of performing lymphography.
  69. Indications and methods of conservative treatment of lymphostasis.
  70. Types of surgical interventions aimed at restoring lymphatic drainage.
  71. Clinic, diagnosis, and treatment of pericardial diseases.
  72. Clinic, diagnosis, and treatment of aortic aneurysm.
  73. Clinic, diagnosis, and treatment of arterial aneurysms.
  74. Gunshot wounds. Features of structural and functional tissue changes depending on the type of weapon.
  75. Injuries from mine-explosive devices, volume explosion bombs. Medical aid to the wounded, prevention of wound infection. Primary surgical treatment of wounds, its features, and differences from gunshot wounds.
  76. Thermal injuries. Local and general pathological manifestations of thermal burns. Classification of burns by depth of damage. Supine burns. Determination of the total area of burns and the area of deep damage.
  77. Bleeding and blood loss. Classification of bleeding depending on the source of bleeding, the time of its occurrence, and the degree of blood loss. Clinical picture of bleeding and acute blood loss. Methods for determining the amount of blood loss in the field and in emergency situations.
  78. Means of temporary, final stoppage of bleeding. Indications for blood transfusion and blood substitutes. Methodology for calculating the need for blood and blood substitutes in the field and in emergency situations.
  79. Local purulent infection. Characteristics of toxic-resorptive fever and sepsis. Clinic of sepsis. Prevention and treatment of purulent complications of gunshot wounds. Anaerobic wound infection. Timing of occurrence, local and general manifestations. Characterization of different clinical forms. Prevention of anaerobic infection. Specific and nonspecific treatment. Prophylactic and therapeutic value of antibiotics. Treatment results.

80. Chest injuries (trauma): frequency and classification of chest wounds and closed injuries. Clinical manifestations and diagnosis of various types of injuries and damages.

### 6th year

#### *General issues of surgery.*

1. History of surgery of Ukraine. Organization of surgical care in Ukraine. Ethics and deontology in surgery.
  1. Development of surgery on the territory of Ukraine in ancient times.
  2. Development of surgery in Ukraine in the 20th century.
  3. Contribution to the development of surgical science in Ukraine by academicians M.M. Amosov and O.O. Shalimova.New technologies in surgery. Modern methods of diagnosis and treatment.
  1. Video endoscopic operations in surgery.
  2. Laparoscopic methods of operations on the liver, esophagus, and peptic ulcers.
  3. Videothoracoscopic surgical interventions.
  4. Endoscopic retrograde cholangiopancreatography.
2. Systemic inflammatory response syndrome in surgical patients. 1. Pathogenesis.
  2. Significance in various diseases and injuries.
  3. Treatment tactics.Shock in surgical patients.
  1. Reasons.
  2. Stages of shock development.
  3. Types of shock - anaphylactic, hemorrhagic, traumatic, septic, cardiogenic shock.
  4. Diagnostic algorithm.
  5. Treatment of various clinical types of shock.
  6. Provision of emergency care for traumatic shock in the conditions of military operations.
  7. Transport immobilization in military conditions as a means of shock prevention. 8. Temporary stopping of bleeding as a means of preventing hemorrhagic shock during war.
3. Critical conditions in surgical patients.
  1. Acute respiratory distress syndrome.
  2. Abdominal cavity syndrome, collapse.
  3. Clinical picture, diagnosis, treatment of acute respiratory distress syndrome.
  4. Compartment syndrome - causes, diagnosis, prevention.
  5. Collapse - causes, clinical picture, differential diagnosis, emergency care.
4. Purulent diseases of the skin and soft tissues.
  1. Classification of purulent infection of soft tissues
  2. Diagnosis, differential diagnosis.
  3. Methods of conservative and surgical treatment.
  4. Features of the clinic and treatment of inflammatory processes in patients suffering from diabetes.
  5. Primary surgical treatment as a means of preventing purulent complications during warPurulent diseases of the hand and fingers.
  1. Methods of conservative surgical treatment.
  2. Anatomy of the hand.
  3. Methods of examination of a patient with purulent diseases of the hand.
    1. Classification of purulent diseases of the hand.
    2. Clinic and diagnosis of superficial and deep phlegmon of the hand.
    3. Indications for conservative and surgical treatment of patients with panaritium.
    4. Basic principles of functional treatment in the postoperative period.
5. Rules for antibiotic therapy in the prevention and treatment of surgical infection.
  1. Classification of surgical infection.

2. Pathogens of surgical infection.
3. Local and general clinical manifestations of surgical infection depending on age, concomitant diseases and virulence of microflora.
4. Acute purulent inflammatory processes of the skin and subcutaneous tissue.
5. Principles of conservative and operative treatment of acute purulent diseases.
6. Etiology, clinic and treatment of anaerobic infection.

***Clinical manifestations of surgical diseases.***

6. Abdominal pain, evaluation of pain syndrome features in the differential diagnosis of diseases of the abdominal cavity.
  1. Pseudo-abdominal pains.
  2. Peculiarities of pain syndrome in peritonitis.
  3. Peculiarities of pain during perforation of a hollow organ.
  4. Peculiarities of the pain syndrome in surgical pathology: in the upper part of the abdomen (acute cholecystitis, acute pancreatitis, perforation of a gastric and duodenal ulcer).
  5. Features of local pain in acute appendicitis.
7. Syndrome of dysphagia, vomiting and violation of the act of defecation.
  1. Significance in diagnosis and differential diagnosis.
  2. Medical tactics.
  3. Differential diagnosis of dysphagia.
  4. Features of vomiting in acute pancreatitis, acute cholecystitis, perforation of a hollow organ, bleeding into the lumen of the alimentary canal.
  5. Violation of the act of defecation in surgical diseases - constipation, diarrhea. Change in the color of feces during bleeding.
  6. Finger examination of the rectum
8. Syndrome of acute intestinal obstruction.
  1. Classification of intestinal obstruction.
  2. Dynamic intestinal obstruction - etiology, clinical picture, diagnosis, differential diagnosis, treatment, prevention.
  3. Mechanical intestinal obstruction - etiology, pathogenesis, clinic, differential diagnosis of obturational and strangulation intestinal obstruction.
  5. Preoperative preparation of patients.
  7. Selection of the operation method depending on the type of obstruction.
9. Acute abdominal syndrome.
  1. Peritonitis.
  2. Diagnosis and differential diagnosis of peritonitis.
  3. Classification of peritonitis. Stages of peritonitis.
  4. Basic principles of peritonitis treatment.
10. Local and widespread purulent-inflammatory processes of the organs of the abdominal cavity and abdomen.
  1. Etiology, pathogenesis, clinic, diagnosis and treatment.
  2. Acute appendicitis, clinic, diagnosis, treatment.
  3. Perforating ulcer, acute pancreatitis, acute cholecystitis - differential diagnosis, clinic, treatment.
11. Mechanical jaundice.
  1. Differential diagnostic tactics.
  2. Liver failure in surgical diseases, methods prevention and treatment.
  3. Mechanical jaundice as a complication of gallstone disease.
  4. Tumors of the head of the pancreas, Vater's nipple, intraductal tumors as a cause of mechanical jaundice.
12. Bleeding from the digestive tract.
  1. Causes, diagnosis and differential diagnosis, therapeutic tactics.

2. Bleeding of ulcer origin - clinic, diagnosis, treatment.
3. Mallory-Weiss syndrome.
4. Tumors of the digestive tract with decay and bleeding - clinic, diagnosis, differential diagnosis, treatment tactics.
13. Abdominal injuries.
  1. Symptoms of damage to the organs of the abdominal cavity and abdominal space.
  2. Instrumental methods of diagnosis.
  3. Closed abdominal trauma - diagnostic algorithm.
  4. Treatment tactics.
14. Peculiarities of the course of surgical disease in pregnant women.
  1. Peculiarities of examination of pregnant women.
  2. Surgical tactics.
  3. Peculiarities of pain syndrome.
  4. The risk of surgical intervention depending on the period of pregnancy.
  5. Anesthetic support for surgical patients during pregnancy.
15. The course of acute diseases in the elderly.
  1. Age-related changes in the body.
  2. Peculiarities of the course in patients with diabetes, cardiovascular pathology, renal failure.
  3. Diagnosis and differential diagnosis of acute surgical diseases in the elderly.
  4. Peculiarities of the clinical picture, examination of patients. Surgical tactics.
16. Surgical diseases in patients with infectious pathology.
  1. Differential diagnosis between acute surgical and infectious diseases.
  2. Pathogenesis of typhoid fever.
  3. Peculiarities of the clinical picture of perforating ulcers of the small intestine.
  4. Bleeding into the lumen of the alimentary canal during infectious diseases.
17. Modern methods of diagnosis and treatment of diseases of the cardiovascular and respiratory systems.
  1. Special methods of research: echocardiography, ultrasound scanning, heart probing, cinecardiography, coronary angiography.
  2. Diagnostic methods of examination of chest organs - laryngoscopy, bronchoscopy, bronchography, biopsy, thoracentesis.
  3. Treatment of congenital heart defects.
  4. Aorto-coronary bypass.
  5. Significance of artificial blood circulation apparatus for heart operations.
18. Syndrome of chest pain, respiratory and heart failure in the diagnosis and differential diagnosis of diseases of the chest cavity.
  1. Etiology: spontaneous pneumothorax, pulmonary embolism, bronchus foreign body, mediastinitis, lung abscess, bronchiectasis, pleural empyema, lung gangrene, pyopneumothorax, esophageal injury, chest injury.
  2. Differential diagnosis.
  3. Principles of conservative therapy and surgical treatment.
19. Surgical pathology of lungs and pleura.
  1. Purulent diseases of the lungs and pleura. Classification:
    - a) Acute, purulent lung abscess;
    - b) Acute, gangrenous lung abscess.
    - c) Gangrene is widespread.
    - d) Chronic lung abscess.
  2. Etiology, pathogenesis, diagnosis.
  3. Treatment is conservative and surgical. Prevention.
  4. Pleural puncture technique.
20. Oncological pathology of lungs and pleura.
  1. Benign tumors - classification.
  2. Lung cancer: Classification according to the TNM system.

3. Clinical picture. Diagnosis, differential diagnosis.
4. Treatment - surgical, radiation.
21. Damage to the organs of the chest cavity.
  1. Triad of symptoms of heart injury.
  2. A single clinical-diagnostic and medical-surgical program at heart injuries.
  3. Classification of heart damage. Pathogenesis.
  4. Tactics of a doctor when providing emergency care.
22. Damage to the organs of the chest cavity.
  1. Clinic and diagnosis of pneumothorax, hemothorax and chylothorax. 2. Treatment approaches.
  2. Determination of open and closed chest injuries.
  3. Pneumothorax - types, clinical picture, diagnosis, treatment tactics. 4. Clinic, diagnosis, differential diagnosis.
  5. Treatment.
23. Aortic arch syndrome.
  1. Clinic, differential diagnosis, treatment approaches.
  2. Aneurysms of the thoracic aorta.
  3. Etiology, pathogenesis, pathological anatomy. Clinic and diagnostics.
  4. Complications. Clinical picture. Diagnostics.
  5. Differential diagnosis. Treatment.
  6. Occlusive lesions of the branches of the aortic arch.
  7. Etiology and pathogenesis. Clinical picture. Diagnostics.
  8. Treatment tactics.
24. Limb ischemia syndrome.
  1. Obliterating atherosclerosis of the arteries of the lower extremities.
  2. Diagnosis and differential diagnosis.
  3. Conservative and operative treatment.
  4. Obliterating thromboangiitis.
  5. Conservative and operative treatment.

Assessment of pain syndrome in the extremities during diagnosis and differential diagnosis of vascular diseases, lesions of the nervous system and pathology of the musculoskeletal system.

  1. Peculiarities of pain syndrome in diabetic foot.
  2. Night pain in obliterating diseases of the vessels of the lower extremities. "Window pain".
  3. Determination of pulsation on the distal arteries of the lower extremities
25. Problems of thrombosis and embolism.
  1. Causes of occurrence, ways of prevention, diagnosis and differential diagnosis, treatment tactics.
  2. Indications for surgical treatment and its main methods.
  3. Acute arterial thrombosis, arterial embolism, etiology, pathogenesis.
  4. Diagnosis. Differential diagnosis.
  5. Surgical treatment of acute arterial obstruction.

Venous disease.

  1. Superior vena cava syndrome.
  2. Inferior vena cava syndrome.
  3. Etiology, pathogenesis of the inferior and superior vena cava syndrome.
  4. Differential diagnosis. Treatment tactics.

### **List of practical skills «Symptoms and syndromes in surgery»**

1. Determination of blood groups
2. Temporary stoppage of bleeding



3. Transport immobilization
4. Catheterization of the urinary bladder.
5. Analysis and assessment of radiographs and CT studies.
6. Primary surgical treatment of wounds.
7. Ensuring patency of the upper respiratory tract.
8. Artificial lung ventilation.
9. External heart massage.
10. Pleural puncture
11. Laparocentesis
12. Study of the mammary gland
13. Finger examination of the rectum.
14. Rectomanoscopy.

## 12. Recommended Literature

### 4th year

#### Primary:

1. Emergency States in Surgery: a textbook (HEIs I-III levels of accreditation) / K.M. Babak, A.I. Babak, V.V. Kretiv et al.; ed. by L.M. Kovalchuk. Kyiv: "Medicine", 2017. 560 p.
2. Surgery: textbook / Ya.S. Breznitsky, O.V. Bilov, B.S. Zaporozhchenko et al.; ed. by Ya.S. Breznitsky. Vinnytsia: Nova Knyha, 2020. 528 p.
3. Surgery: textbook / M.P. Zakharyash, O.I. Poyda, M.D. Kucher. Kyiv: "Nova Knyha", 2014. 687 p.
4. Surgical Diseases: textbook / ed. by prof. P.G. Kondratenko. Kharkiv: Fakt, 2018. 816 p.

#### Additional:

1. Breznitsky Ya.S., Zakharyash M.P., Mishalov V.G. Surgery: textbook. Volume III, 2011. 628 p.
2. Lectures on Hospital Surgery (in 3 volumes) / ed. by professor V.G. Mishalov. Kyiv: "Askaniya", 2008.
3. Emergency Surgery / ed. by Kovalchuk L.Ya. Ternopil: Ukrmedknyha, 2012. 288 p.
4. Radzikhovsky A.P., Babenko V.I. Emergency Surgery of Abdominal Organs. Kyiv: "Phoenix", 2002. 319 p.
5. Faculty Surgery: lectures. Odessa: ODMU, 2005. 300 p.

### 5th year

#### Primary:

1. Pivtorak V. I., Kobzar O.B. et al. Clinical Anatomy and Operative Surgery. Volume 1. Textbook for HEIs III-IV levels of accreditation. 2021.
2. General Surgery: [textbook for HEIs candidates] / [V. P. Andrushchenko et al.]; ed. prof.: Ya. S. Breznitsky [et al.]. 2nd ed. Vinnytsia: Nova Knyha, 2020. 342 p.
3. General Surgery: textbook / P. O. Gerasymchuk [et al.]; ed. P. O. Gerasymchuk; Ternopil National Medical University named after I. Ya. Gorbachevsky of the Ministry of Health of Ukraine. Ternopil: TNMU "Ukrmedknyha", 2020. 696 p.
4. Military Field Surgery: textbook. V.Ye.Koryk. TSUL. 2020.
5. Breznitsky Ya. S. (ed.) Surgery. Textbook for HEIs IV level of accreditation: Recommended by the academic council of DZ "Dnipropetrovsk Medical Academy of the Ministry of Health of Ukraine: 2020/ 528 p.
6. Oncology: textbook / A. I. Shevchenko, O. P. Kolesnik, N. F. Shevchenko [et al.] ; ed. A. I. Shevchenko. Vinnytsia: Nova Knyha, 2020. 488 p.
7. "Surgery" (tutorial), Grubnik V.V., Kovalchuk L.Ya., 544 p. 2020.

8. Pyogenic-septic Surgery. Textbook/ S.Shapovval. Medicine. 2019. 192p.
9. Combat Trauma of the Heart, Thoracic Aorta, and Major Limb Vessels: Handbook / V. V. Lazoryshynets [et al.]; ed. V. I. Tsymbalyuk; Ternopil National Medical University named after I. Ya. Gorbachevsky of the Ministry of Health of Ukraine. Ternopil: TDNU "Ukrmedknyha", 2019. 428 p.
10. Endoscopic Surgery: a textbook for senior course students of medical higher education institutions, interns, residents, listeners of postgraduate education institutions, which prepare specialists in the field of "Healthcare" with the specialty "Surgical Diseases" / V. M. Zaporozhan [et al.]; eds.: V. M. Zaporozhan, V. V. Grubnik. Kyiv: VSV "Medicine", 2019. 592 p.
11. Kondratenko P.G., Rusin V.I. (eds.) Surgery. Vol.1. Textbook for HEIs III - IV levels of accreditation: Recommended by the academic council of Donetsk National Medical University: 2019. 704 p.
12. TNM Classification of Malignant Tumours: methodological manual: trans. from English / ed. A. I. Shevchenko; trans. from English by O. P. Kolesnikova [et al.]. Vinnytsia: PP "Nova Knyha", 2019. 88 p.
13. Surgery: in 2 vols. Vol. 1.: textbook for candidates of higher medical educational institutions / S. O. Boyko [et al.]; eds.: P. G. Kondratenko, V. I. Rusin. - Vinnytsia: Nova Knyha, 2019. 704 p.
14. Surgery: textbook / O. M. Kit, A. O. Bob, V. S. Zhukovsky; SE "Ternopil State Medical University named after I. Ya. Gorbachevsky of the Ministry of Health of Ukraine". 2nd ed., revised and supplemented. Ternopil: TSMU "Ukrmedknyha", 2019. 620 p.
15. Acute Pyogenic Diseases: anatomical-clinical rationale and basics of surgical assistance: a textbook for candidates of medical faculties of higher educational institutions III -IV level of accreditation and intern doctors in the specialty 222 "Medicine" / O. A. Hryhoryeva, A. S. Pysarenko, E.R. Skakovsky. Zaporizhzhia : ZSMU, 2018. 75 p.
16. Urgent Abdominal Surgery. Textbook / V.I. Lyakhovsky, I.I. Nemchenko, O.M. Liulka, O.P. Kovalov, O.H. Krasnov, T.V. HorodovaAndriieva. Poltava, LLC "Firma "Tekhservis", 2018. 224p.
17. Surgery of Pyonecrotic Complications of Diabetic Foot Syndrome / I. Ya. Dziubanovsky [et al.]; SE "Ternopil State Medical University named after I. Ya. Gorbachevsky of the Ministry of Health of Ukraine". Ternopil: TSMU "Ukrmedknyha", 2018. 316 p.
18. Military Field Surgery (ed. by Ya.L. Zarutsky, V.Ya. Bily), Kyiv "Phoenix", 2018. 544p.
19. Surgery of Emergency Situations: tutorial / Sheyko V. D., Panasenko S. I., Chelishvili A. L.; Ukrainian Medical Stomatological Academy. Poltava: Astraya, 2019. 217 p.
20. Provision of Emergency Medical Care in the Trauma Center of a Multiprofile Hospital: Handbook / I. O. Vorobey [et al.]; ed. O. V. Mazurenko, H. H. Roshchina; Nat. Med. Acad. of postgraduate education named after P. L. Shupik. Kyiv: Gordon, 2018. 154 p.
21. Surgery: textbook: in 2 vols. Vol. 1: General Surgery with the main types of surgical pathology. Treatment of the patient in a surgical hospital: textbook / R. O. Sabadyshyn [et al.]. - Vinnytsia: PP "Nova Knyha", 2018. 784 p.
22. Surgery: textbook: in 2 vols. Vol. 2: Special Surgery / Sabadyshyn R. O. [et al.]. Vinnytsia: Nova Knyha, 2018. 588 p.
23. Emergency States in Surgery: textbook / K. M. Bobak, A. I. Bobak, V. V. Kyretiv, O. M. Paryichuk, I. V. Sarakhman, I. I. Romanyshyn, L. B. Bandrivsky, O. S. Brunarska; ed. L. M. Kovalchuk.— Kyiv: VSV «Medicine», 2017. 560 p.
24. Operative Surgery and Topographic Anatomy of the Head and Neck: basic textbook for candidates of dentistry faculties of HEIs of the Ministry of Health of Ukraine IV level of accreditation /

Pivtorak V. I. [et al.]; ed. prof. Pivtorak V. I., prof. Pronina O. M. - Vinnytsia: Nova Knyha, 2016. 310 p.

**Additional:**

1. Innovative Minimally Invasive Technologies in Surgical Treatment of Chronic Venous Diseases of Lower Limbs: Monograph / S.I. Savolyuk, V.A. Khodos, V.S. Gorbovets, M.I. Muz, R.A. Herashchenko. – Kyiv – Vinnytsia: PP Balyuk I.B. 2020. 146 p.
2. Oncology: Textbook / Y.V. Dumansky, A.I. Shevchenko, I.Y. Halaichuk [et al.]; eds. G.V. Bondar, A.I. Shevchenko, I.Y. Halaichuk. 2nd ed., rev. and suppl. K.: VSV "Medicine", 2019. 520 p.
3. General Surgery: Basic Textbook for Students of Higher Educational Institutions - Medical Universities, Institutes, and Academies / S.D. Khimich [et al.]; eds.: S.D. Khimich, M.D. Zheliba. 3rd ed., corr. and suppl. Kyiv: VSV "Medicine", 2018. 608 p.
4. Human Anatomy Atlas: Translation from the 8th English Edition: Quadrilingual Edition (Ukrainian, English, Russian, Latin). 3rd ed. / Frederic Martini. K., 2018. 128 p.
5. Surgical Diseases: Textbook for Medical Universities, Institutes, Academies. 2nd ed., corr. Approved by the Ministry of Education / Eds. P.D. Fomin, Y.S. Bereznytsky. K., 2017. 408 p.
6. Methodical Guidelines for Practical Classes in Surgery (module 8): Educational Manual / B.G. Bezrodny, I.V. Kolosovych, V.M. Korotky [et al.]; ed. B.G. Bezrodny. K.: VPC "Express", 2017. 614 p.
7. Cold Injury / G.P. Kozinets, V.M. Denysenko, A.V. Sotnikov // Guidelines in Military Field Surgery. K.: SPD Chalchynska N.V., 2014. 396 p.

**6th year**

**The main one**

1. General surgery: a basic textbook [for higher medical students. education institutions of the IV level of accreditation] / edited by M. D. Zheliba, S. D. Khimich; M. D. Zheliba, S. D. Khimich, I. D. Gerych, and others. - 2nd ed., ed. - K.: Medicine, 2016. - 448 p.
2. Operative surgery and topographical anatomy: [textbook for higher medical students. education institutions of the IV level of accreditation] / edited by M.P. Kovalskyi; Yu. T. Akhtemiichuk, Yu. M. Vovk, S. V. Doroshenko, and others. - 3rd ed., ed. - K.: Medicine, 2016. - 503 p.
3. Surgery. In 2 vols.: a textbook [for students of higher medical schools. education institutions]. Vol. 1 / edited by: P. G. Kondratenko, V. I. Rusyna, S. O. Boyko, O. O. Boldizhar, P. O. Boldizhar and others. - Vinnytsia: New book, 2019. - 702 p.
4. Surgery. In 2 vols.: a textbook [for students of higher medical schools. education institutions]. Vol. 2 / edited by: P. G. Kondratenko, V. I. Rusyna, S. O. Boyko, O. O. Boldizhar, P. O. Boldizhar and others. - Vinnytsia: New book, 2019. - 702 p.
5. Clinical anatomy and operative surgery: educational and methodological manual for practical classes of interns of obstetrician-gynecologists [and trainee doctors of institutions (fac.) post-diploma. Ministry of Education of Ukraine] / S. M. Bilash, O. M. Pronina, M. M. Koptev, A. V. Pyrog-Zakaznikova; Ministry of Health of Ukraine, UMSA. - Poltava: Myron I. A., 2019. - 113 p.
6. Bereznytskyi Y.S., Zakharash M.P., Mishalov V.G., Shidlovskiy V.O. Surgery, Tom I. – 2006, Textbook. 2. Bereznytskyi J.S., Zakharash M.P., Mishalov V.G. Surgery, Volume II. – 2007, Textbook.
7. Kovalchuk L.Ya., Saenko V.F., Knyshev G.V. Clinical surgery. In 2 volumes. Ternopil: Ukrmedknyga, 2000. 2000, 286 p.–Ternopil: Ukrmedknyga.–

8. Radzihovsky A.P., Babenko V.I. Emergency surgery of abdominal organs. Kyiv. "Phoenix", 2002. - 319 p.
9. Zakharash M.P., Poida O.I., Kucher M.D. Surgery: textbook. - K.: Medicine, 2006. - 656 p.
10. Surgery: a textbook / edited by LA. Kovalchuk Ternopil: TDMU, 2010. - 1056 p.
11. Surgery: Textbook, volume III (basic textbook for primary specialization in surgery- ), book 2 (clinical surgery) / Ed. Berezhnytskyi Y.S., Zakharasha M.P., Mishalova V.G. - Dnipropetrovsk: RVA "Dnipro-UAB", 2011. - 782 p.
12. Lectures on hospital surgery: Education. manual / edited by V.G. Mishalova. - 2nd ed., add. and processing - K.: "Ascania" Publishing House, 2008. - Vol. 1. - 287 p.
13. Lectures on hospital surgery: Education. manual / edited by V.G. Mishalova. - 2nd ed., add. and processing - K.: Publishing House "Askania", 2008. - Vol. 2. - 382 p.

### **Additional**

1. General surgery: a basic textbook [for higher medical students. education institutions of the IV level of accreditation] / edited by M. D. Zheliba, S. D. Khimicha; M. D. Zheliba, S. D. Khimich, I. D. Gerych, and others. - 2nd ed., ed. - K.: Medicine, 2016. - 448 p.
2. Operative surgery and topographical anatomy: [textbook for higher medical students. education institutions of the IV level of accreditation] / edited by M.P. Kovalskyi; Yu. T. Akhtemiichuk, Yu. M. Vovk, S. V. Doroshenko, and others. - 3rd ed., ed. - K.: Medicine, 2016. - 503 p.
3. Surgery. In 2 vols.: a textbook [for students of higher medical schools. education institutions]. Vol. 1 / edited by: P. G. Kondratenko, V. I. Rusyna, S. O. Boyko, O. O. Boldizhar, P. O. Boldizhar and others. - Vinnytsia: New book, 2019. - 702 p.
4. Surgery. In 2 vols.: a textbook [for students of higher medical schools. education institutions]. Vol. 2 / edited by: P. G. Kondratenko, V. I. Rusyna, S. O. Boyko, O. O. Boldizhar, P. O. Boldizhar and others. - Vinnytsia: New book, 2019. - 702 p.
5. Clinical anatomy and operative surgery: educational and methodological manual for practical classes of interns of obstetrician-gynecologists [and trainee doctors of institutions (fac.) post-diploma. Ministry of Education of Ukraine] / S. M. Bilash, O. M. Pronina, M. M. Koptev, A. V. Pyrog-Zakaznikova; Ministry of Health of Ukraine, UMSA. - Poltava: Myron I. A., 2019. - 113 p.
6. Emergency Surgery Course (ESC®) Manual: The Official ESTES/AAST Guide/ ISBN-10: 3319213377.-2016 .- 252 pages.
7. Harold Ellis and Sir Roy Calne, "General Surgery, 13th Edition" / ISBN: 1118742052.- 2016 .- 424 pages.
8. Mamta Swaroop (Editor), Sanjay Krishnaswami .Academic Global Surgery/ ISBN-10: 3319142976 .- 2016 .- 144 pages.
9. Lim, COL Robert B. Surgery During Natural Disasters, Combat, Terrorist Attacks, and Crisis Situations / ISBN-10: 3319237179.- 2016.- 228 pages.
10. TK Chattopadhyay. GI Surgery Annual: Volume 22 / ISBN: 9811020094.- 2017.- 237 Pages.
11. Order of the Ministry of Health of Ukraine No. 329 dated June 15, 2007 "On the approval of clinical protocols for the provision of medical care for the prevention of thrombotic complications in surgery, orthopedics and traumatology, obstetrics and gynecology."
12. Order of the Ministry of Health of Ukraine No. 502 dated August 29, 2008"On the approval of the clinical protocol for antibacterial therapy in surgery, traumatology, obstetrics and gynecology."

### **13. Electronic information resources**

1. <http://moz.gov.ua>- Ministry of Health of Ukraine
2. [www.ama-assn.org](http://www.ama-assn.org)–American Medical Association /American Medical Association

3. [www.who.int](http://www.who.int)- World Health Organization
4. [www.dec.gov.ua/mtd/home/](http://www.dec.gov.ua/mtd/home/)- State Expert Center of the Ministry of Health of Ukraine
5. <http://bma.org.uk>– British Medical Association
6. [www.gmc-uk.org](http://www.gmc-uk.org)- General Medical Council (GMC)
7. [www.bundesarztekkammer.de](http://www.bundesarztekkammer.de)– German Medical Association
8. <http://medforum.in.ua/partners/>-Association of Surgeons of Ukraine
9. <http://endoscopy.com.ua/>- Association of Endoscopic Surgeons of Ukraine
10. <http://thoracic-surgery.com.ua/>- Association of Thoracic Surgeons of Ukraine
11. <https://youcontrol.com.ua/>- Association of Vascular Surgeons of Ukraine