

INSTITUTE OF ENGINEERING PHYSICS FOR BIOMEDICINE

APPROVED ИТС ИФИБ

Protocol No. 3.1

dated 30.08.2024

**ACADEMIC COURSE OUTLINE**

**ФАКУЛЬТЕТСКАЯ ХИРУРГИЯ / FACULTY SURGERY**

Educational program track (speciality) [1] 31.05.01 General Medicine

<b>Semester</b>	<b>Labour input, credits</b>	<b>Total course academic, hours</b>	<b>Lectures, hrs.</b>	<b>Practical sessions, hrs.</b>	<b>Laboratory sessions, hrs.</b>	<b>In the form of practical studies, hrs.</b>	<b>Independent studies, hrs.</b>	<b>Independent studies monitoring, hrs.</b>	<b>Course progress, Exam/Pass-fail exam/Term</b>
7	2	72	16	40	0		16	0	PFE
8	4	144	16	40	0		52	0	Ex
Total	6	216	32	80	0	80	68	0	

## **ABSTRACT**

The curriculum for the course is based on the requirements for the completion of the specialist program. Graduates (medical doctors) should be prepared to diagnose, treat, and prevent diseases. In the course of studying the discipline, students acquire knowledge, skills, and abilities in the diagnosis of common surgical diseases, learn to determine the necessary scope of additional studies required to confirm and refine the diagnosis, select the optimal methods of treatment and the necessary scope of surgical intervention, and determine effective ways of preventing diseases.

### **1. ACADEMIC COURSE GOALS AND OBJECTIVES**

The goal of the course is to develop competencies in the diagnosis, treatment, and prevention of the most common surgical diseases.

Objectives:

- to develop a system of knowledge about the causes, pathogenesis, clinical manifestations, methods of diagnosis, treatment, and prevention of surgical diseases;
- to develop the ability to identify the main pathological conditions, symptoms, and syndromes, nosological forms of surgical diseases, and formulate a diagnosis;
- developing the skills and abilities to draw up a plan for examination and treatment of surgical pathology, interpret the results of additional studies in accordance with clinical recommendations in order to establish a diagnosis;
- developing the skills to provide medical care when signs of urgent and life-threatening conditions are detected;
- develop skills and abilities to make rational choices, indications and contraindications for use, the scope of surgical and conservative treatment of surgical diseases, including minimally invasive, endoscopic, endovascular methods, taking into account the severity of the disease and in accordance with clinical recommendations; develop skills to evaluate the effectiveness and safety of the prescribed treatment;
- develop skills and abilities in the implementation of medical rehabilitation programs, preventive measures aimed at preventing the development of diseases, complications, and relapses;
- develop clinical thinking, the ability to work with scientific literature, regulatory documents in the field of surgery, and medical record keeping.

### **2. PLACE OF THE ACADEMIC COURSE IN THE MAIN HIGHER EDUCATION CURRICULUM**

The discipline is implemented as part of the core component of the educational program. It is based on the knowledge, skills, and abilities acquired during the study of such disciplines as: Normal and Pathological Anatomy, Normal and Pathological Physiology, Topographical Anatomy and Operative Surgery, Medical Microbiology and Virology, Immunology, Pharmacology, Propaedeutics of Internal Medicine, and Radiological Diagnostics.

To form a holistic understanding of disease symptomatology, symptom pathogenesis, general diagnostic methodology, and the development of clinical thinking, it is advisable to study this discipline concurrently with the faculty-level courses in Surgery and Internal Medicine, Obstetrics, Interventional Cardiology, Dermatovenerology, and Neurosurgery.

The knowledge, skills, and abilities acquired through mastering this discipline are necessary for the subsequent successful study of such disciplines as: Internal Diseases (Hospital Course), Surgical Diseases (Hospital Course), Industrial Practice in Surgical and Obstetric-Gynecological Profiles, Industrial Practice "Polyclinic Practice," Industrial Practice in Emergency Medicine, and other clinical disciplines.

### 3. DEVELOPED COMPETENCIES AND INTENDED LEARNING OUTCOMES

Universal and/or general professional competencies:

<b>Competency code and title</b>	<b>Code and title of competency-based rubrics</b>
<p>OPIK-4 [1] – Capable of using medical devices stipulated by the medical care procedures, as well as conducting patient examination for diagnosis establishment.</p>	<p>3-OPIK-4 [1] – Know: - modern diagnostic instrumental examination methods for patients, including functional, radiological, ultrasound, radionuclide diagnostics, and endoscopy; - diagnostic capabilities of instrumental examination methods; - medical devices stipulated by the procedure for providing medical care to the adult population in the "Therapy" specialty, and the equipment standard for a therapeutic room; - main medical devices stipulated by the procedures for providing medical care to the adult population in major surgical specialties, obstetrics, and gynecology; - indications for referring patients for instrumental examinations and functional diagnostics; - techniques for physical examination of patients using medical devices stipulated by procedures and considering medical care standards</p> <p>Y-OPIK-4 [1] – Be able to: - use medical devices stipulated by the medical care procedure; - determine the required volume and content of instrumental and functional diagnostics to establish a diagnosis; - interpret results of the most common functional and instrumental diagnostic methods</p> <p>B-OPIK-4 [1] – Possess skills in: - using basic medical devices (stethoscope, blood pressure monitor, sphygmomanometer, pulse oximeter, height-weight scale, measuring tape, neurological hammer, scalpel, forceps, and other devices); - operating electrocardiographs and devices for measuring external respiratory function; - interpreting results of the most common functional and instrumental diagnostic methods</p>
<p>OPIK-6 [1] – Capable of organizing general nursing, providing primary medical care, ensuring the organization of work and making professional decisions in emergencies at the pre-hospital stage, in emergency situations, epidemics and in areas of mass destruction</p>	<p>3-OPIK-6 [1] – Know: - a set of measures for general nursing with diseases of various organs and systems; Signs of clinical and biological death; - indications for patient hospitalization for the most common diseases with typical progression.</p> <p>Y-OPIK-6 [1] – Be able to: - organize care for patient when providing medical care in an outpatient setting; - determine the need for patient hospitalization; - ensure the organization of work in emergency situations, epidemics, and in mass casualty zones.</p> <p>B-OPIK-6 [1] – Possess skills in: - general care of a patient (general nursing); - providing first aid; - making medical</p>

	<p>decisions in emergencies at the prehospital stage, including in emergency situations, epidemics, and in mass casualty zones.</p>
<p>OIIK-7 [1] – Capable of prescribing treatment and monitoring its effectiveness and safety.</p>	<p>3-OIIK-7 [1] – Know: - pharmacological groups of medicinal drugs and their intended purposes; - mechanisms of action of pharmacological and non-pharmacological treatments, indications and contraindications for their use, side effects, and complications caused by their application; - methods for monitoring the effectiveness and safety of various treatment approaches.</p> <p>Y-OIIK-7 [1] – Be able to: - make rational choices for pharmacological and non-pharmacological treatments based on clinical guidelines and in accordance with medical care standards; - develop a treatment plan for a disease or condition considering the diagnosis, age, disease course characteristics, and comorbidities, based on clinical guidelines and medical care standards; - prescribe medications, medical devices, and therapeutic nutrition considering the diagnosis, age, disease course characteristics, and comorbidities, based on clinical guidelines and medical care standards; - justify prescribed pharmacological and non-pharmacological treatments; - evaluate the effectiveness and safety of medications, medical devices, therapeutic nutrition, and other treatment methods.</p> <p>B-OIIK-7 [1] – Possess skills in: - administering medications through various routes of administration; - developing treatment plans for diseases or conditions considering diagnosis, age, disease course characteristics, and comorbidities; - assessing the effectiveness and safety of prescribed treatments.</p>
<p>OIIK-8 [1] – Capable of implementing and monitoring the effectiveness of medical rehabilitation of patients, including during the implementation of individual rehabilitation and habilitation programs for persons with disabilities, and to assess patients' capacity for work.</p>	<p>3-OIIK-8 [1] – Know: - signs of temporary disability and persistent disorders of body functions leading to limitations in life activities; - procedures for conducting temporary disability examinations; - procedures for referring patients for medical and social expertise; - the concept of "Individual Rehabilitation and Habilitation Program for Persons with Disabilities"; - medical indications and contraindications for prescribing spa treatment; - medical indications and contraindications for conducting medical rehabilitation measures, considering the diagnosis, clinical guidelines, procedures, and standards of medical care.</p> <p>Y-OIIK-8 [1] – Be able to: - determine the need for applying natural therapeutic factors, pharmacological and non-pharmacological therapies, and other methods for patients requiring medical rehabilitation and spa treatment; - monitor the effectiveness of medical rehabilitation for patients, including during the implementation of individual rehabilitation and habilitation programs for persons with disabilities; - assess patients' capacity for work; - perform medical rehabilitation measures for patients in accordance with current medical care procedures, clinical guidelines, and medical care standards.</p> <p>B-OIIK-8 [1] – Possess skills in: - identifying signs of temporary disability and persistent disorders of body functions leading to limitations in life activities; - referring patients in need of</p>

	medical rehabilitation to specialist physicians for the implementation of individual rehabilitation program measures, including spa treatment; - completing sick note, referrals for medical and social expertise, and sanatorium treatment cards.
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Professional competencies in compliance with the goals and professional knowledge areas:

<b>Professional activity goal</b>	<b>Professional activity knowledge area</b>	<b>Professional competency code and title; Based on the professional standard, experience analysis</b>	<b>Code and title of competency-based rubrics</b>
medical			
Providing medical care to patients in urgent and emergency forms.	Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population	ПИК-3.1 [1] - Able to provide medical care to patients in urgent or emergency forms  <i>The base:</i> Professional standard: 02.009	3-ПМК-3.1[1] - Know: - clinical signs of sudden cessation of breathing, circulation, loss of consciousness, life-threatening mental disorders for the patient or others; - indications for external defibrillation; - principles of external electro-impulse therapy (defibrillation) devices and rules for performing external defibrillation; - rules for performing basic cardiopulmonary resuscitation.; Y-ПМК-3.1[1] - Be able to: - recognize conditions (sudden acute illnesses, exacerbations of chronic diseases) requiring medical care in urgent or emergency forms; - identify clinical signs of sudden cessation of breathing, circulation, loss of consciousness, life-threatening mental disorders for the patient or others; - organize and perform basic cardiopulmonary resuscitation and external defibrillation measures.; B-ПМК-3.1[1] - Possess skills in: - assessing the

			<p>patient's condition requiring medical care in urgent and emergency forms; - performing basic cardiopulmonary resuscitation; - using medications and medical devices for providing medical care in emergency or urgent forms.</p>
<p>Diagnostics of diseases and pathological conditions of the patients.</p>	<p>Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population</p>	<p>ПК-3.2 [1] - Capable of conducting patient examinations to establish a diagnosis</p> <p><i>The base:</i> Professional standard: 02.009</p>	<p>3-ПК-3.2[1] - Know: - clinical diagnosis establishment algorithm; - patient history-taking and physical examination methodology; - laboratory and instrumental research methods for health assessment to establish a diagnosis; - semiotics of diseases of different organs and systems; - structure, principles of the current International Statistical Classification of Diseases and Related Health Problems (hereinafter - ICD).;</p> <p>Y-ПК-3.2[1] - Be able to: - conduct patient history-taking and physical examination; - interpret history, physical examination data, laboratory and instrumental results to recognize a condition or establish the presence/absence of a disease, establish a diagnosis; - distinguish and recognize in each specific case tissue damage, the reaction to it, and the form of adaptability; - develop a patient examination plan, justify the necessity and scope of laboratory and instrumental examination; - identify main pathological conditions, symptoms and syndromes, nosological forms in the patient</p>

			<p>according to the current ICD.;</p> <p>B-ПІК-3.2[1] - Possess skills in: - patient history-taking and physical examination; Formulating a preliminary diagnosis; - developing a patient examination plan; Interpreting laboratory and instrumental results; - establishing a diagnosis considering the current ICD</p>
<p>Providing primary medical care in outpatient settings and day hospital settings.</p>	<p>Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population</p>	<p>ПІК-3.3 [1] - Able to provide primary medical care in an outpatient setting</p> <p><i>The base:</i> Professional standard: 02.009</p>	<p>3-ПІК-3.3[1] - Know: - general issues of organizing medical care for the population and organizing medical care for the adult population in outpatient settings, including at home; - features of medical care using telemedicine technologies; - Clinical picture, differential diagnosis, features of the course of the disease, complications and outcomes of internal diseases; - diagnostic criteria for the most common diseases of internal organs and systems; - indications for referring patients for specialist consultations according to clinical guidelines and considering relevant medical care standards; - indications for referring patients for specialized medical care in inpatient settings and day hospitals according to clinical guidelines and considering relevant medical care standards; - features of managing and treating elderly patients in outpatient settings. ;</p> <p>Y-ПІК-3.3[1] - Be able to: -</p>

			<p>perform differential diagnosis of internal diseases; - monitor the course of physiological pregnancy; - justify the need for referring patients to specialist consultations; - recognize the main and concomitant diseases; - assess disease or condition severity - the degree of organ and/or system damage or functional impairment due to the disease/condition or its complications; - determine management, examination and treatment tactics for patients with specific diseases (nosological units) depending on disease severity and condition, according to clinical guidelines and considering relevant medical care standards.;</p> <p>B-IIK-3.3[1] - Possess skills in: - conducting differential diagnosis with other diseases/conditions, including emergencies; - interpreting data obtained from patient consultations with specialists; - prescribing additional tests to clarify the diagnosis; - formulating a clinical diagnosis; - prescribing treatment according to clinical guidelines and considering relevant medical care standards.</p>
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#### 4. PEDAGOGIC POTENTIAL OF THE COURSE

Pedagogic tracks/objectives	Pedagogic goals (code)
Vocational and labor education	Establishing conditions for: formation of a deep understanding of the profession's social role, a positive and active commitment to the values of the chosen specialty, and a responsible attitude towards professional activity and work (B14)
Vocational and labor education	Establishing conditions for: formation of

	psychological readiness for professional activity in the chosen profession (B15)
Professional education	Establishing conditions for: formation of responsibility for professional choice, professional development and professional decisions (B18)
Professional education	Establishing conditions for: formation of motivation to improve the quality of medical care to the population and the desire to follow the rules and norms of interaction between the doctor, colleagues and the patient, contributing to the creation of the most favorable environment for the patient's recovery (B34)

## 5. ACADEMIC COURSE STRUCTURE AND CONTENT

Academic course sections, their scope, terms of study and assessment:

No.	Academic course section name	Weeks	Lectures/ Practical (seminars)/ Laboratory sessions, hrs.	Compulsory current assessment (form*, week)	Maximum grade per section**	Section assessment (form*, week)	Competency-based rubrics
	<i>7 Semester</i>						
1	The First Section	1-8	8/24/0	T-8 (25)	25	T-8	3-ОПК-4, У-ОПК-4, В-ОПК-4, 3-ОПК-6, У-ОПК-6, В-ОПК-6, 3-ОПК-7, У-ОПК-7, В-ОПК-7, 3-ОПК-8, У-ОПК-8, В-ОПК-8, 3-ПК-3.1, У-ПК-3.1, В-ПК-3.1, 3-ПК-3.2, У-ПК-3.2, В-ПК-3.2, 3-ПК-3.3, У-ПК-3.3, В-ПК-3.3
2	The Second Section	9-16	8/16/0	T-15 (25)	25	T-15	3-ОПК-4, У-ОПК-4, В-ОПК-4, 3-ОПК-6,

							У-ОПК-6, В-ОПК-6, З-ОПК-7, У-ОПК-7, В-ОПК-7, З-ОПК-8, У-ОПК-8, В-ОПК-8, З-ПК-3.1, У-ПК-3.1, В-ПК-3.1, З-ПК-3.2, У-ПК-3.2, В-ПК-3.2, З-ПК-3.3, У-ПК-3.3, В-ПК-3.3
	<i>Totals for 7 Semester</i>		16/40/0		50		
	<b>Assessment events for 7 Semester</b>				50	PFE	З-ОПК-4, У-ОПК-4, В-ОПК-4, З-ОПК-6, У-ОПК-6, В-ОПК-6, З-ОПК-7, У-ОПК-7, В-ОПК-7, З-ОПК-8, У-ОПК-8, В-ОПК-8
	<i>8 Semester</i>						
1	The First Section	1-8	8/18/0	T-8 (25)	25	T-8	З-ОПК-4, У-ОПК-4, В-ОПК-4, З-ОПК-6, У-ОПК-6, В-ОПК-6, З-ОПК-7, У-ОПК-7, В-ОПК-7, З-ОПК-8, У-ОПК-8, В-ОПК-8, З-ПК-3.1, У-ПК-3.1, В-ПК-3.1, З-ПК-3.2, У-ПК-3.2, В-ПК-3.2, З-ПК-3.3, У-ПК-3.3, В-ПК-3.3

2	The Second Section	9-15	8/22/0	T-15 (25)	25	T-15	3-ОПК-4, У-ОПК-4, В-ОПК-4, 3-ОПК-6, У-ОПК-6, В-ОПК-6, 3-ОПК-7, У-ОПК-7, В-ОПК-7, 3-ОПК-8, У-ОПК-8, В-ОПК-8, 3-ПК-3.1, У-ПК-3.1, В-ПК-3.1, 3-ПК-3.2, У-ПК-3.2, В-ПК-3.2, 3-ПК-3.3, У-ПК-3.3, В-ПК-3.3
	<i>Totals for 8 Semester</i>		16/40/0		50		
	<b>Assessment events for 8 Semester</b>				50	Ex	3-ОПК-4, У-ОПК-4, В-ОПК-4, 3-ОПК-6, У-ОПК-6, В-ОПК-6, 3-ОПК-7, У-ОПК-7, В-ОПК-7, 3-ОПК-8, У-ОПК-8, В-ОПК-8, 3-ПК-3.1, У-ПК-3.1, В-ПК-3.1, 3-ПК-3.2, У-ПК-3.2, В-ПК-3.2, 3-ПК-3.3, У-ПК-3.3, В-ПК-3.3

\* – abbreviated name of assessment

\*\* – 100 maximum points per semester including a pass/fail exam and (or) an exam

Abbreviated current assessment forms and section assessment

<b>Abbreviation</b>	<b>Full name</b>
T	Testing
PFE	Pass/fail examination
Ex	Exam

## SYLLABUS

Weeks	Topics / Content	Lect., hrs.	Pr./sem., hrs.	Lab., hrs.
	<i>7 Semester</i>	16	40	0
<b>1-8</b>	<b>The First Section</b>	8	24	0
1 - 2	<b>General questions of surgical diseases.</b> Course structure. Diagnosis in a surgical clinic. The most important syndromes encountered in surgical practice. Principles of treating patients in the postoperative period. Prevention of postoperative complications.	All		
		2	0	0
		Online		
		0	0	0
3 - 4	<b>Abdominal surgery. Acute appendicitis</b> Acute appendicitis. Clinical presentation. Diagnosis. Differential diagnosis. Treatment. Complications of acute appendicitis.	All		
		2	8	0
		Online		
		0	0	0
5 - 8	<b>Abdominal surgery. Acute cholecystitis. Pancreatitis.</b> Classification. Etiology, pathogenesis, clinical presentation, diagnosis of acute cholecystitis. The mechanism of stone formation. Differential diagnosis of cholecystitis. Tactics of surgical treatment. Complications of gallstone disease. Tactics of surgical treatment. The role of minimally invasive methods in the treatment of complications. Acute pancreatitis. Etiology, clinical presentation, diagnosis, treatment. Complications of pancreatitis. Chronic pancreatitis and pancreatic cysts. Classification, modern diagnostic methods, principles of treatment tactics, surgical methods, surgical strategy.	All		
		4	16	0
		Online		
		0	0	0
<b>9-16</b>	<b>The Second Section</b>	8	16	0
9 - 13	<b>Abdominal surgery. Gastroduodenal diseases</b> Complications of gastric and duodenal ulcer disease. Diagnosis and treatment of perforated gastric and duodenal ulcers. Prehospital diagnosis, issues of surgical tactics, choice of surgical intervention method. Gastric outlet stenosis, etiology, clinical presentation, diagnosis, choice of surgical intervention method.	All		
		6	10	0
		Online		
		0	0	0
14 - 16	<b>Herniology.</b> Hernias of the anterior abdominal wall. Clinical presentation. Differential diagnosis. Methods of hernioplasty. Incarcerated hernia. The mechanism of incarceration. Types of incarcerations. Diagnosis. Surgical treatment of incarcerated hernias. False reduction. False incarceration.	All		
		2	6	0
		Online		
		0	0	0
	<i>8 Semester</i>	16	40	0
<b>1-8</b>	<b>The First Section</b>	8	18	0
1 - 2	<b>Abdominal surgery. Intestinal obstruction.</b> Acute intestinal obstruction. Clinical presentation. Diagnosis. Classification. Indications for surgical treatment. Features of patient management in the postoperative period. Complications.	All		
		2	6	0
		Online		
		0	0	0
3 - 5	<b>Abdominal surgery. Peritonitis. Acute abdomen.</b> Peritonitis. Classification. Diagnosis of peritonitis depending on etiology. Features of the clinical presentation of peritonitis	All		
		6	12	0
		Online		

	depending on the stage and prevalence of peritonitis. Differential diagnosis. Tactics of surgical treatment of peritonitis. Laparoscopic methods for treating peritonitis. Features of patient management in the postoperative period. Diagnosis, choice of surgical treatment tactics. Comprehensive treatment of peritonitis, programmed sanitation, antibiotic therapy. Closed abdominal injuries. Acute abdomen. The most common forms of acute abdomen. The main causes of adverse outcomes in acute surgical diseases of the abdominal organs. The meaning of the term "acute abdomen". Classification aspects of the structure of surgical diseases included in the concept of "acute abdomen". The main diagnostic difficulties at the prehospital stage in patients with an acute abdomen. The main groups of non-surgical diseases that can simulate an acute abdomen. Atypical course of acute surgical diseases of the abdominal organs in debilitated and elderly patients. Measures to prevent diagnostic errors in patients with acute surgical diseases of the abdominal organs at the prehospital stage.	0	0	0
<b>9-15</b>	<b>The Second Section</b>	8	22	0
9 - 13	<b>Diseases of the colon and rectum</b> Inflammatory bowel diseases. Ulcerative colitis and Crohn's disease. Classification. Etiology, pathogenesis, clinical presentation, complications. Principles of surgical tactics. Surgical treatment (indications and timing of surgery). Types of surgical interventions. Treatment outcomes. Hirschsprung's disease. Epidemiology, etiology, clinical presentation, diagnosis, treatment. Diverticulitis. Diagnosis. Complications. Surgical tactics. Choice of surgical method. Prevention of complications. Colonic polyposis. Etiology, surgical tactics. Endoscopic polypectomy. Classification of rectal diseases. Examination methodology. Congenital malformations, clinical presentation, diagnosis, treatment. Hemorrhoids. Definition. Classification. Etiology. Pathogenesis. Clinical presentation of hemorrhoids and its complications. Conservative and surgical treatment of hemorrhoids. Clinical presentation, diagnostic methods, issues of treatment tactics. Chronic proctitis. Clinical presentation, diagnostic methods, issues of surgical tactics. Colorectal cancer. Epidemiology, etiology, classification. Prevention and early diagnosis. Clinical manifestations. Diagnostic methods. Surgical tactics. Types of interventions. Complications. Prognosis	All		
		6	16	0
		Online		
		0	0	0
14 - 15	<b>Breast surgery.</b> Mastitis and mastopathies. Definition and classification of benign tumors. The clinical picture of the disease depending on its stage. Methods of conservative and surgical treatment. Features of opening breast abscesses. Management of the postoperative period. Breast cancer. Epidemiology, etiology, classification. Diagnosis, surgical tactics. Prevention. Prognosis.	All		
		2	6	0
		Online		
		0	0	0

Abbreviated names of online options:

Abbreviation	Full name
EC	E-course
FtM	Full-text material
FtL	Full-text lectures
VM	Video materials
AM	Audio materials
Prs	Presentations
T	Tests
ERM	E-reference materials
IS	Interactive site

## PRACTICAL SESSIONS TOPICS

Weeks	Topics / Content
	<i>7 Semester</i>
1 - 4	<p><b>Abdominal Surgery. Acute Appendicitis</b></p> <p>1. Acute Appendicitis. Clinical Presentation. Diagnosis. Differential Diagnosis. Treatment. Complications of Acute Appendicitis</p> <p>1. Tying Surgical Knots</p> <ol style="list-style-type: none"> <li>Forming a Forward Loop (Two-Handed)</li> <li>Forming a Reverse Loop (Two-Handed)</li> <li>Tying a Simple (Square) Knot</li> <li>Tying a Surgeon's Knot</li> <li>Tying a Slip Knot (for instrument tying)</li> </ol> <p>2. Placing Skin Sutures</p> <ol style="list-style-type: none"> <li>Placing a Simple Interrupted Suture</li> <li>Placing a Donatti Suture (Vertical Mattress Suture)</li> <li>Placing an Allgöwer Suture (Continuous Intra-dermal Suture)</li> <li>Placing a Subcuticular Suture</li> </ol> <p>3. Laparoscopic Surgery. Introduction</p> <ol style="list-style-type: none"> <li>Working in a 2D Space</li> <li>Handling Laparoscopic Instruments</li> <li>Intra-corporeal and Extra-corporeal Knot Tying</li> </ol> <p>4. Laparoscopic Suturing</p> <ol style="list-style-type: none"> <li>Needle Positioning and Driving</li> <li>Placing a Single-Layer Intestinal Side-to-Side Anastomosis Suture</li> </ol> <p>5. Physical Examination. A Patient with Acute Appendicitis</p> <ol style="list-style-type: none"> <li>Inspection</li> <li>Palpation</li> <li>Percussion</li> <li>Auscultation</li> </ol>
5 - 8	<p><b>Abdominal Surgery. Acute Cholecystitis. Pancreatitis</b></p> <p>1. Acute Cholecystitis. Classification. Etiology, pathogenesis, clinical presentation, diagnosis of acute cholecystitis. The mechanism of stone formation. Differential diagnosis of cholecystitis. Tactics of surgical treatment. Complications of gallstone disease. Tactics of surgical treatment. The role of minimally invasive methods in the treatment of complications.</p> <p>2. Acute Pancreatitis. Etiology, clinical presentation, diagnosis, treatment. Complications of pancreatitis. Chronic pancreatitis and pancreatic cysts. Classification, modern diagnostic methods, principles of treatment tactics, surgical methods, surgical strategy.</p>
9 - 13	<b>Abdominal Surgery. Gastroduodenal Diseases.</b>

	<p>Abdominal Surgery. Gastroduodenal Diseases.</p> <p>1. Complications of gastric and duodenal ulcer disease. Diagnosis and treatment of perforated gastric and duodenal ulcers. Prehospital diagnosis, issues of surgical tactics, choice of surgical intervention method.</p> <p>2. Gastric outlet stenosis, etiology, clinical presentation, diagnosis, choice of surgical intervention method.</p>
14 - 16	<p><b>Herniology</b></p> <p>Hernias of the anterior abdominal wall. Clinical presentation. Differential diagnosis. Methods of hernioplasty. Incarcerated hernia. The mechanism of incarceration. Types of incarcerations. Diagnosis. Surgical treatment of incarcerated hernias. False reduction. False incarceration.</p>
	<p><i>8 Semester</i></p>
1 - 2	<p><b>Intestinal obstruction.</b></p> <p>Acute intestinal obstruction. Clinical presentation. Diagnosis. Classification. Indications for surgical treatment. Features of patient management in the postoperative period. Complications.</p>
3 - 6	<p><b>Peritonitis. Acute Abdomen</b></p> <p>1. Peritonitis. Classification. Diagnosis of peritonitis depending on the etiology. Features of the clinical presentation of peritonitis depending on the stage and spread of peritonitis. Differential diagnosis. Tactics of surgical treatment of peritonitis. Laparoscopic methods for the treatment of peritonitis. Features of patient management in the postoperative period. Diagnosis and choice of surgical treatment tactics. Comprehensive treatment of peritonitis, programmed lavage, antibiotic therapy.</p> <p>2. Closed Abdominal Injuries.</p> <p>3. Acute Abdomen. The most common forms of acute abdomen. The main causes of adverse outcomes in acute surgical diseases of the abdominal organs. The meaning of the term "acute abdomen". Classification and structure of surgical diseases included in the concept of "acute abdomen". The main diagnostic difficulties at the prehospital stage in patients with an acute abdomen. The main groups of non-surgical diseases that can mimic an acute abdomen. Atypical course of acute surgical diseases of the abdominal organs in debilitated and elderly patients. Measures to prevent diagnostic errors in patients with acute surgical diseases of the abdominal organs at the prehospital stage.</p>
9 - 13	<p><b>Diseases of the Colon and Rectum</b></p> <p>1. Inflammatory Bowel Diseases. Ulcerative Colitis and Crohn's Disease. Classification. Etiology, pathogenesis, clinical presentation, complications. Principles of surgical tactics. Surgical treatment (indications and timing of surgery). Types of surgical interventions. Treatment outcomes.</p> <p>2. Hirschsprung's Disease. Epidemiology, etiology, clinical presentation, diagnosis, treatment. Diverticulitis. Diagnosis. Complications. Surgical tactics. Choice of surgical method. Prevention of complications.</p> <p>3. Colonic Polyposis. Etiology, surgical tactics. Endoscopic polypectomy.</p> <p>4. Classification of Rectal Diseases. Examination Methodology. Congenital Malformations, clinical presentation, diagnosis, treatment.</p> <p>5. Hemorrhoids. Definition. Classification. Etiology. Pathogenesis. Clinical presentation of hemorrhoids and its complications. Conservative and surgical treatment of hemorrhoids. Clinical picture, diagnostic methods, issues of treatment tactics.</p> <p>6. Chronic Paraproctitis. Clinical presentation, diagnostic methods, issues of surgical tactics.</p> <p>7. Colorectal Cancer. Epidemiology, etiology, classification. Prevention and early diagnosis. Clinical manifestations. Diagnostic methods. Surgical tactics. Types of interventions. Complications. Prognosis.</p>

13 - 15	<p><b>Breast Diseases</b></p> <p>1. Mastitis and Mastopathies. Definition and classification of benign tumors. The clinical picture of the disease depending on its stage. Methods of conservative and surgical treatment. Features of incision and drainage of breast abscesses. Management of the postoperative period.</p> <p>2. Breast Cancer. Epidemiology, etiology, classification. Diagnosis, surgical tactics. Prevention. Prognosis.</p>
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## 6. EDUCATIONAL TECHNOLOGIES

Along with the classical method of conducting clinical practical classes, the following are provided:

1. Conducting classes using computer-based training programs and analyzing clinical cases.
2. To organize independent work, students are expected to prepare essays, reports, and presentations for practical classes, as well as work with additional literature.
3. Participation in a student scientific community

## 7. ASSESSMENT TOOLKIT

The assessment toolkit ensures verification of the intended learning outcomes achievement (competency-based rubrics) using current, midterm and interim assessment of the course.

The link between developed competencies and their assessment is presented in the following table:

Competency	Achievement rubrics	Assessment activity (Syl 1)	Assessment activity (Syl 2)
ОПК-4	3-ОПК-4	PFE, T-8, T-15, T-8, T-15	Ex, T-8, T-15, T-8, T-15
	У-ОПК-4	PFE, T-8, T-15, T-8, T-15	Ex, T-8, T-15, T-8, T-15
	В-ОПК-4	PFE, T-8, T-15, T-8, T-15	Ex, T-8, T-15, T-8, T-15
ОПК-6	3-ОПК-6	PFE, T-8, T-15, T-8, T-15	Ex, T-8, T-15, T-8, T-15
	У-ОПК-6	PFE, T-8, T-15, T-8, T-15	Ex, T-8, T-15, T-8, T-15
	В-ОПК-6	PFE, T-8, T-15, T-8, T-15	Ex, T-8, T-15, T-8, T-15
ОПК-7	3-ОПК-7	PFE, T-8, T-15, T-8, T-15	Ex, T-8, T-15, T-8, T-15
	У-ОПК-7	PFE, T-8, T-15, T-8, T-15	Ex, T-8, T-15, T-8, T-15
	В-ОПК-7	PFE, T-8, T-15, T-8, T-15	Ex, T-8, T-15, T-8, T-15
ОПК-8	3-ОПК-8	PFE, T-8, T-15, T-8, T-15	Ex, T-8, T-15, T-8, T-15
	У-ОПК-8	PFE, T-8, T-15, T-8, T-15	Ex, T-8, T-15, T-8, T-15
	В-ОПК-8	PFE, T-8, T-15, T-8, T-15	Ex, T-8, T-15, T-8, T-15

		T-15	15
ПК-3.1	3-ПК-3.1	T-8, T-15	Ex, T-8, T-15
	У-ПК-3.1	T-8, T-15	Ex, T-8, T-15
	В-ПК-3.1	T-8, T-15	Ex, T-8, T-15
ПК-3.2	3-ПК-3.2	T-8, T-15	Ex, T-8, T-15
	У-ПК-3.2	T-8, T-15	Ex, T-8, T-15
	В-ПК-3.2	T-8, T-15	Ex, T-8, T-15
ПК-3.3	3-ПК-3.3	T-8, T-15	Ex, T-8, T-15
	У-ПК-3.3	T-8, T-15	Ex, T-8, T-15
	В-ПК-3.3	T-8, T-15	Ex, T-8, T-15

### Educational achievement rubrics scales

The scale of each assessment activity varies from 0 to the maximum established point, inclusive. The final assessment of the course is performed on a 100-point scale and represents the sum of the points earned by the student in the section assessments, framework of current and interim assessment.

Sections and interim assessments are considered passed when the student achieves a minimum score equal to 60% of the maximum. The final grade is assigned only upon passing all sections and the interim assessment.

The final grade is assigned in accordance with the following scale:

Total score	Rating on a 4-point scale	Pass/fail examination	ECTS assessment
90-100	5 – « <i>excellent</i> »	« <i>pass</i> »	A
85-89	4 – « <i>good</i> »		B
75-84			C
70-74			D
65-69			3 – « <i>satisfactory</i> »
60-64	F		
below 60	2 – « <i>fail</i> »	« <i>fail</i> »	

An “excellent” grade indicates a deep and solid mastery of the program material by a student who presents their answers consistently, clearly, and logically, is able to closely link theory with practice, and uses materials from monographic literature in their answers.

A “good” grade corresponds to a student’s solid knowledge of the material, who presents their answers competently and to the point, without any significant inaccuracies.

A “satisfactory” grade corresponds to the basic level of mastery of the material by the student, in which the main material has been mastered, but its details have not been assimilated, the answers contain inaccuracies, insufficiently correct wording and logical inconsistencies.

A grade “pass” corresponds to at least a basic level of mastery of the program material, in which the student possesses the necessary knowledge, skills, and abilities, and is able to apply theoretical principles to solve typical practical problems.

A grade “fail” is given to a student who lacks a significant understanding of the curriculum material, makes significant errors in their answers, or fails all required assignments. These students are generally unable to continue their studies without additional classes.

## **8. ACADEMIC COURSE EDUCATIONAL, METHODOLOGICAL AND INFORMATIONAL SUPPORT**

### **CORE READING:**

1. ЭИ Г 72 General surgery : Рекомендовано УМО по медицинскому и фармацевтическому образованию вузов России в качестве учебного пособия для иностранных студентов медицинских вузов, Гостищев В.К., Москва: ГЭОТАР-Медиа, 2020
2. ЭИ М59 Surgical diseases. Vol. 1. : учебное пособие, Merzlikin N.V., Москва: ГЭОТАР-Медиа, 2021
3. ЭИ Т44 The Course of Faculty (Analitical) Surgery in Pictures, Tables and Schemes : учебное пособие, , Москва: ГЭОТАР-Медиа, 2017
4. ЭИ К 75 Факультетская хирургия : учебник для вузов, Мовчан К. Н. [и др.], Москва: Юрайт, 2024
5. ЭИ К 89 Хирургические болезни : учебник, , Москва: ГЭОТАР-Медиа, 2021

### **FURTHER READING:**

1. ЭИ К85 Care for Surgical Patients : учебное пособие, Kondusova Yu.V., Kruchkova A.V., Poletayeva I.A., Москва: ГЭОТАР-Медиа, 2020
2. ЭИ А 13 Абдоминальная хирургия : , , Москва: ГЭОТАР-Медиа, 2021
3. ЭИ Ч-49 Грыжи живота : иллюстрированное руководство : учебное наглядное пособие, Алипов В.В., Черных А.В., Попова М.П., Москва: ГЭОТАР-Медиа, 2020
4. ЭИ Д56 Доброкачественные заболевания молочной железы : Серия "Библиотека врача-специалиста", , Москва: ГЭОТАР-Медиа, 2019
5. ЭИ К89 Клиническая хирургия: обследование пациента : практическое руководство, Кузнецов Н.А., Москва: ГЭОТАР-Медиа, 2020
6. ЭИ М 48 Лапароскопия: метод биполярной биинструментальной коагуляции : учебное пособие для вузов, Малышев В. В., Мельников Н. В., Москва: Юрайт, 2024
7. ЭИ Н52 Неотложная абдоминальная хирургия : монография, , Москва: ГЭОТАР-Медиа, 2024
8. ЭИ О-79 Острый калькулезный холецистит и его осложнения. Новое о холелитиазе. Практическое руководство : практическое руководство, Буриев И.М., Мелконян Г.Г., Москва: ГЭОТАР-Медиа, 2020
9. ЭИ Х 50 Хирургические болезни : , , Москва: ГЭОТАР-Медиа, 2022

10. ЭИ Э64 Эндоскопическая абдоминальная хирургия : монография, , Москва: ГЭОТАР-Медиа, 2024

11. ЭИ Р 61 Эндоскопия: методы диагностики и лечения в хирургической практике : учебное пособие для вузов, Соколов А. А. [и др.], Москва: Юрайт, 2024

#### SOFTWARE:

No special softwares is required

#### LMS AND ONLINE RESOURCES

<https://online.mephi.ru/>

<http://library.mephi.ru/>

### 9. LOGISTICAL SUPPORT

1. Тренажер интубации с контроллером (64-301)
2. Манекен сердечно-легочной реанимации Р4201СРR ВОЛОДЯ. Модификация 1 (64-301)
3. Учебный автоматический наружный дефибрилятор МУ0353 (64-301)
4. Мешок Амбу КД-МП-В (64-301)
5. Мышь, клавиатура (Клиническая база)
6. Проектор SMART P109 (Клиническая база)
7. Кушетка медицинская (Клиническая база)
8. Монитор (Клиническая база)
9. Набор для отработки навыков местной анестезии (64-403)
10. Тренажеры базовых хирургических навыков наложения швов и завязывания узлов (включают хирургические и (64-403)
11. Медицинское оборудование для практической подготовки обучающихся, предусмотренное договором (Клиническая база)
12. Иное оснащение, предусмотренное порядками оказания медицинской помощи по соответствующему профилю (Клиническая база)
13. Набор операционный большой в 4 кипятильниках (64-403)
14. Тренажер для выполнения люмбальной пункции и эпидуральной анестезии (64-302)
15. Интерактивный лапароскопический тренажер для отработки базовых навыков ЛТК-1.04 (МУ0614) с инструмен (64-301)
16. Тренажеры базовых хирургических навыков с имитацией кожи (64-403)

## **10. EDUCATIONAL AND METHODOLOGICAL RECOMMENDATIONS FOR STUDENTS**

Before you begin studying the topic, you need to familiarize yourself with the main questions of the practical lesson plan and the list of recommended literature.

When preparing for a practical lesson, you should first review lecture notes, textbook sections, and teaching aids to gain a general understanding of the topic's place and significance in the course being studied. Then, consult additional literature and take notes on the recommended sources.

In the process of studying the recommended material, it is necessary to understand the structure of the topic being studied, identify the main points, follow their logic and thereby delve into the essence of the problem being studied.

It is necessary to keep records of the material being studied in the form of notes, which, along with visual memory, also includes motor memory and allows for the accumulation of an individual fund of auxiliary materials for the rapid repetition of what has been read, for the mobilization of accumulated knowledge.

### **Clinical practical classes**

The most important stage of the practical lesson is the students' independent work on mastering practical skills: in-simulated conditions, at the patient's bedside, in the functional diagnostics room, etc.

Depending on the specific topic of the lesson, the student independently (or under the supervision of the teacher) questions the patient, conducts a clinical examination, is present during instrumental diagnostics and studies the results of additional studies, summarizes the data, presents it in the form of fragments of the medical history and reports the results to the teacher.

Achievements are assessed individually for each student, based on the degree of development of practical skills and their theoretical foundations.

Clinical case studies of specific patients are conducted for the entire group or through students' participation in clinical case studies and periodic scientific and practical conferences at the medical institutions where their practical training takes place. During these case studies, the instructor evaluates each student's active participation and clinical reasoning skills.

Solving situational problems proposed by the teacher, which develop clinical thinking and force the student to use knowledge gained in various subjects of the specialty.

Active and interactive forms of conducting classes are widely used in the educational process (work in small groups, activation of creative activities, use of computer training programs, conference classes).

The teacher supervises the students' independent work, preparation of abstracts, research and development work, work with the patient together with the teacher, interpretation of data from additional research methods, and completion of medical documentation.

Basic note-taking forms: outline (simple and detailed), excerpts, and abstracts. During preparation, it is important to compare sources, consider the material being studied, develop an action plan, and carefully consider your oral presentation.

Recommendations for preparing for the test.

Test – 10-15-20-25 points. Each question – 1 (2) point.

TOPICS: Specified in each specific section

Answer requirements: A clear, detailed answer (2 points/question) or a choice of the correct answer to the test question (1 point/question).

Recommendations for preparing for a test/exam

Response requirements and evaluation criteria:

An "excellent" grade of 45-50 points on a test/exam is awarded for: a correct, complete, and logically constructed answer; the ability to use specialized terminology; the ability to illustrate theoretical principles with practical material.

A "good" grade of 35–44 points on the exam is awarded for: a correct, complete, and logically constructed answer with minor errors or inaccuracies; the ability to use specialized terminology, but incomplete conclusions or generalizations are made.

A "satisfactory" grade of 30–34 points on the exam is given for: a schematic, incomplete answer; inability to use special terms or ignorance of them; with one serious error;

An "unsatisfactory" grade of <30 points on the exam is given for: answering all questions on the ticket with serious errors; inability to use specialized terminology; inability to give examples of the practical use of scientific knowledge.

Admission to the exam in a discipline is granted based on a score of over 30 points.

A student can earn between 30 and 50 points per semester.

The minimum score for an exam answer is 30, the maximum is 50.

## **11. EDUCATIONAL AND METHODOLOGICAL RECOMMENDATIONS FOR TEACHERS**

Grading and criteria for tests, open-ended answer assessments, homework, and the final test:

1. Tests are graded according to the scheme: 1 point – 1 correct answer. If a student did not attempt the work: (-1) point.

2. Open-ended answer assessments are graded according to the scheme: complete answer – 2 points, incomplete answer – 1 point, no answer – 0 points. If a student did not attempt the work: (-2) points.

3. Homework must be completed by all students to be admitted to the final assessment. For work submitted late, a deduction of (-1) point from the final grade is applied.

4. Criteria for evaluating a presentation report. Conversion from a 100-point scale to a 10-point (5-point) scale is applied.

5. Criteria for evaluating an essay. Maximum score is 10 points. Conversion to a 5-point scale is possible.

10 points are awarded if all requirements for writing the essay are met: the problem is identified and its relevance is justified; a brief analysis of the problem is provided and a personal position is logically presented; conclusions are formulated; the source material is fully analyzed; the required length is maintained; formatting requirements are met.

9 points are awarded if the following requirements for the essay are met: the problem is identified and its relevance is justified; a brief analysis of the problem is provided and a personal position is logically presented; conclusions are formulated; the source material is fully analyzed. However, the required length is not maintained and/or formatting requirements are not met.

8 points – the main requirements for the essay are met, but minor shortcomings are present. Specifically, there are inaccuracies in the presentation of the material; a logical sequence in reasoning is absent; the required essay length is not maintained; there are omissions in formatting.

7 points – the main requirements for the essay are met, but the following shortcomings are present: there are inaccuracies in the presentation of the material; a logical sequence in reasoning is absent; conclusions are not formulated; the required essay length is not maintained; there are omissions in formatting.

6 points – there are significant deviations from the essay requirements; the topic is only partially covered; factual errors in the content are present; conclusions and a personal viewpoint on the problem are absent.

5 points – there are significant deviations from the essay requirements: the topic is only partially covered; factual errors in the presentation of materials and methods are present; conclusions and a personal viewpoint on the problem are absent; the required format is not maintained.

4 points – there are significant deviations from the essay requirements: the relevance of the topic is not revealed; factual errors in the presentation of materials and methods are present; conclusions and a personal viewpoint on the problem are absent; the required format is not maintained.

3 points – analysis of the topic's relevance, applied approaches, and methods is absent, while the formal length requirement for the essay is met.

2 points – the essay topic is not addressed, a substantial misunderstanding of the problem is evident. However, the formal length and formatting requirements are fulfilled.

1 point – the essay topic is not addressed, a substantial misunderstanding of the problem is evident.

0 points – the essay was not submitted by the student.

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