

**MINISTRY OF EDUCATION AND SCIENCE OF THE RUSSIAN  
FEDERATION**

**PENZA STATE UNIVERSITY**

**FACULTY OF GENERAL MEDICINE**



## **STUDY PROGRAM**

**C 1.1.41. General Surgery, Radiology**

**Fields of study - 31.05.01. General Medicine**

**Graduate's qualification (degree)- medical doctor**

**Type of education - full-time**

Penza, 2019

### **1. Subject mastering goals**

Main goals of mastering "General surgery, radiology" are the development of students' abilities to apply the methods of asepsis and antiseptics, use medical instruments, carry out sanitary treatment of medical and diagnostic rooms in hospitals, use the technique of taking care of ill adults and adolescents. Analyze the results of X-ray examination of patients. Interpret the results of the most common methods of laboratory and functional diagnostics, thermometry to identify pathological processes in human organs and systems; to justify the nature of the pathological process and its clinical manifestations in the human body, to understand the principles of pathogenetic therapy of the most common diseases; to justify the need for a clinical and immunological examination of an ill adult and adolescent, to know the types and methods of modern anesthesia (mask, endotracheal, intravenous) in children and adolescents; be able to apply methods for the prevention of postoperative pulmonary complications; understand the features of intensive care in patients of different age and sex groups. Be able to use simple medical instruments (phonendoscope, spatula, neurological hammer, etc.); possess information on the principles of sterilization, disinfection and antiseptic processing of instruments and equipment in order to avoid infection of the doctor and patient; skills of making a preliminary diagnosis based on the results of laboratory and instrumental examination of the adult population and adolescents, as well as the ability and willingness to study scientific and medical information, domestic and foreign experience in the field of research.

The tasks of the discipline are:

1. To master the program of general surgery, radiology based on the knowledge gained at the departments of anatomy, physiology and biochemistry, morphology with a course of clinical oncology.
2. To develop to students' scientific understanding of the relationship of the structure, function of human organs and systems, depending on the environmental conditions.
3. To teach students the methods of clinical examination of surgical patients, formulate the diagnosis correctly, choose the basic principles for therapeutic and tactical measures.
4. To bring up ethical standards of behavior in the clinic, respect for the patients.
5. To develop an algorithm for providing emergency medical care to surgical patients with critical disability.

### **2. Subject's place in MPEP's structure**

The discipline "General Surgery, radiology" refers to the basic part of the C1 Block of the Discipline, which forms the basis of the clinical thinking of the future specialist doctor. In the process of studying the theoretical and practical material, students learn the general surgical principles of preparation of patient to surgery operation, patients' management before and after surgery, and providing medical care of patients with the most common surgical pathology.

The academic discipline is based on the knowledge gained from the study of humanitarian, natural sciences, medical preventive and general clinical disciplines (bioethics; Latin; biology; biochemistry; human anatomy; normal physiology; pathological anatomy; clinical pathological anatomy; pathophysiology, clinical pathophysiology; pharmacology and others).

Competences acquired during the study of the discipline "General Surgery, radiology" prepare the student for the development of other professional competencies.

The main provisions of the discipline should be used for further study of the following disciplines: "Faculty Surgery, Urology", "Modern Technologies in Surgery", "Hospital Surgery, Pediatric Surgery", "Anesthesiology, Resuscitation, Intensive Therapy", "Outpatient Surgery", etc. , as well as in the preparation of final qualifying work.

### **3. Student competences developed as a result of subject mastering**

Studying of the subject is intended to develop elements of the following competences according to FSESHE in the given field:

Competence code	Title of competence	Structural elements of competence (having mastered the subject students should have knowledge, skills, working abilities)
1	2	3
PC-5	<p>willingness to collect and analyze patient complaints, his medical history, examination results, laboratory, instrumental, autopsy and other studies in order to recognize the condition or establish the fact of the presence or absence of the disease</p> <p>willingness to collect and analyze patient complaints, his medical history, examination results, laboratory, instrumental, autopsy and other studies in order to recognize the condition or establish the fact of the presence or absence of the disease</p> <p>willingness to collect and analyze patient complaints, his medical history, examination results, laboratory, instrumental, autopsy and other studies in order to recognize the condition or establish the fact of the presence or absence of the disease</p>	<p>To know: rules for collecting and analyzing complaints of a surgical patient, his medical history, examination results, laboratory, instrumental and autopsy, other studies in order to recognize the condition or establish the presence or absence of the disease</p> <p>Be able to: collect and analyze complaints of a surgical patient, his medical history, examination results, laboratory, instrumental, autopsy and other studies in order to recognize the condition or establish the presence or absence of the disease</p> <p>Obtain and apply: skills of collecting and analyzing complaints of a surgical patient, his</p> <hr/> <p>To know: rules for collecting and analyzing complaints of a surgical patient, his medical history, examination results, laboratory, instrumental and autopsy, other studies in order to recognize the condition or establish the presence or absence of the disease</p> <p>Be able to: collect and analyze complaints of a surgical patient, his medical history, examination results, laboratory, instrumental, autopsy and other studies in order to recognize the condition or establish the presence or absence of the disease</p> <p>Obtain and apply: skills of collecting and analyzing complaints of a surgical patient, his</p> <hr/> <p>To know: rules for collecting and analyzing complaints of a surgical patient, his medical history, examination results, laboratory, instrumental and autopsy, other studies in order to recognize the condition or establish the presence or absence of the disease</p> <p>Be able to: collect and analyze complaints of a surgical patient, his medical history, examination results, laboratory, instrumental, autopsy and other studies in order to recognize the condition or establish the presence or absence of the disease</p> <p>Obtain and apply: skills of collecting and analyzing complaints of a surgical patient, his</p>
PC-6	<p>willingness to collect and analyze patient complaints, his medical history, examination results, laboratory, instrumental, autopsy and other studies in order to recognize the condition or establish the fact of the presence or absence of the disease</p> <p>willingness to collect and</p>	<p>To know: rules for collecting and analyzing complaints of a surgical patient, his medical history, examination results, laboratory, instrumental and autopsy, other studies in order to recognize the condition or establish the presence or absence of the disease</p> <p>Be able to: collect and analyze complaints of a surgical patient, his medical history, examination results, laboratory, instrumental, autopsy and other studies in order to recognize the condition or</p>

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#### 4. Structure and contents of subject General Surgery, radiology

##### 4.1. Subject's structure

General workload of the subject totals 7 credit units, 252 hours.

№	Subject's (module's) sections and topics	Semester	Semester's weeks	Types of learning, including students' out-of-class work and workload (in hours)									Current progress monitoring types (by semester's weeks)							
				Work in class				Out-of-class work					Interview	Spoken test	Test marking	Check work marking	Paper marking	Marking of essays and other creative works	Course work (project)	other
				Total	Lecture	Practice	Laboratory work	Total	Preparing for class work	Papers, essays etc.	Course work (project)	Preparing for exams								
1.	<b>Section 1. General Surgery Issues</b>	5	1-16	59	12	44		29	29				1-16							
1.1.	Introduction to the subject	5	1	4		2		1	1				1		2					
1.2.	Aseptic	5	2	4	2	2		0,5	0,5				2							
	Aseptic	5	2	2		2		0,5	0,5				2							
1.3.	Antiseptic	5	3	2		2		1	1				3		4	3				
1.4.	Diagnosics of surgical patients	5	4	4	2	2		6	6				4			4				
	Diagnosics of surgical patients	5	4	2		2		0,5	0,5				4				4			
1.5.	Blood transfusion and its components	5	5	2		2		2	2				5		6					
	Blood transfusion and its components	5	6	4	2	2		0,5	0,5				6				6			
1.6.	Blood clotting disorders in surgical patients and methods for their correction	5	6	2		2		2	2				6			6				
1.7.	Bleeding	5	7	2		2		2	2				7		7					
	Bleeding	5	8	4	2	2		0,5	0,5				8				8			
1.8.	Nutrition of surgical patients	5	8	2		2		2	2				8		8					
1.9.	Endogenous intoxication in surgery and	5	9	2		2		2	2				9		9					

	the principles of its correction																		
	Endogenous intoxication in surgery and the principles of its correction	5	10	2		2		0,5	0,5				10			10			
1.10	Non-surgical surgical technique: desmurgy; punctures, injections and infusions	5	10	4	2	2		2	2				10		10		10		
1.11	Non-surgical surgical technique: drainage and plugging of wounds and body cavities, drainage of hollow organs	5	11	2		2		1	1				11		11		11		
1.12	Outpatientsurgery	5	12	2		2		1	1				12		12				
	Outpatientsurgery	5	12	2		2		0,5	0,5				12				12		
1.13	Stationarysurgery: preoperativeperiod	5	13	2		2		1	1				13		13				
1.14	Stationary surgery: the period of operation	5	14	2		2		1	1				14		14				
1.15	Stationary surgery: the postoperative period	5	14	2		2		1	1				14						
	Stationary surgery: the postoperative period	5	15	2		2		0,5	0,5				15		15				
2.	<b>Section 2. General questions of anesthesiology and resuscitation</b>	<b>5</b>	<b>16-19</b>	<b>20</b>	<b>7</b>	<b>13</b>		<b>3</b>	<b>3</b>				<b>16-19</b>						
2.1.	Pain and pain relief: pain syndrome, local anesthesia	5	16	4	2	2		0,5	0,5				16		16				
2.2	Pain and pain relief: general anesthesia	5	16	2		2		0,5	0,5				16		16				
	Pain and pain relief: general anesthesia	5	17	4	2	2		0,5	0,5				17				17		
2.3.	Water-electrolyte imbalance in surgical patients and methods for their correction	5	18	2		2		0,5	0,5				18		18				
2.4	Critical disorders of life in surgical patients	5	18	4	2	2		0,5	0,5				18				18		
	Critical disorders of life in surgical patients	5	19	4	1	3		0,5	0,5				19		19		19		
3.	<b>Section 3. Basics of purulent-septic surgery</b>	<b>6</b>	<b>1-8</b>	<b>28</b>	<b>6</b>	<b>24</b>		<b>6</b>	<b>6</b>				<b>1-8</b>						
3.1.	Common issues of acute surgical	6	1	4	2	2		0,5	0,5				1				1		

	infection																		
3.2.	Purulent diseases of the skin and subcutaneous tissue	6	1	2		2		0,5	0,5				1				1		
3.3	Purulent diseases of cellular tissue spaces	6	2	2		2		0,5	0,5				2			2			
3.4	Purulent diseases of the glandular organs, purulent diseases of the serous cavities	6	2	2		2		0,5	0,5				2		2				
	Purulent diseases of the glandular organs, purulent diseases of the serous cavities	6	3	2		2		0,5	0,5				3			3			
3.5	Purulent diseases of the hand and foot	6	3	2		2		0,5	0,5				3		3				
3.6	Purulent diseases of bones, joints and mucous bags	6	4	2		2		0,5	0,5				4		4		4		
	Purulent diseases of bones, joints and mucous bags	6	4	2		2		0,5	0,5				4						
3.7	Surgical sepsis	6	5	4	2	2		0,5	0,5				5			5			
	Surgical sepsis	6	5	2		2		0,5	0,5				5						
3.8	Specific surgical infection	6	6	4	2	2		0,5	0,5				6		6				
	Specific surgical infection	6	6	2		2		0,5	0,5				6			6			
4.	<b>Section 4. Basics of Surgery</b>	<b>6</b>	<b>7-10</b>	<b>22</b>	<b>6</b>	<b>16</b>		<b>4</b>	<b>4</b>				<b>7-10</b>						
4.1	General Surgery Issues	6	7	4	2	2		0,5	0,5				7				7		
4.2	Head injuries, chest injuries	6	7	2		2		0,5	0,5				7			7			
	Head injuries, chest injuries	6	8	4	2	2		0,5	0,5				8						
4.3	Abdominal trauma	6	8	2		2		0,5	0,5				8			8			
	Abdominal trauma	6	9	2		2		0,5	0,5				9				9		
4.4	Damage to soft tissues, tendons and joints, fractures and dislocations	6	9	2		2		0,5	0,5				9			9			
	Damage to soft tissues, tendons and joints, fractures and dislocations	6	10	4	2	2		0,5	0,5				10		10		10		
4.5	Thermal damage	6	10	2		2		0,5	0,5				10				10		
5.	<b>Section 5. Specific questions of surgery</b>	<b>6</b>	<b>11-15</b>	<b>26</b>	<b>6</b>	<b>20</b>		<b>5</b>	<b>5</b>				<b>11-15</b>						
5.1	Fundamentals of surgery for disorders of	6	11	2		2		0,5	0,5				11				11		

	regional blood circulation: disorders of the arterial blood flow, disorders of the venous circulation																		
	Fundamentals of surgery for disorders of regional blood circulation: disorders of the arterial blood flow, disorders of the venous circulation	6	11	2		2		0,5	0,5				11						
5.2	Fundamentals of surgery for disorders of regional blood circulation: disorders of lymph circulation; necrosis	6	12	2		2		0,5	0,5				12		12				
	Fundamentals of surgery for disorders of regional blood circulation: disorders of lymph circulation; necrosis	6	12	2		2		0,5	0,5				12			12			
5.3	Basics of Surgical Oncology	6	13	4	2	2		0,5	0,5				13		13				
	Basics of Surgical Oncology	6	13	2		2		0,5	0,5				13						
5.4	Basics of Plastic Surgery and Transplantology	6	14	2		2		0,5	0,5				14						
5.5	Basics of Surgery for Parasitic Diseases	6	14	4	2	2		0,5	0,5				14						
	Basics of Surgery for Parasitic Diseases	6	15	2		2		0,5	0,5				15			15			
5.6	Basics of malformations surgery	6	15	4	2	2		0,5	0,5				15						
6.	<b>Section 6. Radiology</b>	<b>6</b>	<b>16-18</b>	<b>12</b>	<b>0</b>	<b>12</b>		<b>3</b>	<b>3</b>				<b>16-18</b>						
6.1	Fundamentals of radiology in surgery	6	16	2		2		0,5	0,5				16						
6.2	Angiography	6	16	2		2		0,5	0,5				16		16				
6.3	The role of ultrasound diagnostics, computed and magnetic resonance imaging in surgery	6	17	2		2		0,5	0,5				17			17			
	The role of ultrasound diagnostics, computed and magnetic resonance imaging in surgery	6	17	2		2		0,5	0,5				17				17		
6.4	X-ray and radioisotope diagnostic methods in surgery	6	18	2		2		0,5	0,5				18	18		18			
	X-ray and radioisotope diagnostic	6	18	2		2		0,5	0,5				18						

	methods in surgery																				
	Course work (project)	5																			
	<i>Preparing for examination</i>	6										36									
	General workload, in hours			252	37	129		86				36	Interim attestation								
													Type	Semester							
													Test	5							
													Exam	6							

## 4.2. Subject's contents

Section 1. General issues of surgery.

### 1.1 Introduction to the subject

Surgery as a part of medicine. The main types of surgical pathology: damage, acquired and congenital diseases. Variety and ongoing differentiation of surgical specialties.

Surgery of the Ancient World and the Middle Ages - surgery of injuries and external diseases. The discovery of surgical anesthesia, antiseptics and asepsis as a fundamentally new stage in the development of surgery. Formation of scientific surgery based on the fundamental discoveries of the natural sciences. The history of Russian surgery, its place and relationships with leading surgical schools in the world. The main surgical school of the university.

Modern surgery as a dynamic, scientifically based part of medicine. Modern medical specialty surgical profile. The role and place of surgery in modern medicine.

Surgical literature. Globalization of information exchange in modern surgery: national and international societies of surgeons, congresses, symposia. The use of surgical methods in other medical specialties. Integrative trends in modern medicine. Surgery and therapy as the parts of medicine based on the general theoretical foundations of natural science. Surgery learning system.

Organization of planned and emergency surgical care. Surgical departments of polyclinics. General surgical hospital. Specialized surgical hospitals. Surgical research institutions. The system of rehabilitation of surgical patients. Juridical bases of surgical activity. Surgical documentation. Outpatient and inpatient card.

The concept of deontology. Deontology as a necessary and mandatory element of surgical activity. Moral and general culture of the doctor. Medical ethics, medical thinking and new medical technologies. Medical errors in surgery. Iatrogenic pathology in surgery.

### 1.2 Asepsis

Types and prevalence of surgical infection. Sources and ways of spreading surgical infection. Endogenous pathways of microbial contamination. Exogenous pathways of microbial contamination: contact (direct and indirect), air, implant. Nosocomial (hospital) infection in a surgical hospital.

The concept of asepsis. Organizational forms of asepsis. Layout and principles of operation of the surgical hospital. Fighting microflora on the paths of airborne contamination. Prevention of contact and implantation microbial contamination.

Sterilization of operating clothing, underwear, surgical gloves, dressing and suture material, surgical instruments, drainages. Use of disposable material and tools. Sterilization with ionizing, ultraviolet, ultrasonic radiation. Modern means and methods of chemical sterilization and disinfection. Packaging and storage of sterile material. Sterility control. Special functional areas of the operating unit. Cleaning the operating room.

Asepsis of a surgeon, assistant, operations nurse and the surgical field. General rules, techniques and modern methods of processing hands before surgery. Preparation and processing of the surgical field. Wearing sterile clothes, dressing, wearing and changing surgical gloves. Rules of Work rules in asepsis.

### 1.3 Antiseptic

The concept of antiseptic. Types of antiseptics.

Primary and secondary surgical treatment of wounds, the principles and stages of implementation.

Drying, plugging, drainage of wounds and cavities, vacuum treatment, vacuum aspiration, pulsating liquid jet treatment, aspiration-washing method, ultraviolet irradiation, laser irradiation, ultrasonic cavitation, hyperbaric oxygenation, ozone therapy.

Ways to use various chemicals. Different types of local and general use of antiseptics. The main groups of antiseptics. Basics of rational antiseptic chemotherapy.

Types of biological antiseptics. Biological antiseptics. Indications for antibiotic therapy, the choice of antibacterial drug. The choice of doses and the method of administration of the antibacterial drug. Evaluation of the effectiveness of antibiotic therapy. Change of antibacterial drug during treatment. The duration of antibiotic therapy. Methods of influence on the immune forces of the body. Passive and active immunization in surgery. Immunocorrection and Immunostimulation. Principles of rational combination of various types of antiseptics.

#### **1.4 Examination of surgical patients**

Ascertainment of complaints of the patient and history of development of a disease. Accompanying illnesses, past diseases and operations. Tolerability of drugs. General clinical examination of the patient using the medical exam, thermometry, palpation, percussion and auscultation. Evaluation of local status. Planning of examination of the patient. The role of laboratory and instrumental methods in the examination of the surgical patient. Determining the scope of mandatory and additional methods. The need for specialists advice. The sequence of additional methods of examination. The specialty of patient's examination with severe injuries and acute surgical diseases. Determination of the need for urgent diagnostic and therapeutic measures. Preparing the patient for instrumental examination methods. Formation of educational history of the disease.

#### **1.5 Transfusion of blood and its components**

Immunological basis of transfusiology. Group system of red blood cells. Group system AB0 and group system Rh. Methods for determining blood groups using the AB0 and Rhesus systems. Modern rules of blood transfusion in groups of the AB0 system and the rhesus system. Responsibilities of a blood transfusion doctor. Compatibility tests of donor and recipient blood before transfusion. Blood transfusion documentation. Principles of modern component therapy. Blood transfusion reactions. Blood transfusion complications, their prevention, diagnosis, treatment principles. Massive transfusions, the concept of individual blood selection, autologous blood transfusion.

Organization of blood service and donation in Russia. Rules for screening blood donors and its components. Organization of diagnostic tests for HIV, syphilis, hepatitis and other infections transmitted by transmission. Modern methods of preparation, conservation of blood and its components.

#### **1.6. Blood coagulation disorders in surgical patients and methods for their correction**

Hemostasis system. Research methods. Diseases that cause changes in the blood coagulation system. The effect of surgery operation on hemostasis. Drugs affecting the hemostatic system. Prevention and treatment of thromboembolic complications. Prevention and treatment of hemorrhagic syndrome. DIC syndrome.

#### **1.7 Bleeding**

Bleeding classification. The protective and adaptive response of the body to acute blood loss. Clinical manifestations of external and internal bleeding. Clinical and instrumental diagnosis of bleeding. Assessment of the severity of blood loss and determination of its volume.

Methods of temporary and final stop of bleeding. Modern principles of treatment of blood loss. Hemodilution. Blood saving technologies in surgery. Autohemotransfusion. Reinfusion blood. Blood substitutes - oxygen carriers. Transportation of patients with bleeding.

#### **1.8 Nutrition of surgical patients**

Organization, order, sanitary supply of the surgical patient with general and bed rest. Feeding serious case patients.

Causes of malnutrition. Evaluation of nutrition. Enteral nutrition. Indications for catheter nutrition and methods of its implementation. Gastro and enterostomy. Indications for parenteral nutrition. Components of parenteral nutrition. Methods and techniques of parenteral nutrition.

### **1.9 Endogenous intoxication in surgery and the principles of its correction**

The concept of endogenous intoxication. The main types of endotoxemia in surgical patients. Endotoxemia, endotoxemia. Clinical and laboratory signs of endotoxemia. Criteria for the severity of endogenous intoxication. Principles of complex treatment of endogenous intoxication syndrome in a surgical clinic. Stimulation of natural detoxification, artificial detoxification, syndromic therapy. Surgical elimination of the source of intoxication.

### **1.10 Non-surgical surgical technique: desmurgy, puncture, injection and infusion**

The concept of bandage and dressing. The therapeutic value of dressings and modern basic bandages. Types of dressings: by appointment, by the method of fixation of the bandage material, by localization. Soft bandages, rules for dressings. Types of bandaging. Technique of applying soft dressings on different parts of the body. Elastic compression of the lower extremities. Requirements for the finished dressing. Special dressing tools used in modern medicine.

Equipment for punctures, injections and infusions. General method of punctures. Indications and contraindications. Prevention of complications of punctures. Pleural puncture. Puncture technique for pneumo- and hemothorax. Puncture of the pericardial cavity. Inside the heart injections of drugs. Abdominal puncture and laparocentesis. Puncture of the joints. Puncture of the sternum and other bones. Lumbar puncture. Puncture of hematomas of soft tissues and superficially open abscesses. Principles and features. Bladder puncture.

General methods of injection. Preparation of the instruments and the patient. Anatomical basis of the choice of injection sites. Intradermal injections. Subcutaneous injections. Intramuscular injections. Indications, equipment, possible complications. Catheterization of peripheral and central veins. Blood sampling from a vein. Technique of intravenous infusion and long-term infusions. Measurement of central venous pressure. The technique of intraosseous and intra-arterial infusion. Possible complications and their prevention.

### **1.11. Non-surgical surgical technique: drainage and plugging of wounds and body cavities, drainage of hollow organs**

Indications for use. Types of drains and tampons. Types of tubular drainage. Passive and active drainage. Equipment and tools for active aspiration.

Principles and techniques of wound drainage. Methods of flow-aspiration drainage of wounds. Vacuum drainage of wounds. Principles and technique of drainage of the chest cavity. Principles and technique of abdominal drainage. Drainage of the joints. Drainage with microirrigation for the introduction of drugs.

Indications for gastrointestinal and rectal probes. Probing of the esophagus, stomach, duodenum, small intestine and colon.

Bladder catheterization: indications, contraindications, equipment, technique. Long bladder catheterization, catheter care, prevention of complications.

Drainage of hollow organs with endoscopic equipment. Drainage through operative external fistula (gastrostomy, eynostomy, colostomy, epistostomy, etc.), care for them. Mistakes, complications and their prevention. Enemas: indications, contraindications, equipment. Patient preparation and enema technique. Types of enemas: emptying, laxative, flushing (siphon), medicinal. Features of their implementation. Gas removal from the colon.

### **1.12 Outpatient Surgery**

The structure of the surgical service clinics, trauma station. The volume of conservative and surgical surgical treatment. The main contingent of surgical outpatients. Organization and equipment of the surgical room. Ambulatory operating room - asepsis features. The order of outpatient admission of surgical patients. One day hospital. Surgical documentation in the clinic. Clinical examination of surgical patients. The procedure for hospitalization of planned and emergency patients. Surgical aspects of the clinical examination of the population.

### **1.13 Inpatient surgery: preoperative period**

Absolute, relative indications for surgery in elective and emergency surgery. The concept of contraindications to surgery. The degree of operational risk, ways to reduce it.

Preparing the patient for surgery. Objectives of preparation. Deontological training. Medical and physical preparation of the patient. The role of physical training in the prevention of postoperative infectious complications. Preparation of the oral cavity, preparation of the gastrointestinal tract, skin. The choice of anesthesia and preparation for it. Preparing for emergency operations. Juridical framework for the survey and surgical interventions.

#### **1.14 Inpatient surgery: the period of surgery**

The concept of surgery. Types of surgical operations: elective, emergency, radical and palliative. Types of operations: with removal of the pathological focus, restorative (reconstructive) and plastic surgery. The position of the patient on the operating table. Principles of choice of surgical access. Minimally invasive surgery. Stages of surgical operation.

The distribution of responsibilities between all participants in the operation during the anesthesia and operation. Monitoring the patient during surgical operation.

#### **1.15 Inpatient surgery: the postoperative period**

The organism's response to operative aggression. Respiratory disorders, cardiac activity, function of the gastrointestinal tract and urinary organs, thromboembolic complications. Their prevention, diagnosis and treatment. Clinical observation of the patient. Laboratory and functional diagnostic monitoring of the state of the main body systems. Mode and nutrition of the patient. Anesthesia. Prevention, diagnosis and treatment of wound complications: bleeding, suppuration, eventration. The concept of rehabilitation after surgical treatment. Ligation, suture removal, physiotherapy and physical therapy.

### **Section 2. General questions of anesthesiology and resuscitation.**

#### **2.1. Pain and pain relief: pain syndrome, local anesthesia**

Mechanisms and causes of pain. Characteristics of pain. Narcotic anesthesia. Indications, contraindications, documentation. Means and principles of drug treatment of pain syndrome. Types of local anesthesia; pharmacological (terminal, infiltration, conductor) and physical. Preparations for local anesthetic, the medication mechanism, the main characteristics. Technique of certain types of local anesthesia: indications, contraindications, methods of implementation, possible complications and ways to prevent them. Indications for use, types and techniques of Novocain blockades.

#### **2.2 Pain and pain relief: general anesthesia**

Anesthetic risk assessment. Preparing patients for anesthesia, premedication and its implementation. Components of general anesthesia. Methods of modern general anesthesia, stages of anesthesia. Standardized monitoring with assessment of oxygenation, ventilation, circulation and temperature. Complications of anesthesia and the immediate after-anesthetic period, their prevention and treatment. Types of anesthesia. Equipment and methods of inhalation anesthesia. Modern inhalation anesthetic agents, muscle relaxants. Their combined use for optimal synergistic effect.

#### **2.3 Water-electrolyte imbalance in surgical patients and methods for their correction**

Causes of water-electrolyte and acid-base disorders in surgical patients. Clinical and laboratory diagnostics. Indications, contraindications and methods of infusion therapy. Principles of infusion therapy, control over its implementation. Solutions for infusion therapy of water and electrolyte disorders. Infusion program. Basic and corrective infusion therapy. Dangers and complications of plasma-substituting solutions, first aid and treatment of these complications. Infusion therapy documentation.

#### **2.4 Critical impairment of life in surgical patients**

Objective methods for assessing the severity of the medical state. Types of disorders of the vital activity of the organism in surgical patients: acute respiratory failure, acute heart failure, acute renal and hepatic failure. Multiple organ dysfunction syndrome.

Types, symptoms and diagnosis of terminal conditions: preagony, agony, clinical death. Signs of biological death.

First aid for stopping breathing and blood circulation. Criteria for the effectiveness of recovery. Monitoring control systems. Indications for the termination of cardiopulmonary resuscitation,

Shock - types, pathogenesis, clinical presentation, diagnosis, phases and stages of shock. First, medical care. Comprehensive therapy, criteria for success of treatment.

### **Section 3. Basics of purulent-septic surgery**

#### **3.1. Common issues of acute surgical infection**

Clinical manifestations, laboratory diagnosis. Pathogens and conditions for the development of purulent infection in the body. Acute aerobic surgical infection. Acute anaerobic surgical infection. The concept of clostridial and non-clostridial anaerobic infection. Concept of mixed infection. Features of asepsis in purulent-septic surgery. Modern principles of prevention and treatment of pus diseases. General principles of treatment of pus diseases, rational antibacterial therapy, immunotherapy, enzyme therapy, detoxification, stimulating and restorative therapy. General principles of surgical techniques. Modern methods of treatment of purulent focus.

#### **3.2. Purulent diseases of the skin and subcutaneous tissue**

Types of purulent skin diseases: acne, osteofolliculitis, folliculitis, furuncle and furunculosis, carbuncle, hydradenitis, erysipelas, erysepeloid, wound pyoderma. Clinic, features of the course and treatment. Types of purulent-inflammatory diseases: abscess, phlegmon. Clinic, diagnosis, local and general treatment. Possible complications.

#### **3.3. Purulent diseases of cellular tissue spaces**

Phlegmon neck. Axillary and subpectoral phlegmon. Subfascial and intermuscular phlegmon of the extremities. Suppurative mediastinitis. Purulent paranephritis. Acute paraproctitis, rectal fistula. Causes, symptoms, diagnosis, principles of local and general treatment.

#### **3.4. Purulent diseases of the glandular organs, purulent diseases of the serous cavities**

Acute purulent mastitis. Symptomatology, prevention, treatment of acute lactation, postpartum mastitis.

Purulent parotid. Predisposing factors, clinical signs, methods of prevention and treatment. Purulent diseases of other glandular organs.

Peritonitis Classification. Etiology and pathogenesis. Symptomatology in diagnosis. Principles of treatment. First aid for acute surgical diseases of the abdominal cavity.

Acute purulent pleurisy on pleural empyema. Pericarditis, causes, symptoms, diagnosis and treatment.

#### **3.5. Purulent diseases of the hand and foot**

Classification. Types of felon. Purulent tendovaginitis. Features purulent inflammation of the hand. Principles of diagnosis and treatment. Diabetic foot. Clinical forms. Clinical and instrumental diagnostics. Principles of complex treatment.

#### **3.6. Purulent diseases of bones and joints and mucous bags**

Osteomyelitis. Classification. Etiology and pathogenesis. Clinical picture. Features instrumental in laboratory diagnostics. Symptoms of acute osteomyelitis. Chronic recurrent osteomyelitis. Diagnosis of various forms of osteomyelitis. Principles of general and local treatment of osteomyelitis. Purulent bursitis. Purulent arthritis. Causes, clinical picture, treatment principles.

#### **3.7. Surgical sepsis**

The concept of sepsis. Types of sepsis. Classification. Etiology and pathogenesis The idea of the entrance gate, the role of macro- and microorganisms in the development of sepsis. Clinical

manifestations of sepsis. Laboratory diagnosis of sepsis. Stages of sepsis: bacteremia, systemic inflammatory response syndrome, sepsis, severe sepsis, septic shock, multiple organ failure syndrome. Assessment of the severity of the condition of patients with sepsis using scoring systems. Principles of complex treatment.

### **3.8. Specific surgical infection**

The concept of a surgical specific infection. Classification. Tetanus, tuberculosis, anthrax, rabies, diphtheria wounds, actinomycosis, candidomycosis. Clinical. Laboratory and instrumental diagnostics. Principles of prevention and treatment.

Diagnosis and complex treatment of various forms of tuberculosis. Topical treatment of sinter abscesses and fistulas. Surgical forms of pulmonary tuberculosis. Tuberculous lymphadenitis. The clinical, diagnosis, complex therapy.

## **Section 4. Basics of Damage Surgery**

### **4.1. General issues of injury surgery, wounds**

Types of injuries and classification of injuries. The concept of isolated, multiple, concomitant injury and combined damage. Medical and social injury prevention. Complications and dangers of injury: immediate and late. General principles for the diagnosis of traumatic injuries. Assessment of the function of the central nervous system, respiration and blood circulation in case of severe injuries. Scales that determine the severity of the injury. General principles of organization of pre-hospital and inpatient trauma care.

Classification of wounds. Pathogenesis and phases of the wound process. Clinical features of various types of wounds. Types of wound healing. Principles of first aid for injuries. Primary surgical treatment of wounds, its types. Secondary surgical treatment. Closed wounds.

Infectious complications of wounds. Primary and secondary purulent wounds. General and local signs of suppuration of the wound. Treatment of purulent wounds, depending on the phase of the wound process. Modern principles of surgical treatment of purulent wounds. Radical surgical treatment of purulent wounds. Additional physical methods of wound treatment. Flow-suction system. Enzymotherapy, antibacterial therapy. Features of treatment in the phase of reparative regeneration. Physiotherapy treatment.

Ultrasound, laboratory and other methods of monitoring the course of the wound process. Prevention of postoperative wound suppuration.

### **4.2. Head injuries, chest injuries**

Classification. Assessment of the severity of the patient. The main dangers of head injuries. First aid for a head injury. Features of transportation of patients.

Classification. The concept of pneumothorax. Types of pneumothorax. The clinical picture and diagnosis of pneumothorax, especially the first aid in case of intense, valve and open pneumothorax. Principles of treatment. Hemothorax. Clinical manifestations of hemothorax. First aid for hemothorax. Features of transportation of patients with breast damage.

### **4.3. Abdominal trauma**

Classification. Clinical, laboratory and instrumental diagnosis of damage to the abdominal cavity and retroperitoneal space. Foreign bodies of the gastrointestinal tract. Tasks first aid. Principles of treatment.

### **4.4. Damage to soft tissues, tendons and joints, fractures and dislocations**

Closed soft tissue damage. Bruises, strains and ruptures, tremors and compression, crush syndrome. First aid and treatment of closed soft tissue injuries.

Classification, clinical picture. Fundamentals of X-ray. First aid. The basic principles of treatment: elimination of pain, reposition, immobilization, rehabilitation. Complications of traumatic fractures: pain shock, fat embolism, acute blood loss, the development of infection - and their prevention.

#### **4.5. Thermal damage**

Classification. Determination of the depth and area of burns. Prognosis of the disease. First aid for burns. Burn disease and course of phases. Principles of general and local treatment. Radiation and chemical burns. Local manifestations. First aid. Features of first aid for chemical burns of the skin, oral cavity, esophagus, stomach.

Injuries from cooling. Types of general and local cold injury. Classification. The clinical picture, first aid and further treatment for frostbite in the pre-reactive period. General and local treatment of frostbite during the reactive period, depending on the degree of damage. General and complex therapy for victims of cold injury.

Electric shock. Local and general effect of electric current. First aid for electric shock. Features of further examination and treatment.

### **Section 5. Specific questions of surgery**

#### **5.1. Fundamentals of surgery for disorders of regional blood circulation: disorders of the arterial blood flow, disorders of the venous circulation**

Acute and chronic. The main causes of impaired arterial blood flow. General principles of clinical and instrumental diagnosis. The degree of acute ischemia and the stage of chronic arterial insufficiency. Surgical and conservative treatment. First aid for acute disorders of the arterial circulation. Principles of complex treatment.

Acute venous thrombosis and chronic venous insufficiency. General principles of clinical and instrumental diagnosis. Prevention of complications. Principles of complex treatment.

#### **5.2. Fundamentals of surgery for disorders of regional blood circulation: disorders of lymph circulation; necrosis**

Lymphostasis. Main reasons. Principles of diagnosis and treatment.

Clinical forms. Causes of occurrence. Gangrene, pressure ulcers, trophic ulcers. The dynamics of the development of bedsores. Prevention and treatment guidelines.

#### **5.3. Basics of Surgical Oncology**

General characteristics of tumors. Benign and malignant neoplasms. Ways of metastasis. Clinical classification of tumors. Clinical diagnosis. Immunomarkers of tumors. Special diagnostic methods. Morphological verification of the diagnosis. Determining the stage of cancer. Principles of surgical treatment of tumors. Basics of complex therapy of malignant tumors. Principles of organization of oncological service.

#### **5.4. Basics of Plastic Surgery and Transplantology**

The concept of plastic surgery. Autoplasty, alloplasty and xenoplasty. Plastic tissue and organs by various methods. Place of plastic methods in surgery. The use of synthetic materials. Replantation of limbs and the concept of microsurgical technique.

The concept of organ and tissue transplantation. Principles of clinical transplantology. Prostheses and artificial organs.

#### **5.5. Basics of Parasitic Disease Surgery**

Concepts of surgical parasitic diseases. Echinococcosis. Alveococcosis. Ascariasis. Opisthorchiasis. Causes, diagnosis, surgical treatment. The concept of tropical parasitic surgical diseases.

#### **5.6. Basics of malformation surgery**

The concept of congenital pathology. Congenital malformations of organs and tissues. Diagnostics. Principles of surgical treatment.

### **Section 6. Radiology**

### **6.1. Fundamentals of Radiology in Surgery**

The nature and basic properties of x-rays. Maximum permissible dose during irradiation. Principles of X-ray protection for X-ray staff and patients. The main methods of X-ray. Positive and negative images.

### **6.2. Angiography**

Angiography method, types, technique of performance, indications and contraindications. Complications after angiography.

### **6.3. The role of ultrasound diagnostics, computed and magnetic resonance imaging in surgery**

Ultrasound method, based and apparatus. Piezoelectric effect. Types of sensors for ultrasound. Preparing patients for ultrasound. Evaluation of the results of ultrasound. The advantages of ultrasound compared with other diagnostic methods. The disadvantages of ultrasound.

CT method, the history of the appearance of CT. Varieties of CT. Method, indications for its use. The benefits of CT. How the image is formed at CT.

MRI: history of development, basis of the method. Nuclear magnetic resonance. The disadvantages of MRI. Indications and contraindications for MRI.

### **6.4. X-ray and radioisotope diagnostic methods in surgery**

X-ray and radiography: advantages and disadvantages. Groups of contrast agents for radiological studies. The method of bronchography, indications and technique.

## **4.3 Other types of classroom activities**

1. Supervision of patients.
2. Carrying out diagnostic activities (participation in surgical patient dressings, evaluation of the results of ultrasound, CT, MRI, x-ray, etc.).
3. Mastering practical skills.

## **5. Educational technologies**

1. Lessons using tutorials and visual material.
2. Patients' treatment
3. Computer testing.
4. Multimedia lectures.
5. Solving situational problems.
6. Independent work with literature.

### **5.1. Active learning methods**

Case Study Method (Case Method)

1st term

Endogenous intoxication in surgery and the principles of its correction  
Critical impairment of life in surgical patients

2nd term

Surgical sepsis  
Basics of Surgical Oncology

## Solving situational problems

### 1st term

Asepsis. Antiseptic. Transfusion of blood and its components. Non-surgical surgical technique: desmurgy; puncture, injection and infusion. Pain and pain relief: general anesthesia. Critical disability in surgical patients.

### 2nd term

Purulent diseases of the skin and subcutaneous tissue. Purulent diseases of bones, joints and mucous bags. Specific surgical infection. General issues of surgery injuries, wounds. Basics of surgery for parasitic diseases.

## 5.2 Educational technologies in students with disabilities and disabled

In order to implement an individual approach to teaching students who carry out the educational process on their own trajectory within the individual curriculum, the study of this discipline is based on the following possibilities: ensuring extracurricular work with students, including in an electronic educational environment using appropriate software, distance learning, possibilities of Internet resources, individual consultations, etc.

## 6. Educational and methodological support of students' out-of-class work.

Assessment means for current progress monitoring, interim attestation of subject mastering results.

### 6.1. Students' independent work plan

Week №	Topic	Out-of-classwork type	Task	Recommended literature	Amount of hours
1	Introduction to the subject	Preparation for classroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	1
2	Aseptic	Preparation for classroom training	To study the theoretical material on the topic of employment	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. :	0,5

			ent. Answer questions for self- control	ГЭОТАР- Медиа, 2015. - 220 с. - ISBN 978- 5-9704-3491- 8	
2	Aseptic	Preparationforclassroom training	To study the theoretica l material on the topic of employ ment. Answer questions for self- control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - М. : ГЭОТАР- Медиа, 2015. - 220 с. - ISBN 978- 5-9704-3491- 8	0,5
3	Antiseptic	Preparationforclassroom training	To study the theoretica l material on the topic of employ ment. Answer questions for self- control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - М. : ГЭОТАР- Медиа, 2015. - 220 с. - ISBN 978- 5-9704-3491- 8	1
4	Diagnosticsofsurgicalp atients	Preparationforclassroom training	To study the theoretica l material on the topic of employ ment. Answer questions for self- control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - М. : ГЭОТАР- Медиа, 2015. - 220 с. - ISBN 978- 5-9704-3491- 8	6
4	Diagnosticsofsurgicalp atients	Preparationforclassroom training	To study the theoretica l material on the topic of employ ment. Answer	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - М. : ГЭОТАР- Медиа,	0,5

			questions for self-control	2015. - 220 c. - ISBN 978-5-9704-3491-8	
5	Blood transfusion and its components	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 c. - ISBN 978-5-9704-3491-8	2
6	Blood transfusion and its components	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 c. - ISBN 978-5-9704-3491-8	0,5
6	Blood clotting disorders in surgical patients and methods for their correction	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 c. - ISBN 978-5-9704-3491-8	2
7	Bleeding	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 c. - ISBN 978-	2

			control	5-9704-3491-8	
8	Bleeding	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	0,5
8	Nutritionofsurgicalpatients	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	2
9	Endogenous intoxication in surgery and the principles of its correction	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	2
10	Endogenous intoxication in surgery and the principles of its correction	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	0,5

10	Non-surgical surgical technique: desmurgy; punctures, injections and infusions	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	2
11	Non-surgical surgical technique: drainage and plugging of wounds and body cavities, drainage of hollow organs	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	1
12	Outpatientsurgery	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	1
12	Outpatientsurgery	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	0,5
13	Stationarysurgery: preoperativeperiod	Preparationforclassroom training	To study the	Gostishchev V.K.,	1

			theoretical material on the topic of employment. Answer questions for self-control	General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	
14	Stationary surgery: the period of operation	Preparation for classroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	1
14	Stationary surgery: the postoperative period	Preparation for classroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	1
15	Stationary surgery: the postoperative period	Preparation for classroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	0,5
16	Pain and pain relief: pain syndrome, local anesthesia	Preparation for classroom training	To study the theoretical material	Gostishchev V.K., General surgery : The	0,5

			on the topic of employment. Answer questions for self-control	manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	
16	Pain and pain relief: general anesthesia	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	0,5
17	Pain and pain relief: general anesthesia	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	0,5
18	Water-electrolyte imbalance in surgical patients and methods for their correction	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	0,5
18	Critical disorders of life in surgical patients	Preparationforclassroom training	To study the theoretical material on the topic of	Gostishchev V.K., General surgery : The manual / Gostishchev	0,5

			employment. Answer questions for self-control	V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	
19	Critical disorders of life in surgical patients	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	0,5
1	Common issues of acute surgical infection	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	0,5
1	Purulent diseases of the skin and subcutaneous tissue	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	0,5
2	Purulent diseases of cellular tissue spaces	Preparationforclassroom training	To study the theoretical material on the topic of employment	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. :	0,5

			ent. Answer questions for self- control	ГЭОТАР- Медиа, 2015. - 220 с. - ISBN 978- 5-9704-3491- 8	
2	Purulent diseases of the glandular organs, purulent diseases of the serous cavities	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - М. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	0,5
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4	Purulent diseases of bones, joints and mucous bags	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - М. : ГЭОТАР-Медиа,	0,5

			questions for self-control	2015. - 220 c. - ISBN 978-5-9704-3491-8	
4	Purulent diseases of bones, joints and mucous bags	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 c. - ISBN 978-5-9704-3491-8	0,5
5	Surgicalsepsis	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 c. - ISBN 978-5-9704-3491-8	0,5
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6	Specificsurgicalinfection	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 c. - ISBN 978-	0,5

			control	5-9704-3491-8	
6	Specific surgical infection	Preparation for classroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	0,5
7	General Surgery Issues	Preparation for classroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	0,5
7	Head injuries, chest injuries	Preparation for classroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	0,5
8	Head injuries, chest injuries	Preparation for classroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	0,5

8	Abdominaltrauma	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	0,5
9	Abdominaltrauma	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	0,5
9	Damage to soft tissues, tendons and joints, fractures and dislocations	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	0,5
10	Damage to soft tissues, tendons and joints, fractures and dislocations	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	0,5
10	Thermal damage	Preparationforclassroom training	To study the	Gostishchev V.K.,	0,5

			theoretical material on the topic of employment. Answer questions for self-control	General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	
11	Fundamentals of surgery for disorders of regional blood circulation: disorders of the arterial blood flow, disorders of the venous circulation	Preparation for classroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	0,5
11	Fundamentals of surgery for disorders of regional blood circulation: disorders of the arterial blood flow, disorders of the venous circulation	Preparation for classroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	0,5
12	Fundamentals of surgery for disorders of regional blood circulation: disorders of lymph circulation; necrosis	Preparation for classroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	0,5
12	Fundamentals of surgery for disorders of regional blood circulation: disorders	Preparation for classroom training	To study the theoretical material	Gostishchev V.K., General surgery : The	0,5

	of lymph circulation; necrosis		on the topic of employ ent. Answer questions for self- control	manual / Gostishchev V.K. - M. : ГЭОТАР- Медиа, 2015. - 220 с. - ISBN 978- 5-9704-3491- 8	
13	Basics of Surgical Oncology	Preparation for classroom training	To study the theoretical material on the topic of employ ent. Answer questions for self- control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР- Медиа, 2015. - 220 с. - ISBN 978- 5-9704-3491- 8	0,5
13	Basics of Surgical Oncology	Preparation for classroom training	To study the theoretical material on the topic of employ ent. Answer questions for self- control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР- Медиа, 2015. - 220 с. - ISBN 978- 5-9704-3491- 8	0,5
14	Basics of Plastic Surgery and Transplantology	Preparation for classroom training	To study the theoretical material on the topic of employ ent. Answer questions for self- control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР- Медиа, 2015. - 220 с. - ISBN 978- 5-9704-3491- 8	0,5
14	Basics of Surgery for Parasitic Diseases	Preparation for classroom training	To study the theoretical material on the topic of	Gostishchev V.K., General surgery : The manual / Gostishchev	0,5

			employment. Answer questions for self-control	V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	
15	Basics of Surgery for Parasitic Diseases	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	0,5
15	Basics of malformation surgery	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	0,5
16	Fundamentals of radiology in surgery	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	0,5
16	Angiography	Preparationforclassroom training	To study the theoretical material on the topic of employment.	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-	0,5

			Answer questions for self-control	Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	
17	The role of ultrasound diagnostics, computed and magnetic resonance imaging in surgery	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	0,5
17	The role of ultrasound diagnostics, computed and magnetic resonance imaging in surgery	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	0,5
18	X-ray and radioisotope diagnostic methods in surgery	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions for self-control	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8	0,5
18	X-ray and radioisotope diagnostic methods in surgery	Preparationforclassroom training	To study the theoretical material on the topic of employment. Answer questions	Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с.	0,5

			for self-control	- ISBN 978-5-9704-3491-8	
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## 6.2. Instructional guidelines on students' out-of-class work organization

1. Preparation for classroom training.
2. Patients' treatment, the development of practical skills (mastering the methods of objective research, palpation, percussion, auscultation, reading radiographs).

## 6.3. Materials to carry out current monitoring and interim attestation of students' knowledge *Competence mastering assessment*

№	Assessment type	Monitored topics (sections)	Competences including under assessment components
1	Test validation	Sections 1, 2, 3, 4, 5, 6	PC-5, PC-6
2	Interview	Sections 1, 2, 3, 4, 5, 6	PC-5, PC-6
3	Practical skills test	Sections 1, 2, 3, 4, 5, 6	PC-5, PC-6
4	Solving situational problems	Sections 1, 2, 3, 4, 5, 6	PC-5, PC-6

### Approximate test sample:

#### 1. What classification fully reflects various manifestations of bleeding?

- 1) Anatomical, by reason of occurrence, according to clinical manifestations, taking into account the time of occurrence;
- 2) Anatomical, physiological, taking into account the time of appearance, due to the appearance;
- 3) By reason of appearance, anatomical, physiological, according to clinical manifestations, taking into account the time of appearance;
- 4) Anatomical, physiological, clinical, taking into account the time of appearance;
- 5) Etiological, anatomical, physiological, clinical.

#### 2. What bleedings are distinguished by anatomical classification?

- 1) Primary, secondary.
- 2) Hidden inside, hidden outside.
- 3) Arterial, venous, capillary, parenchymatous.
- 4) Early, late.
- 5) External, internal.

#### 3. If the transplanted tissue retains its connection with the original (maternal) site, then such plastic is called:

- 1) free;
- 2) not free (bound).

#### 4. Can an auto-, allo- or xenot-fabric be used with free plastics?

- 1) yes;
- 2) no.

#### 5. The indications for plastic migrating stem of the flap is everything except:

- 1) hand defect;
- 2) a defect in the forearm;
- 3) hip defect;
- 4) shin defect;
- 5) foot defect.

6. Can a bridge flap, formed from the skin of the anterior abdominal wall, be used to correct a skin defect on a finger or hand?

- 1) yes;
- 2) no.

#### Test evaluation criteria

- “Excellent” (“5”) - 91% or more correct answers to test items.  
“Good” (“4”) - 81-90% of correct answers to test items.  
“Satisfactory” (“3”) - 71-80% of correct answers to test items.  
“Unsatisfactory” (“2”) - 70% or less correct answers to test items.

#### *Sample questions for current knowledge monitoring*

#### **Sample practical skills questions**

1. Perform catheterization of the bladder with acute urinary retention.
2. Give a conclusion on the X-ray image number 5 and number 6.
3. Give a conclusion on the radiological image number 1 and number 2.
4. Put on the Hippocratic cap.
5. Select the necessary material and tools for the implementation of intramuscular injection. Share and show on a mannequin.
6. Lumbar puncture.
7. Apply a bandage on the truncated limb (stump)
8. Apply a spica bandage.
9. Do a superficial palpation of the abdomen.
10. Give a conclusion on the radiological image number 19 and number 20.
11. Give the conclusion on the radiological image number 9 and number 10.
12. Assemble the necessary tools and equipment for bladder catheterization. Explain a male bladder catheterization technique.
13. Put an elastic bandage on the lower limb. The purpose of bandaging.
14. Perform a test for individual blood compatibility.
15. Assemble a system for drip transfusion, blood substitutes. Technique and rules of. Conducting a biological sample during a blood transfusion.
16. Provide medical assistance for the animal, snake, and insect bites.
17. Assemble a system for blood transfusion. Technique and rules.
18. Give a conclusion on the radiological image number 11 and number 12.
19. Puncture of the bladder. Abdominal puncture and laparocentesis.
20. Apply Velpeau's bandage.

#### Criteria for assessing practical skills

- “Excellent” (“5”) - 91% or more correct answers to tasks.  
“Good” (“4”) - 81-90% of correct answers to tasks.  
“Satisfactory” (“3”) - 71-80% of correct answers to tasks.  
“Unsatisfactory” (“2”) - 70% or less correct answers to tasks.

#### **Sample Exam Questions**

1. Surgery as a branch of medicine, in which the main treatment method is surgical intervention. Modern surgery is a dynamic, scientifically based area of medicine. The role and place of surgery in modern medicine.
2. The main types of surgical pathology: injury, acquired and congenital diseases. The variety and ongoing differentiation of specialties.

3. Surgery of the Ancient World and the Middle Ages - surgery of injuries and external diseases. The discovery of surgical anesthesia, antiseptics and asepsis as a fundamentally new stage in the development of surgery. Formation of scientific surgery based on the fundamental discoveries of the natural sciences.
4. History of Russian surgery, its place, and relationship with leading surgical schools in the world. The main surgical schools of the university.
5. Surgical literature. Globalization of information exchange in modern surgery: national and international societies of surgeons, conferences, congresses, symposiums.
6. The use of surgical methods in other medical specialties. Integrative trends in modern medicine.
7. Surgery and therapy are areas of medicine based on the general theoretical foundations of natural science. Surgery training system.
8. Organization of planned and emergency surgical care. Surgical departments of polyclinics.
9. General surgical hospital. Specialized surgical hospitals. Surgical research institutions. The system of rehabilitation of surgical patients.
10. Legal bases of surgical activity. Surgical documentation. Outpatient and inpatient cards.
11. The concept of deontology. Deontology as a necessary and indispensable instrument of surgical activity. Moral and general culture of the doctor. Medical ethics, medical thinking, and new medical technologies.
12. Medical mistakes in surgery. Iatrogenic pathology in surgery.
13. The concept of nursing care in surgery. Practical deontology of general care for surgical patients.
14. The concept of nosocomial infections.
15. Hand sanitization and body hygiene. Requirements for clothes. Rules of wearing clothes by staff.
16. Bacterial carriers among medical personnel, identification, sanitation. Laboratory tests and vaccinations conducted by staff. Rules for working with biological materials.
17. Clinical hygiene for a surgical patient with general regime and bed rest at various stages of inpatient treatment. Changing clothing and bed linen.
18. Control and sanitary processing of personal belongings of the patient. Organization, procedure and hygienic control of patient visits. Sanitary preparation of the patient for a surgery.
19. Prevention of complications and skin, eyes, ears, nose and mouth care.
20. General characteristics of care for operated patients. Types of regimes.

### ***Evaluation Criteria for an Exam Interview***

“**Excellent**” - the answer is complete, literate, logical; the student is fluent in medical terminology; Answers to additional questions are clear and concise.

“**Good**” - the answer is not logical enough with single errors in details; answers to additional questions are **correct, but not clear**.

“**Satisfactory**” - the answer is not enough literate, incomplete, with errors in details; answers to additional questions are not clear enough, with errors in details.

“**Unsatisfactory**” - the answer is illiterate, incomplete, with gross errors; answers to additional questions are incorrect

### ***Sample cases***

#### Case №1

A 43-year-old patient was taken to the thoracic department with pain in the left chest cavity, body temperature raised up to 38 ° C, shortness of breath, cough. On chest radiography there is a darkening with a horizontal level. The patient is diagnosed with empyema of the pleural cavity on the right side.

1. What type of antiseptics should be used?
2. Name the types of the drainage.
3. Characteristics of the drainage of the pleural cavity.
4. Prevention of possible complications.
5. Characteristics of modern systems for pleural drainage.

#### Case №2

An emergency surgery was performed on the patient: mastectomy on the left side because of the gangrene of the breast, complicated by system-inflammatory reaction.

1. What types of antiseptics can be used in the treatment of this patient?
2. What is a mechanical antiseptic?
3. Characteristics of drainage in this pathology.
4. What kind of direct-acting biological antiseptics can be used in this case?
5. How can you prevent possible complications when using antibiotic therapy?

### Case №3

A 57-year-old patient turned to a first-aid station with a wound in the shoulder, obtained two hours ago with glass while manufacturing. Examination revealed that the patient has a cut wound of the middle third of the left shoulder, with uneven edges, 4x0.5 cm in size, moderately bleeding, the perifocal skin without edema and hyperemia. Regional lymph nodes are not palpable.

1. What type of antiseptic should you apply?
2. List the stages of primary surgical treatment of wounds.
3. What type of drainage would you use?
4. Is stitching possible in this situation?
5. What type of antiseptics is a tetanus toxoid injection?

### Criteria for evaluating the solution of situational problems

“Excellent” - the answer is complete, literate, logical; the student is fluent in medical terminology.

“Good” - the answer is not logical enough with single errors in details; there are some mistakes in medical terminology.

“Satisfactory” - the answer is not enough literate, incomplete, with errors in details; there are errors in medical terminology.

“Unsatisfactory” - the answer is illiterate, incomplete, with bad errors; the student demonstrates ignorance of medical terminology.

### Sample Course work (project) Questions

1. Non-inhalation anesthesia. Its types, prevention of complications
2. Local infiltration anesthesia according to A.V. Vishnevsky. Indications and technique
3. Surgical deontology
4. Organizational forms of ensuring asepsis in a surgical hospital
5. Mechanical antiseptic. Primary wound surgery
6. Physical antiseptic. Modern methods
7. Chemical antiseptics. Classification of chemical antiseptics
8. Biological antiseptic. Classification of biological antiseptics
9. Methods of superficial and deep interstitial antiseptics, their advantages and disadvantages
10. Asepsis. Sources of surgical infection. Ways of infection in the wound.
11. Sterilization of bandages and surgical linen. sterility control methods.
12. Sterilization of surgical instruments. Methods of control for sterility.
13. Types of suture material. Sterilization of silk, lavsan, catgut
14. Preparation of the surgical field. Traditional and modern methods of sanitizing the surgical field
15. Hand care. Methods for treating the surgeon's hands (Spasokokotsky-Kochergin, with C4 solution, chlorhexidine, cerigel, demine, disanine).
16. Types of local anesthesia. Indications and benefits. limitations.
17. Preparing the patient for anesthesia. Predication
18. Inhalation anesthesia. Stages of ether anesthesia. Preparing the patient for anesthesia. Prevention of complications.

### Evaluation Criteria for an Course work (project)

“Excellent” - the answer is complete, literate, logical; the student is fluent in medical terminology;

Answers to additional questions are clear and concise.

**“Good”** - the answer is not logical enough with single errors in details; answers to additional questions are **correct, but not clear**.

**“Satisfactory”** - the answer is not enough literate, incomplete, with errors in details; answers to additional questions are not clear enough, with errors in details.

**“Unsatisfactory”** - the answer is illiterate, incomplete, with gross errors; answers to additional questions are incorrect

## 7. Educational, methodological and informational means provided for subject C 1.1.41. General Surgery, radiology

### a) basic literature:

Gostishchev V.K., General surgery : The manual / Gostishchev V.K. - M. : ГЭОТАР-Медиа, 2015. - 220 с. - ISBN 978-5-9704-3491-8  
<http://www.studmedlib.ru/book/ISBN9785970434918.html>

### б) additional literature:

1. Sun, R. Imaging For Surgical Disease / Ed.: 1st ed. Philadelphia :Wolters Kluwer Health. 2013

<http://web.a.ebscohost.com/ehost/detail/detail?vid=0&sid=d9db3a25-9a28-4a86-9254-a1fc9edd1f70%40sessionmgr4007&bdata=JnNpdGU9ZWZWhvc3QtbGI2ZQ%3d%3d#db=nlebk&AN=1473032>

2. Tulloh, B. Foundations of Operative Surgery : An Introduction to Surgical Techniques / Oxford : OUP Oxford. 2008

<http://web.a.ebscohost.com/ehost/detail/detail?vid=0&sid=04a289d5-8a0a-4198-9737-bb2c2729a20c%40sdc-v-sessmgr03&bdata=JnNpdGU9ZWZWhvc3QtbGI2ZQ%3d%3d#AN=467567&db=nlebk>

3. Singh-Radcliff, N. Pharmacology in Anesthesia Practice / New York : Oxford University Press. 2013

<http://web.a.ebscohost.com/ehost/detail/detail?vid=0&sid=055dbcf3-ce82-46fa-a245-876549ed198f%40sdc-v-sessmgr01&bdata=JnNpdGU9ZWZWhvc3QtbGI2ZQ%3d%3d#AN=603930&db=nlebk>

4. Manipal Manual of Surgery/ editors K RajgopalShenoy, AnithaShenoy (Nileshwar).- 4th ed., 1196 p.

### c) Software and Internet resources

1. Microsoft Windows (DreamSpark/Microsoft Imagine Standart); reg. number 00037FFEBACF8FD7, contract № СД-130712001 of 12.07.2013.
2. Free video lectures - [freevideolectures.com](http://freevideolectures.com)
3. EBS 'student Consultant - <http://www.studmedlib.ru>
5. Kaspersky Anti-Virus 2016- 2017, reg. number KL4863RAUFQ, contract № XII-567116 of 29.08.2016.
6. Open source software: LibreOffice; Google Chrome; Adobe Reader; 7zip.
7. EBSCO Publishing E-Book Collection (10 editions) - <http://search.ebscohost.com/>

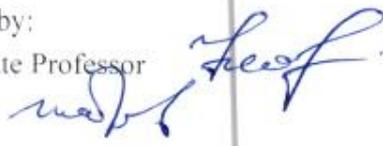
**8. Material and technical means provided for  
thesubject**

S.No.	Name of special premises and premises for independent work	Equipment of special premises and premises for independent work
1	Training room number 3, building 18 N.N. Burdenko Penza Regional Clinical Hospital, 1 floor, 12 m2	Laptop - 1 pc. Teacher's table - 1 pc. Training table - 1 pc. Wardrobe - 2 pcs. Training board - 1 pc. Chairs - 20 pcs. Couch-1pcs. Negatoscope - 1pc. Visual aids (posters), X-rays Phantom of the female perineum - 1 pc. Phantom male perineum - 1 pc. Phantom of the pelvis with a set of liners - 1 pc. Model for holding cardiopulmonary resuscitation - 1 pc. Surgical Instrument Set N.N. Burdenko Clinical Diagnostic Laboratory Design Bureau, an operating unit, including specialized operating rooms, a laparoscopic KARL STORZ stand, a KARL STORZ laparoscope, a GII electrosurgical dissector; radiology department, X-ray unit ABRIS, MAXIMA CRD, endoscopy unit, OLIMPUS video endoscopy, expert-class ultrasound machines with adapters for biopsy needle SIEMENS ACUSON -300, set for percutaneous hepaticostomy COOK; devices SKT "AQVILION TOSHIBA-32" and MRI GE Signa HD x 1,5T OKB im. NN Burdenko (on the basis of an agreement on the organization of practical training of students).
2	computer class building 18 N.N. Burdenko Penza Regional Clinical Hospital Burdenko "1 floor, 12 m2	Multimedia projector "BenQ" Table teacher - 1 pc. Interactive board - 1 pc. Laptop - 1 pc. Chairs - 40 pcs.

The study program of the discipline C 1.1.41. General Surgery, radiology was composed in compliance with requirements of FSES HE taking into account recommendation of EMEP for the educational program in compliance with the recommendations in the fields of study 31.05.01.general Medicine

The program was compiled by:

1. E.G. Feoktistova, Associate Professor
2. A.V. Shabrov, Assistant



**It is prohibited to reproduce the said program in any form without the prior written permission of the department that developed the program.**

The program was approved at a meeting of department "Surgery"

Report № 6 from «04» 03 2016

Head of department



professor A.N. Mitroshin  
(signature, Full name)

The program was approved by the

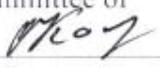
Dean of the Faculty of General Medicine

 I.Ya. Moiseeva

The program was approved by the methodological committee of Medical Institute

Report № 7 from «05» 03 2016

Head of the methodological committee of  
Medical Institute



professor O.V. Kalmin

Verification and translation

Translator of PSU International Projects Department  
Marina Pchelintseva 