

**MINISTRY OF HEALTH OF THE REPUBLIC OF BELARUS  
EDUCATIONAL INSTITUTION  
BELARUSIAN STATE MEDICAL UNIVERSITY**

Контрольный  
экземпляр

**APPROVED**

by First Vice-Rector, Professor

S.V. Gubkin



08.08.2016  
Reg. # УД-н. 560а/1617/уч.

**SURGICAL DISEASES**

**Curriculum of higher educational institution  
in the educational discipline for the specialty:**

**1-79 01 01 «General Medicine»**

Curriculum is based on the standard educational program «Surgical diseases» approved 31.08, 2016, registration number #TD-L. 560/тип.

**COMPILERS:**

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***RECOMMENDED FOR APPROVAL:***

by the 1<sup>st</sup> and 2<sup>nd</sup> Departments of Surgical Diseases of the Educational Institution  
“Belarusian State Medical University”  
(protocol # 15 of 12.05.2016);

by the Methodological Commission of Surgical Science of the Educational Institution  
“Belarusian State Medical University”  
(protocol # 14 of 18.05.2016)

## EXPLANATORY NOTE

**Surgical diseases** is the educational discipline containing systemized scientific knowledge and techniques in the field of etiology, pathogenesis, clinical manifestations, diagnostics, differential diagnosis, treatment and prevention of the diseases that require surgical correction. Obtaining this knowledge will allow students to learn basic, topical sections of surgery, form clinical understanding, acquire surgical and general medical skills and understand some ethical and deontological aspects of the profession.

The curriculum of the discipline "Surgical diseases" includes the latest scientific data about surgery, angiology, transplantation.

The aim of teaching and learning the «Surgical diseases» study is to provide the students with the scientific knowledge about:

- principles of diagnostics;
- principles of differential diagnosis;
- principles of treatment of main surgical diseases and injuries of the abdominal and thoracic cavity as well as peripheral veins and arteries.

The tasks of studying the discipline are to develop the students' academic competences, based on the ability to self-search educational and information resources, as well as acquire and understand the knowledge of:

- up-to-date knowledge of the main surgical diseases etiology and pathogenesis;
- clinical manifestation, diagnostics and differential diagnosis of surgical diseases;
- knowledge of treatment methods of surgical diseases;
- practical skills of examination, assessment of laboratory and instrumental methods of diagnostics;
- principles of prevention of surgical diseases and their complications.

The tasks of teaching the discipline include the formation of students' social, personal and professional competences, based on the knowledge and application of:

- knowledge and skills contributing to the formation of clinical thinking according to ethical and deontological norms;
- research methods aimed at establishing the diagnosis;
- etiological and pathological treatment methods of surgical diseases.

Teaching and successful learning of the discipline «Surgical diseases» is carried out on the basis of the knowledge and skills previously acquired by the students in the following disciplines:

**Medical and Biologic Physics.** Medical devices and equipment used in surgery.

**Medical Biology and General Genetics.** Biological basis of vital activity. Biology of the cell. Reproduction. Protozoology. Biology of protozoa.

**Latin language.** Knowledge of meanings of Latin and Greek word-formation elements and definite minimum of terminology in Latin.

**Human anatomy.** Structure of the human body and its constituent systems, organs, tissues, sex and age characteristics of the organism.

**Histology, Cytology, Embryology.** Methods of histological and cytological studies. Blood and lymph. Loose connective tissue. Epithelial tissue. Hemopoietic and immune organs (central and peripheral), morphology, immunogenesis.

**Normal Physiology.** Basic physiological functions of human organs and systems.

**Fundamentals of maintaining patients.** Basic measures in maintenance of microclimate, hygienic care and patient feeding.

**Microbiology, Virology, Immunology.** Bacteriological and immunological diagnostic methods of surgical infection. Microbiological principles of chemotherapy and antiseptics.

**Topographic Anatomy and Operative Surgery.** Fundamentals of operative surgery, basic principles of performing operations. Theoretical basis, topographic anatomy in performing different procedures and operations in different anatomic areas.

**Pathological Physiology.** The main pathological and physiological processes underlying the development of the most common surgical diseases and injuries.

**Pathological Anatomy.** Morphology of pathological processes typical for surgical diseases.

**General Surgery.** Basic concepts in surgery, desmurgy, transport immobilization, bleeding and blood loss, transfusions of blood and plasma substituting solutions. Aseptic, antiseptic, fundamentals of surgical procedures, treatment of wounds.

**Pharmacology.** Drugs used in treatment of surgical diseases, principles of rational pharmacotherapy.

**As a result of studying the discipline (name of the discipline) the student should**

**know:**

- classification, etiology, pathogenesis, clinical picture, diagnostics and differential diagnostics, preventive and treatment methods of the most frequent surgical diseases and injuries in adults;
- diagnostic peculiarities, clinical manifestations and management of emergency surgical diseases and pathological processes;
- management of patients with surgical diseases in case of critical condition development.

**be able to:**

- examine a patient;
- assess the results of laboratory and instrumental studies;
- diagnose acute surgical diseases;
- choose surgical tactics providing skilled care;

**master:**

- assistance in case of traumas and lesions of the chest and abdomen, retroperitoneum, arteries and veins;
- assistance in case of acute surgical diseases;
- fill in medical documentation.

**Total number** of hours for the study of the discipline is 366 academic hours. Classroom hours according to the types of studies: lectures - 42 hours, practical classes - 146, student independent work (self-study) - 178 hours.

Current assessment is carried out according to the syllabus of the specialty in the form of a credit (7 semester), and examination (8, 10 semesters).

Final assessment – state examination.

Form of higher education – full-time.

### ALLOCATION OF ACADEMIC TIME ACCORDING TO SEMESTERS OF STUDY

Code, name of the specialty	semester	Number of academic hours					Form of current assessment
		total	in-class	including		out-of-class self-studies	
				lectures	practical classes		
1-79 01 01 «General Medicine»	7	76	46	10	36	30	Credit
	8	120	54	14	40	66	Examination
	9	68	45	10	35	23	-
	10	102	43	8	35	59	Examination
<b>Total time</b>		<b>366</b>	<b>188</b>	<b>42</b>	<b>146</b>	<b>178</b>	

## THEMATIC PLAN

Section (topic) name	Number of class hours	
	lectures	practical
<b>1. Current Issues in Surgery. Deontology in Surgery</b>	-	<b>2</b>
<b>2. Abdominal Surgery</b>	<b>25</b>	<b>78</b>
2.1. Acute and Chronic Appendicitis, complications of the Acute Appendicitis	2	6
2.2. Hernias	2	6
2.3. Acute Pancreatitis	2	6
2.4. Complications of the Acute Pancreatitis	1	2
2.5. Chronic Pancreatitis	1	3
2.6. Diseases of the Liver	-	2
2.7. Diseases of the Bile Ducts	2	6
2.8. Postcholecystectomy Syndrome	2	5
2.9. Cholestasis	2	5
2.10. Intestinal Obstruction	2	6
2.11. Complications of the Gastroduodenal Ulcers	4	10
2.12. Peritonitis	2	5
2.13. Blunt Abdominal Trauma	1	3
2.14. Portal Hypertension	2	5
2.15. Diseases of the Spleen	-	3
2.16. Diseases of the Small Intestine	-	1
2.17. Diseases of the Large Intestine	-	2
2.18. Diseases of the Rectum	-	2
<b>3. Surgery of Heart and Blood Vessels</b>	<b>8</b>	<b>23</b>
3.1. Diseases of the Heart	2	5
3.2. Diseases of the Aorta	-	2
3.3. Diseases of the Arteries	1	2
3.4. Acute Arterial Obstruction	1	2
3.5. Venous Diseases of Extremities	2	6
3.6. Thrombosis and Thrombophlebitis of the Main Veins	1	3
3.7. Post-thrombotic disease	1	2
3.8. Surgery of the Lymphatic System	-	1
<b>4. Chest Surgery</b>	<b>5</b>	<b>20</b>
4.1. Diseases of the Lungs and Pleura	2	6
4.2. Diseases of the Mediastinum	-	4
4.3. Diseases and Trauma of the Esophagus	2	6
4.4. Blunt Chest Trauma	1	2
4.5. Diseases of the Diaphragm	-	2
<b>5. Transplantation of Organs and Tissues</b>	<b>2</b>	<b>5</b>
<b>6. Surgical Diseases of the Endocrine Glands</b>	<b>2</b>	<b>10</b>
6.1. Diabetes Mellitus in Surgery	2	5
6.2. Diseases of the Thyroid and Parathyroid Glands	-	5
<b>7. Surgery of Parasitic Diseases</b>	-	<b>3</b>

Section (topic) name	Number of class hours	
	lectures	practical
<b>8. Surgical Diseases of the Breast</b>	-	<b>5</b>
<b>Total hours</b>	<b>42</b>	<b>146</b>

## **CONTENT OF THE EDUCATIONAL MATERIAL**

### **1. Current Issues in Surgery. Deontology in Surgery**

Components and aims of the education discipline “Surgical Diseases”. History of surgery development in Belarus. History of the department. Aims of the discipline. Current issues of surgery, future development. Deontology in surgery.

### **2. Abdominal Surgery**

#### **2.1. Acute and Chronic Appendicitis, Complications of the Acute Appendicitis**

Anatomy and physiology of the caecum and appendix. Classification of acute. Etiology and pathogenesis of acute appendicitis. Clinical picture of acute and chronic appendicitis. Clinical symptoms of acute appendicitis in case of common localization. Clinical features of abnormal appendix localization. Clinical features of acute appendicitis in children, aged people, pregnant women. Clinical manifestations of chronic appendicitis. Principles of diagnostics of acute and chronic appendicitis, treatment, types of operations. Difficulties and mistakes in treatment. Postoperative management. Classification of acute appendicitis complications. Clinical manifestations, laboratory and instrumental diagnostics. Diagnostic and treatment difficulties. Periappendiceal mass. Appendiceal abscess. Peritonitis due to the acute appendicitis: types, treatment plan. Wound infection. Differential diagnosis of acute appendicitis complications. Complications of other organs and systems. Treatment principles of acute appendicitis complications.

Management of patients with appendicitis: collection of complications and anamnesis; objective examination of a patient; planning of patient’s investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; indications for surgery; making a plan of surgery; assistance in appendectomy; postoperative care. Writing an educational case history.

#### **2.2. Hernias**

Definitions in Herniology, classification of hernias by origin, localization, clinical course. Etiology and pathogenesis (predisposing and causing factors). General symptomatology of hernias, diagnostics and surgical treatment. Hernias complications: definitions, clinical picture, diagnostics, differential diagnosis, treatment. Strangulated hernia. Inflammation of hernia. Incarcerated hernia. Coprostasis. White (Hunter’s) line hernias. Anatomy. Clinical manifestations, diagnosis, methods of treatment. Umbilical hernias. Anatomy. Classification. Clinical picture, diagnostics, differential diagnosis, treatment. Inguinal hernias. Anatomy.

Classification. Clinical picture, diagnostics, differential diagnosis, treatment. Femoral hernias. Anatomy. Classification. Clinical picture, diagnostics, differential diagnosis, treatment. Recurrent hernias. Incision hernias: clinical picture, diagnosis, treatment. Selection of surgical procedure in hernia treatment. Tension and tension-free hernioplasty methods. Rare types of hernias.

Management of patients with hernias: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; indications for surgery; making a plan of surgery; assistance in hernioplasty; postoperative care. Writing an educational case history.

### **2.3. Acute Pancreatitis**

Anatomy and physiology of the pancreas. Pancreas topography. Classification of acute pancreatitis. Etiology and pathogenesis. Clinical semiotics of acute pancreatitis according to the disease form. Laboratory and instrumental diagnostics. Assessment of acute pancreatitis severity. Differential diagnosis. Treatment plan: conservative treatment, indications for surgery, types of operations.

Management of patients with acute pancreatitis: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; indications for surgery; making a plan of surgery; assistance in cholecystectomy; postoperative care. Writing an educational case history.

### **2.4. Complications of the Acute Pancreatitis**

Complications of acute pancreatitis: clinical manifestations, diagnostics, differential diagnosis, treatment. Difficulties and mistakes in diagnostics and treatment. Possibilities of modern minimally invasive techniques in diagnostics and treatment of acute pancreatitis.

Management of patients with complications of acute pancreatitis: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; indications for surgery; making a plan of surgery; assistance in cholecystectomy; postoperative care. Writing an educational case history.

### **2.5. Chronic Pancreatitis**

Classification. Etiology and pathogenesis. Clinical picture depending on the form of the disease. Laboratory and instrumental diagnostics, differential diagnosis. Therapy. Conservative treatment, indication for surgery, types of operations. Complications of chronic pancreatitis, clinical picture, diagnosis, therapy.

Management of patients with chronic pancreatitis: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a



diagnosis; indications for surgery; making a plan of surgery; assistance in cholecystectomy; postoperative care. Writing an educational case history.

### **2.6. Diseases of the Liver**

Anatomical and physiological data. Special examination methods in patients with liver diseases. Non-parasitic hepatic cysts, etiology, pathogenesis, clinical manifestations, diagnosis, treatment. Hepatic abscess, etiology, pathogenesis, clinical manifestations, diagnosis, treatment. Differential diagnosis of focal liver lesions. Difficulties and mistakes in diagnostics and treatment.

Management of patients with diseases of the liver: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; indications for surgery; making a plan of surgery; postoperative care. Writing an educational case history.

### **2.7. Diseases of the Bile Ducts**

Anatomy and physiology of the gallbladder and bile ducts. Classification of the diseases. Diagnostic methods in patients with gallbladder and bile ducts diseases. Gallstone disease. Acute and chronic cholecystitis: etiology and pathogenesis, classification, clinical manifestations, diagnostics, differential diagnosis. Treatment, types of operations. Complications of gallstone disease. Clinical manifestations, diagnostics, differential diagnosis, treatment. Possibilities of modern minimally invasive techniques in biliary diseases, diagnostics and treatment. Differential diagnosis of acute cholecystitis (abdominal diseases, requiring for surgical treatment, therapeutic diseases). Choledocholithiasis. Etiology. Clinical manifestations, laboratory and instrumental diagnostics. Therapy. Stenosis of the major duodenal papilla. Etiology. Clinical manifestations, laboratory and instrumental diagnostics. Therapy. Cholangitis. Etiology. Clinical manifestations, laboratory and instrumental diagnostics. Therapy. The Mirizzi's syndrome. Etiology. Clinical manifestations, laboratory and instrumental diagnostics. Therapy. Biliary fistulas and acute gallstone ileus. Etiology. Clinical manifestations, laboratory and instrumental diagnostics. Therapy. Benign tumors of the gallbladder and gallbladder cancer. Classification. Clinical manifestations, diagnosis, therapy.

Management of patients with diseases of the bile ducts: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; indications for surgery; making a plan of surgery; postoperative care. Writing an educational case history.

### **2.8. Postcholecystectomy Syndrome**

Postcholecystectomy syndrome. Definition, classification, differential diagnosis, methods of treatment. Bile duct trauma, causes, classification, clinical picture, diagnosis, treatment.

Management of patients with postcholecystectomy syndrome: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; indications for surgery; making a plan of surgery; postoperative care. Writing an educational case history.

### **2.9. Cholestasis**

Cholestasis. Definition. Classifications. Enzyme and hepatogram. Clinical manifestations, current diagnostic measures. Differential diagnosis of obstructive jaundice. Indications for surgery, types of surgical procedures and their features. Peculiarities of pre- and postoperative period.

Management of patients with cholestasis: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; indications for surgery; making a plan of surgery; postoperative care. Writing an educational case history.

### **2.10. Intestinal Obstruction**

Acute intestinal obstruction: definition, classification (by level of obstruction, morphofunctional nature, stage), etiology and pathogenesis. Features of etiology and pathogenesis of large bowel obstruction. Methods of examination. Clinical manifestations and diagnostics, differential diagnosis of intestinal obstruction syndrome. Treatment-and-diagnostics complex: definition, content, evaluation of the results. Differentiated principles of diagnostics and treatment of acute intestinal obstruction. Indications for surgery. Preoperative preparation, features of postoperative care. Types and aims of surgical treatment. Treatment results. Prophylactics of acute intestinal obstruction.

Management of patients with intestinal obstruction: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; indications for surgery; making a plan of surgery; postoperative care. Writing an educational case history.

### **2.11. Complications of the Gastroduodenal Ulcer**

Etiology and pathogenesis of perforated ulcer. Clinical manifestations of perforation to abdominal cavity, atypical perforation (to retroperitoneal space, omental bursa). Clinical manifestations of sealed perforation. Methods of perforation diagnostics. Differential diagnosis. Preoperative preparation, methods of surgical treatment, postoperative management. Etiology and pathogenesis of gastric and duodenal ulcer penetration. Classification. Clinical manifestations and diagnosis of penetration. Operative treatment of penetrating ulcer, postoperative management. Pathology and pathogenesis of bleeding in gastroduodenal ulcer. Clinical manifestations of bleeding in gastric and duodenal ulcers. Diagnostic methods of hemorrhage and evaluation of blood loss volume. Stages of diagnostics. Differential

diagnosis. Classification of gastroduodenal ulcer bleedings. Principles of treatment of the gastroduodenal ulcer bleedings. Conservative treatment. Endoscopic hemostasis, methods, possibilities. Indications for surgery, periods, selection of procedures. Postoperative period, prophylaxis and treatment of the complications. Difficulties and mistakes in diagnostics and treatment of bleeding gastroduodenal ulcers. Classification, etiology and pathogenesis of gastric outlet obstruction. Clinical manifestations of the disease depending on its stage. Radiologic and endoscopic semiotics of the disease. Differential diagnosis. Indications for surgery, selection of operation depending on disease stage, peculiarities in pre- and postoperative management. Intractable ulcer, clinical picture, diagnostics, differential diagnosis, treatment.

Management of patients with complications of gastroduodenal ulcer: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; indications for surgery; making a plan of surgery; postoperative care. Writing an educational case history.

### **2.12. Peritonitis**

Anatomy and physiology of the peritoneum. Classification of the peritonitis (by etiology, prevalence, clinical stage). Etiology and pathogenesis. Abdominal sepsis notion. Clinical picture, diagnostics and differential diagnosis. Principles of peritonitis treatment. Preoperative preparation. Main aims and stages of operative treatment. Principles of antimicrobial treatment of acute peritonitis. Features of postoperative period. Limited peritonitis (subhepatic, subphrenic, Douglas space, interintestinal abscesses): causes, clinical presentation, diagnosis. Current treatment methods of peritonitis. Possibilities of efferent methods in complex peritonitis treatment. Difficulties and mistakes in treatment of the peritonitis.

Management of patients with peritonitis: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; indications for surgery; making a plan of surgery; postoperative care. Writing an educational case history.

### **2.13. Blunt Abdominal Trauma**

Definition, classification (by type of injury agent, prevalence, nature and types of injury). Mechanisms of injuries, abdominal trauma pathogenesis. Clinical picture of anterior abdominal wall injuries, hollow and parenchymal abdominal organ injuries, retroperitoneal space injuries. Laboratory and instrumental diagnostics, differential diagnosis. Treatment. Indications for surgery, types of surgical intervention. Difficulties and mistakes in diagnostics and treatment of the abdominal trauma patients.

Management of patients with blunt abdominal trauma: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a

diagnosis; indications for surgery; making a plan of surgery; postoperative care. Writing an educational case history.

#### **2.14. Portal Hypertension**

Definition. Classification. Causes, pathogenesis, course of the disease. Special methods of diagnostics. Clinical picture, diagnostics, differential diagnosis. Principles of treatment: indications for surgery, types of surgical procedures. Complications of portal hypertension, clinical picture, diagnosis, therapy, outcomes. Possibilities of minimally invasive procedures.

Management of patients with portal hypertension: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; indications for surgery; making a plan of surgery; postoperative care. Writing an educational case history.

#### **2.15. Diseases of the Spleen**

Anatomy and physiology of the spleen, classification of spleen diseases. Splenic cysts, etiology, clinical picture, diagnosis, therapy. Tumors of the spleen, clinical picture, diagnosis, therapy. Regional blood supply disturbances (thrombosis, spleen artery aneurism, splenic infarction), clinical picture, diagnosis, therapy. Surgical disorders of the spleen in infectious diseases (tuberculosis, malaria, leishmaniasis) and in blood cells disorders (anemia, hemoblastosis, idiopathic thrombocytopenic purpura etc.).

Management of patients with spleen diseases: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; indications for surgery; making a plan of surgery; postoperative care. Writing an educational case history.

#### **2.16. Diseases of the Small Intestine**

Crohn's disease, clinical manifestations, diagnostics, differential diagnosis. Principles of conservative treatment, indications for surgery, types of operations. Small intestine diverticula. Etiology and pathogenesis, incidence, clinical manifestations, diagnosis, treatment. Complications of small intestine diseases.

Management of patients with diseases of small intestine: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; indications for surgery; making a plan of surgery; postoperative care. Writing an educational case history.

#### **2.17. Diseases of the Large Intestine**

Ulcerative colitis, principles of diagnostics and medical treatment, indications for surgery, types of operations. Diverticular disease, definition, etiology and

pathogenesis, clinical manifestations, diagnostics, differential diagnosis, therapy. Complicated diverticular disease, clinical manifestations, diagnostics, differential diagnosis, therapy. Intestinal fistulas, definition, etiology and pathogenesis. Classifications by etiology, morphology, localization. Clinical manifestations, diagnosis, therapy, indications for surgery, types of operations.

Management of patients with diseases of large intestine: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; indications for surgery; making a plan of surgery; postoperative care. Writing an educational case history.

## **2.18. Diseases of the Rectum**

Anatomy and physiology of the rectum. Classification of the diseases. Special methods of diagnostics in proctology. Hemorrhoids. Definition. Etiology and pathogenesis, classification, clinical manifestations, diagnostics, differential diagnosis, therapy, indication for surgery, types of operations. Complications. Anal fissure. Etiology and pathogenesis, clinical manifestations, diagnostics, differential diagnosis, therapy. Perirectal abscess. Etiology and pathogenesis, clinical manifestations, diagnostics, differential diagnosis, therapy. Fistula-in-ano. Etiology and pathogenesis, clinical manifestations, diagnostics, differential diagnosis, therapy. Pilonidal sinus. Etiology and pathogenesis, clinical manifestations, diagnostics, differential diagnosis, therapy. Rectal prolapse. Definition, etiology and pathogenesis, clinical manifestations, diagnostics, therapy, types of operations. Intestinal bleeding of different etiology, pathogenesis, clinical features. Early and late signs of bleeding. Differential diagnosis of gastroduodenal and large intestine hemorrhage. Principles of conservative treatment, indications for surgery, types of operations.

Management of patients with diseases of the rectum: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; indications for surgery; making a plan of surgery; postoperative care. Writing an educational case history.

## **3. Surgery of the Heart and Blood Vessels**

### **3.1. Diseases of the Heart**

Artificial and subsidiary blood supply: principles, indications, protection of myocardium. Classification of congenital cardiac diseases. Hemodynamic disturbances, clinical manifestations, diagnostics of congenital cardiac diseases (patent ductus arteriosus, atrial and ventricular septal defect, abnormal pulmonary venous drainage, disease of Fallot). Indications for operative treatment, methods and time of surgical interventions. Possibilities of percutaneous transluminal methods of correction. Prognosis, outcomes, prophylaxis. Indications for operative treatment and types of surgical procedures in acquired cardiac defects. Possibilities of percutaneous transluminal methods of treatment. Cardiac valves replacement. Pre- and

postoperative period, outcomes. History of ischemic heart disease surgery. Indications for surgical treatment of ischemic heart disease. Choice of surgical method, short-term results and outcomes. Possibilities of percutaneous transluminal methods (angioplasty, transmyocardial laser revascularization) in treatment of ischemic heart diseases. Postinfarction heart aneurysm, diagnosis, indications for surgery, types of operations. Pericarditis, classification, indications for surgery, types of procedures. Surgery for heart arrhythmias (atrial fibrillation, transverse heart block, ventricular and supraventricular arrhythmias). Diagnosis, methods of treatment (radiofrequency ablation, conventional surgery, pacemakers etc.).

Management of patients with heart diseases that require surgery: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; planning conservative treatment; indications for surgery; making a plan of surgery; postoperative care. Writing an educational case history.

### **3.2. Diseases of the Aorta**

Aneurysms of the aorta, classifications (by localization, shape, etiology, pathogenesis, size), hemodynamic disturbances, clinical manifestations, diagnosis, indications for surgery. Aneurysms of the aortic arch. Aneurysms of thoracic aorta. Aneurysms of abdominal aorta. Complications of aortic aneurysm (aortic dissection, partial and complete rupture). Classification, etiology and pathogenesis, hemodynamic changes, clinical manifestations, diagnostics. Differential diagnosis, treatment (traditional conventional and percutaneous transluminal procedures). Coarctation of the aorta, clinical manifestations, diagnostics, differential diagnosis, principles of treatment.

Management of patients with aortic diseases that require surgery: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; planning conservative treatment; indications for surgery; making a plan of surgery; postoperative care. Writing an educational case history.

### **3.3. Diseases of the Arteries**

Definition, etiology and pathogenesis of artery occlusive diseases (atherosclerotic occlusion, Takayasu's arteritis, thromboangiitis obliterans, fibromuscular dysplasia, congenital abnormalities, Raynaud's syndrome). Chronic upper extremity ischemia. Classification, clinical picture, diagnostics, differential diagnosis, indications for surgery, types of operations. Acute and chronic visceral blood circulation disturbances. Classification, clinical picture, diagnostics, differential diagnosis, indications for surgery, types of operations. Aortoiliac and lower extremity occlusive disease. Classification, clinical picture, diagnostics, differential diagnosis, therapy (conservative treatment, indications for surgery, types of operations, possibilities of endovascular transluminal repair).

### **3.4. Acute Arterial Obstruction**

Definition, incidence, classification, etiology and pathogenesis, clinical picture, diagnostics and differential diagnosis. Treatment (conservative treatment, indications for surgery, types of operations, possibilities of percutaneous transluminal repair, characteristics of pre- and postoperative period.

Management of patients with diseases of the arteries: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; planning conservative treatment; indications for surgery; making a plan of surgery; postoperative care. Writing an educational case history.

### **3.5. Venous Diseases of Extremities**

Anatomy and physiology. Clinical semiotics of venous diseases. Laboratory and instrumental diagnostics of venous diseases, differential diagnosis. Congenital venous anomalies: clinical manifestations, diagnosis, principles of treatment. Injuries of main veins of extremities: clinical presentation, diagnosis, treatment. Varicose disease of lower extremities: etiology and pathogenesis, classification, clinical manifestations. Methods of examination. Treatment of lower extremities varicose disease depending on its stage, types of operations, sclerotherapy. Complications of varicose disease, clinical manifestations, diagnosis, treatment. Occlusion of the superior vena cava branches. Current treatment techniques of venous disease. Difficulties and mistakes in diagnostics and treatment of patients with venous disease of extremities.

Management of patients with vein diseases of extremities: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; planning conservative treatment; indications for surgery; making a plan of surgery; postoperative care. Writing an educational case history.

### **3.6. Thrombosis and Thrombophlebitis of the Main Veins**

Deep vein thrombosis and thrombophlebitis: classification by localization, extent and stage of the disease. Etiology and pathogenesis. Clinical picture, laboratory and instrumental examinations. Principles of treatment (conservative treatment, indications for surgery, types of operations). Prognosis, rehabilitation. Complications.

### **3.7. Post-thrombotic Disease**

Classification, etiology and pathogenesis. Clinical picture, diagnosis, principles of treatment, indication for surgery, types of operation.

Management of patients with thrombosis, thrombophlebitis of the main veins, post-thrombotic disease: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; planning conservative

treatment; indications for surgery; making a plan of surgery; postoperative care. Writing an educational case history.

### **3.8. Surgery of the Lymphatic System**

Anatomy and physiology of the lymphatic system. Classification of the diseases. Methods of examination. Lymphatic system diseases. Failure of lymph circulation, causes, classification, clinical manifestations, diagnosis, treatment. Lymphedema (elephantiasis), causes, clinical manifestations, diagnosis, treatment. Lymphadenitis, lymphangitis, causes, clinical manifestations, diagnosis, treatment.

Management of patients with diseases of lymphatic system that require surgery: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; planning conservative treatment; indications for surgery; making a plan of surgery; postoperative care.

## **4. Chest Surgery**

### **4.1. Diseases of the Lungs and Pleura**

Anatomy and physiology of the lungs and pleura. Spontaneous pneumothorax: classification, clinical course, diagnosis, treatment. Suppurative diseases of the lungs and pleura: classification, etiology and pathogenesis. Acute lung abscess and gangrene. Ways and mechanisms of the development. Clinical features and diagnosis. Complications of the suppurative diseases: diagnostics, differential diagnosis, principles of treatment, indication for surgery, types of operations. Chronic lung abscess: ways of development, clinical course, diagnosis, differential diagnosis, treatment. Acute pleural empyema and pyopneumothorax: epidemiology, clinical picture, diagnostics and differential diagnosis. Principles of treatment, indications for surgery, types of operations. Chronic pleural empyema. Clinical picture. Diagnosis, therapy. Bronchial fistula: classification, etiology and pathogenesis, clinical picture, diagnosis, treatment (conservative treatment, indications for surgery, types of operations). Bronchiectasis: classification, indication for surgery. Lung cyst: etiology, clinical picture, diagnosis, indications for surgery, types of operations. Current minimally invasive procedures.

Management of patients with diseases of lungs and pleura that require surgery: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; indications for surgery; making a plan of surgery; postoperative care. Writing an educational case history.

### **4.2. Diseases of the Mediastinum**

Topographic anatomy of the mediastinum. Classification, etiology, clinical picture, diagnostics, and differential diagnosis of mediastinitis. Treatment plan for mediastinitis of different etiology. Mediastinal drainage principles and types. Tumors of the anterior mediastinum (dermoid cyst, thymoma, stromal tumors): etiology and pathological anatomy, diagnosis, and operative treatment. Tumors of posterior



mediastinum (neurogenic, angiogenic, bronchogenic tumors, and pericardial cysts): etiology, pathological anatomy, diagnosis, therapy.

Management of patients with diseases of mediastinum that require surgery: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; indications for surgery; making a plan of surgery; postoperative care. Writing an educational case history.

### **4.3. Diseases and Trauma of the Esophagus**

Anatomy and physiology. Classification of esophagus diseases, special methods of diagnostics. Common symptoms of esophageal disease. Chemical burn of the esophagus: incidence, classifications according to the depth of the lesion, pathologicoanatomic stage, etiology and pathogenesis, clinical picture, diagnostics, differential diagnosis. Treatment. Complications (early and late): clinical features, diagnostics, therapy. Neuromuscular esophageal diseases. Hypertensive lower esophageal sphincter (achalasia): classification, etiology and pathogenesis, clinical manifestations, diagnosis, indications for surgery, types of operations. Gastroesophageal reflux disease: classification, etiology and pathogenesis, clinical manifestations, diagnosis, indications for surgery, types of operations. Esophageal diverticula. Classification. Clinical picture, diagnosis, indications for surgery, types of operations. Foreign bodies in the esophagus. Clinical picture, diagnosis, therapy. Benign tumors of the esophagus. Clinical picture, diagnosis, indications for surgery. Esophageal trauma. Causes, clinical picture, diagnosis, management. Spontaneous esophageal rupture.

Management of patients with diseases and trauma of esophagus that require surgery: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; indications for surgery; making a plan of surgery; postoperative care. Writing an educational case history.

### **4.4. Blunt Chest Trauma**

Blunt chest trauma: definition, classification (by type of injury agent, nature and type of injury), clinical picture, laboratory and instrumental diagnostics, differential diagnosis, principles of treatment, features of postoperative period. Complications of blunt chest trauma: clinical manifestations, diagnosis, treatment. Difficulties and mistakes in diagnostics and treatment of patients with blunt chest trauma.

Management of patients with blunt chest trauma: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; indications for surgery; making a plan of surgery; postoperative care. Writing an educational case history.

#### **4.5. Diseases of the Diaphragm**

Anatomy and physiology of the diaphragm, classification of the diseases. Diaphragmatic injuries and traumas: causes, clinical picture, diagnosis, therapy. Hiatal hernias: classification, etiology and pathogenesis, clinical picture, diagnosis, therapy. Diaphragmatic paralysis: etiology and pathogenesis, clinical picture, diagnosis, therapy.

Management of patients with diseases of the diaphragm that require surgery: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; indications for surgery; making a plan of surgery; postoperative care. Writing an educational case history.

#### **5. Transplantation of Organs and Tissues**

Definitions: transplantation, recipient, donor, classification of the transplants. Juridical and ethical problems of the organ transplantation. Transplantation immunologic basis. Kidney transplantation: history, principles of donor selection, preoperative preparation, surgical technique, postoperative management. Heart transplantation, indications, donor selection, surgical technique, postoperative management. Pancreas transplantation: general information, recipient selection, indications for surgery, types of operations, postoperative management. Liver transplantation: donor and recipient selection, surgical technique, postoperative management. Other types of transplantations. Prospects and directions of transplantation development.

Management of patients who are being prepared to transplantation: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; indications for surgery; making a plan of surgery; postoperative care. Writing an educational case history.

#### **6. Surgical Diseases of the Endocrine Glands**

##### **6.1. Diabetes Mellitus in Surgery**

Definition of the diabetes mellitus, classification. Peculiarities of pre- and postoperative period in diabetic patients. Principles of emergency medical help. Complications requiring surgical intervention. Perspective methods of treatment of diabetes mellitus and its complications. Diabetic foot syndrome: classification, etiology and pathogenesis, diagnosis, therapy, complex prophylaxis. Insulinoma. Clinical manifestations, diagnosis, indications for surgery, types of operations, features of pre- and postoperative care. Zollinger-Ellison syndrome. Etiology and pathogenesis, clinical manifestations, diagnosis, therapy, indications for surgery, types of operations.

Management of patients with diabetes mellitus and its complications that require surgery: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and

diagnostic findings; making a diagnosis; indications for surgery; making a plan of surgery; postoperative care. Writing an educational case history.

## **6.2. Diseases of the Thyroid and Parathyroid Glands**

Nontoxic goiter, etiology and pathogenesis, clinical manifestations, diagnosis, indications for surgery, type of operations. Hyperthyroidism, etiology and pathogenesis, clinical manifestations, diagnosis, indications for surgery, types of operations. Diffuse toxic goiter, etiology and pathogenesis, clinical manifestations, diagnosis, indications for surgery, types of operations. Thyroiditis. Lymphocytic (Hashimoto's) thyroiditis. Etiology and pathogenesis, clinical manifestations, diagnosis, indications for surgery, types of operations. Invasive fibrous thyroiditis (Riedel's thyroiditis). Etiology and pathogenesis, clinical manifestations, diagnosis, indications for surgery, types of operations. Subacute (de Quervain's) thyroiditis. Etiology and pathogenesis, clinical manifestations, diagnosis, indications for surgery, types of operations. Acute thyroiditis. Etiology and pathogenesis. Clinical manifestations, diagnostics, differential diagnosis, indications for surgery, types of operations. Hyperparathyroidism, etiology and pathogenesis, clinical manifestations, diagnosis, indications for surgery, types of operations.

Management of patients with diseases of the diaphragm that require surgery: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; planning conservative treatment; indications for surgery; making a plan of surgery; postoperative care. Writing an educational case history.

## **7. Surgery of Parasitic Diseases**

Amebiasis: clinical manifestations, diagnosis, therapy, indications for surgery. Hydatid cyst. Clinical manifestations, diagnosis, therapy, indications for surgery, types of operations. Alveolar echinococcosis. Clinical manifestations, diagnosis, therapy, indications for surgery, types of operations. Opisthorchiasis. Clinical manifestations, diagnosis, therapy, indications for surgery, types of operations. Ascariasis. Clinical manifestations, diagnosis, therapy, indications for surgery, types of operations.

Management of patients with parasitic diseases: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; indications for surgery; making a plan of surgery; postoperative care. Writing an educational case history.

## **8. Surgical Diseases of the Breast**

Anatomy and physiology of the breast. Classification of the diseases. Congenital anomalies, clinical picture, diagnostics, differential diagnosis, therapy. Inflammatory disorders (specific and nonspecific), clinical picture, diagnosis, therapy. Breast injury. Clinical picture, diagnosis, therapy. Dishormonal and

functional disorders of the breast. Clinical picture, diagnostics, differential diagnosis, treatment.

Management of patients with diseases of the breast: collection of complications and anamnesis; objective examination of a patient; planning of patient's investigations; interpretation of laboratory and diagnostic findings; making a diagnosis; indications for surgery; making a plan of surgery; postoperative care. Writing an educational case history.

### EDUCATIONAL DISCIPLINE CURRICULAR CHART

Section, topic #	Section (topic) name	number of hours		Self-studies <sup>1</sup>	Other <sup>2</sup> (literature, manuals etc.)	Form of control
		lectures	practical (laboratory or seminars)			
7 <sup>th</sup> semester						
1	Current Issues in Surgery. Deontology in Surgery	-	2	1		interviews
2.1.	Acute and Chronic Appendicitis, Complications of the Acute Appendicitis	2	6	5	1-6	tests; control questioning, control works, essay
2.2.	Hernias	2	6	5	1-6	tests; control questioning, control works, essay
2.3.	Acute Pancreatitis	2	6	5	1-6	tests; control questioning, control works, essay
2.7.	Diseases of the Bile Ducts	2	6	5	1-6	tests; control questioning, control works, essay
2.11.	Complications of the Gastroduodenal Ulcers	4	10	9	1-6	oral credit
8 <sup>th</sup> semester						
2.10.	Intestinal Obstruction	2	6	9	1-6	interviews
2.12.	Peritonitis	2	5	9	1-6	tests; control questioning, control works, essay
3.1.	Diseases of the Heart	2	5	9	1-6	tests; control questioning, control works, essay
3.2.	Diseases of the Aorta	-	2	3	1-6	tests; control questioning, control works, essay
3.3.	Diseases of the Arteries	1	2	3	1-6	tests; control questioning, control works, essay
3.4.	Acute Arterial Obstruction	1	2	3	1-6	tests; control questioning

<sup>1</sup> the column is absent for part-time students

<sup>2</sup> If desired

3.5.	Venous Diseases of Extremities	2	6	9	1-6	Conference reports
3.8.	Surgery of the Lymphatic System	-	1	1	1-6	interviews
4.1.	Diseases of the Lungs and Pleura	2	6	9	1-6	electronic tests
2.16.	Diseases of the Small Intestine	-	1	3	1-6	tests; control questioning, control works, essay
2.17.	Diseases of the Large Intestine	-	2	3	1-6	tests; control questioning, control works, essay
2.18.	Diseases of the Rectum	-	2	3	1-6	examination
9 <sup>th</sup> semester						
2.4.	Complications of the Acute Pancreatitis	1	2	2	1-6	interviews
2.5.	Chronic Pancreatitis	1	3	3	1-6	interviews
2.8.	Postcholecystectomy Syndrome	2	5	2	1-6	tests; control questioning, control works, essay
2.6.	Diseases of the Liver	-	2	2	1-6	tests; control questioning, control works, essay
2.9.	Cholestasis	2	5	2	1-6	tests; control questioning, control works, essay
7	Surgery of Parasitic Diseases	-	3	5	1-6	control questioning, essay
2.14.	Portal Hypertension	2	5	3	1-6	tests; control questioning, control works, essay
4.4.	Blunt Chest Trauma	1	2	2	1-6	tests; control questioning, control works, essay
2.13.	Blunt Abdominal Trauma	1	3	2	1-6	tests; control questioning, control works, essay
4.5.	Diseases of the Diaphragm	-	2	2	1-6	tests; control questioning, control works, essay
2.15.	Diseases of the Spleen	-	3	2	1-6	electronic tests
10 <sup>th</sup> semester						
5	Transplantation of Organs and Tissues	2	5	8	1-6	interviews
6.1.	Diabetes Mellitus in Surgery	2	5	8	1-6	tests; control questioning, control works, essay
6.2.	Diseases of the Thyroid and Parathyroid Glands	-	5	7	1-6	control questioning, control works

8	Surgical Diseases of the Breast	-	5	5	1-6	conference reports
4.2.	Diseases of the Mediastinum	-	4	7	1-6	tests; control questioning
4.3.	Diseases and Trauma of the Esophagus	2	6	8	1-6	tests; control questioning, control works, essay
3.6.	Thrombosis and Thrombophlebitis of the Main Veins	1	3	5	1-6	tests; control questioning, control works, essay
3.7.	Post-thrombotic disease	1	2	5	1-6	examination

## INFORMATION AND METHODOLOGICAL UNIT

### LITERATURE

#### Basic:

1. Essentials of General Surgery, Authors: Peter F. Lawrence MD, Richard M. Bell MD, Merrill T. Dayton MD, James C. Hebert MD FACS, 608P.
2. Schwartz's Principles of Surgery, Ninth Edition, Authors: F. Brunickardi, Dana Andersen), Timothy Billiar, David Dunn, John Hunter, Jeffrey Matthews, Raphael E. Pollock, 1888P.

#### Additional:

3. Clinical Surgery. Authors: Alfred Cuschieri, Pierce A. Grace, Ara Darzi, Neil R. Borley, David I. Rowley
4. Common Surgical Diseases, Second Edition. Authors: Jonathan A. Myers, Keith W. Millikan, Theodore J. Saclarides, Jonathan A. Myers, Keith W. Millikan, Theodore J. Saclarides.
5. Essential Practice of Surgery: Basic Science and Clinical Evidence. Author: Jeffrey A. Norton.
6. Greenfield's Surgery: Scientific Principles & Practice / Michael W. Mulholland [et. al.], 5th ed., 2010. 2074 p.

### LIST OF AVAILABLE DIAGNOSTIC TOOLS

The following forms are used for competence assessment:

1. Oral form:
  - interviews;
  - conference reports;
  - oral credits.
2. Written form:
  - tests;
  - control questioning;
  - control works;
  - essays.
3. Oral-written form:
  - examinations.
4. Technical form:
  - electronic tests.

### LIST OF EDUCATIONAL CASE HISTORY APROXIMATE THEMES

1. Acute and Chronic Appendicitis.
2. Abdominal Hernias of Different Sites.



3. Acute and Chronic Pancreatitis.
4. Gallstone Disease and its Complications.
5. Acute Intestinal Obstruction.
6. Complications of Peptic Ulcer Disease (perforation, obstruction, penetration, bleeding).
7. Blunt Abdominal and Chest Trauma.
8. Varicose Disease of Lower Extremities.
9. Occlusive Diseases of the Arteries.
10. Suppurative Diseases of the Lungs and Pleura, Spontaneous Pneumothorax.
11. Diseases and Burns of the Esophagus.
12. Diseases of Small and Large Intestine, and Rectum.
13. Diseases of the Breast.
14. Diseases of Endocrine Glands that Require Surgery.

### **LIST OF PRACTICAL SKILLS**

1. Physical examination of a surgical patient.
2. Determination of fluid in abdominal cavity.
3. Determination of peritoneal signs.
4. Determination of free gas in abdominal cavity.
5. Examination a patient with hernia.
6. Determination exudate in pericardium.
7. Determination the arterial pulses at low extremities.
8. Palpation of a thyroid gland.
9. Preparing a patient to radiography of stomach and intestine.
10. Gastric lavage.
11. Determination of blood group (with standard serum).
12. Blood and components transfusion.
13. Temporal bleeding arrest with a clamp, tourniquet, packing.
14. Primary surgical treatment of wounds.
15. Placing and taking out sutures.
16. Clean and infected wounds dressing.
17. Digital rectal examination.
18. Rectal examination with a speculum.
19. Prophylaxis and treatment of bedsore.
20. Performing the siphon enema.
21. Performing the cleansing enema.
22. Inserting the flatus tube.
23. Vein and arterial puncture.
24. Performing the venesection.
25. Occlusive dressing in open pneumothorax.

26. Performing the perinephral blockage.
27. Performing the sheath blockage.
28. Performing the proctosigmoidoscopy.
29. Reduction of rectum prolapse.
30. Reduction of hemorrhoid prolapse.
31. Using the needle-holder, inserting thread into the needle eye.
32. Using the scalpel.
33. Using the surgical scissors.
34. Suturing by surgical needle.
35. Using the syringe with needle.
36. Performing the local infiltrating anesthesia.
37. Operative field cleansing preparation.
38. Removal of drainages and pads from abdominal cavity.
39. Main surgical tools and their functions.
40. First aid in surgical burns of esophagus.
41. Performing a pleural puncture.
42. Performing a puncture of abdominal cavity.
43. Performing laparoscopy.
44. Performing closed-chest cardiac massage.
45. Performing artificial respiration.
46. First aid in asphyxia.
47. Drain the whitlow.
48. Drain the pulp space infection.
49. Drain the mammary abscess.
50. Drain the superficial abscesses.

### LIST OF PRACTICAL CLASSES

Section (topic) name	number of hours practical (laboratory or seminars)
7 <sup>th</sup> semester	
Current Issues in Surgery. Deontology in Surgery	2
Acute and Chronic Appendicitis, Complications of the Acute Appendicitis	6
Hernias	6
Acute Pancreatitis	6
Diseases of the Bile Ducts	6
Complications of the Gastroduodenal Ulcers	10
8 <sup>th</sup> semester	
Intestinal Obstruction	6
Peritonitis	5
Diseases of the Heart	5
Diseases of the Aorta	2
Diseases of the Arteries	2
Acute Arterial Obstruction	2
Venous Diseases of Extremities	6
Surgery of the Lymphatic System	1
Diseases of the Lungs and Pleura	6
Diseases of the Small Intestine	1
Diseases of the Large Intestine	2
Diseases of the Rectum	2
9 <sup>th</sup> semester	
Complications of the Acute Pancreatitis	2
Chronic Pancreatitis	3
Postcholecystectomy Syndrome	5
Diseases of the Liver	2
Cholestasis	5
Surgery of Parasitic Diseases	3
Portal Hypertension	5
Blunt Chest Trauma	2
Blunt Abdominal Trauma	3
Diseases of the Diaphragm	2
Diseases of the Spleen	3
10 <sup>th</sup> semester	
Transplantation of Organs and Tissues	5
Diabetes Mellitus in Surgery	5
Diseases of the Thyroid and Parathyroid Glands	5
Surgical Diseases of the Breast	5
Diseases of the Mediastinum	4

Diseases and Trauma of the Esophagus	6
Thrombosis and Thrombophlebitis of the Main Veins	3
Post-thrombotic disease	2
Total hours	146

### LIST OF LECTURES

Section (topic) name	number of hours practical (laboratory or seminars)
7 <sup>th</sup> semester	
Acute and Chronic Appendicitis, Complications of the Acute Appendicitis	2
Hernias	2
Acute Pancreatitis	2
Diseases of the Bile Ducts	2
Complications of the Gastroduodenal Ulcers	2
8 <sup>th</sup> semester	
Intestinal Obstruction	2
Peritonitis	2
Diseases of the Heart	2
Diseases of the Arteries, Acute Arterial Obstruction	2
Venous Diseases of Extremities	2
Diseases of the Lungs and Pleura	2
Diseases of the Small and Large Intestine, and the Rectum	2
9 <sup>th</sup> semester	
Complications of the Acute Pancreatitis, Chronic Pancreatitis	2
Cholestasis	2
Portal Hypertension	2
Blunt Chest Trauma	2
Blunt Abdominal Trauma	2
10 <sup>th</sup> semester	
Transplantation of Organs and Tissues	2
Diabetes Mellitus in Surgery	2
Diseases and Trauma of the Esophagus	2
Surgery of Parasitic Diseases	2
Total hours	42

**PROTOCOL OF THE CURRICULUM APPROVAL  
BY OTHER DEPARTMENTS<sup>3</sup>**

Title of the discipline requiring approval	Department	Amendments to the curriculum of the academic discipline	Decision of the department, which designed the curriculum (date, protocol # ) <sup>4</sup>
1. Anesthesiology and Reanimatology	Anesthesiology and Reanimatology	No	Recommended for approval (protocol #16 of 04.04.2016)
2. Traumatology and Orthopedics	Traumatology and Orthopedics	No	Recommended for approval (protocol #16 of 04.04.2016)

<sup>3</sup> The content of the curriculum should be approved by the departments for which the study of this particular discipline is required.

<sup>4</sup> If applicable.

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Curriculum content, composition and accompanying documents comply with established requirements.

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