

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

Petro Mohyla Black Sea National University

Medical Institute

Department surgical disciplines

“APPROVE”



First Vice-Rector

Shchepetko N. M.

2019

WORKING PROGRAM OF THE ACADEMIC DISCIPLINE

ENDOSCOPIC TECHNOLOGIES IN SURGERY,

Branch of knowledge 22 "Healthcare"

Specialty 222 "Medicine"

Developer	Zaborovskiy V. I.
Head of the developer department	Zack M.U.
Guarantor of the educational program	Klimenko M. A.
Director of the Institute	Grishchenko G. V.
Head of NMV	Shkirchak S.I.

## Description of the academic discipline

Naming of the indicator	Characteristics of the discipline	
Name of the discipline	Endoscopic technologies in surgery	
Area of expertise	22"Okhorona zdorov'ya"	
Specialization	222 "Medicine"	
Specialization (if any)		
Educational program	Medicine	
Higher education level	Master's Degree	
Discipline status		
Course of study	6th	
Academic year	2021-2022	
Semester numbers:	Full-time form	Correspondence form
	11th	
Total number of ECTS credits/hours	3 credit and / 90 hours	
Course structure:  <ul style="list-style-type: none"> <li>• lectures</li> <li>• practical exercises</li> <li>• hours of independent work of students</li> </ul>	Full-time form	Correspondence form
	-	
	2 0 hours.  7 0 hours.	
Percentage of audience load	22 %	
Language of instruction	english	
Interim control form (if any)		
Final control form	Dff. credit – 11th semester	

### 2. Purpose, objectives, and planned learning outcomes

**The purpose** of teaching / studying the academic discipline "Endoscopic technologies in surgery" is to improving knowledge on the diagnosis and treatment of various pathological conditions and diseases in surgery using endoscopic and other minimally invasive technologies.

#### **Learning objectives:**

1) to study the causes and mechanism of development, features of the clinical course and diagnosis of surgical diseases of the abdominal cavity by minimally invasive methods.

2) learn how to properly use surgical instruments, modern surgical devices and equipment of the minimally invasive operating unit.

3) master the basic techniques of performing therapeutic manipulations and surgical interventions using laparoscopic and other minimally invasive technologies.

4) consolidate practical skills on general principles and technical equipment of laparoscopic surgery, endoscopic anatomy of abdominal organs, technical difficulties, possible complications, their prevention and treatment.

### **Prerequisites for studying the discipline (intercommunication discipline).**

"Endoscopic technologies in surgery" as an academic discipline:

a) it is based on subjects previously studied by students such as "Anatomy", "Physiology", "Pathological Physiology", "General Surgery", "Endoscopy";

b) ensures the assimilation of theoretical and practical knowledge on methods of diagnosis and surgical treatment of surgical pathologies, according to the training program of a general doctor and integrates with these disciplines.

### **Expected learning outcomes. As a result of studying the discipline, students should::**

- Understand the importance of endoscopic technologies in surgery for medicine and the healthcare system, its place in the system of medical knowledge, have an idea of its formation, the main stages of development;
- Be able to combine the achievements of endoscopic technologies in surgery with other medical sciences in solving current problems of the etiology and pathogenesis of diseases.
- Understand the role of endoscopic technologies in the diagnosis of pathological processes and diseases, their capabilities, limitations and prospects.
- To use the results of endoscopic technologies in surgery for further planning of diagnostic studies, therapeutic and preventive measures.

According to the requirements of the educational and professional program, students must::

#### ***KNOW:***

- names and purposes of endoscopic instruments and equipment, sequence and rules of their use;
- methods of performing typical and most common laparoscopic surgical procedures on various organs and systems;
- indications, contraindications and possible complications in using laparoscopic methods of surgical interventions;

#### ***BE ABLE TO:***

- master the skills of organizing the regime and care of surgical patients, perform the necessary medical manipulations;
- correct use of laparoscopic surgical instruments, modern surgical devices and equipment of the surgical dressing unit;
- possess technical techniques for performing typical most common laparoscopic surgical interventions that are performed in this area or for diseases of the organ that is being studied.

### ***HAVE COMPETENCIES***

The developed program corresponds to the ***educational and professional program (OPP)*** and is focused on the formation of ***competencies***:

#### ***general (ZK) – ZK1-ZK3 AKI:***

- Ability to think abstractly, analyze and synthesize, learn and master modern knowledge.
- Ability to apply knowledge in practical situations.
- Knowledge and understanding of the subject area and understanding of professional activity.

#### ***professional (FC) – FC1-FC6, FC8-9, FC11, FC18 OPP:***

- Patient interviewing skills.
- Ability to determine the necessary list of laboratory and instrumental studies and evaluate their results.
- Ability to establish a preliminary and clinical diagnosis of the disease.
- Ability to determine the necessary mode of work and rest in the treatment of diseases.
- Ability to determine the nature of nutrition in the treatment of diseases.
- Ability to determine the principles and nature of treatment of diseases.
- Ability to determine the tactics of providing emergency medical care.
- Skills in providing emergency medical care.
- Skills in performing medical manipulations
- Ability to maintain medical records.

In accordance with the educational and professional program, the expected ***program learning outcomes (UES) are:*** enable the skill ***PRN11, PRN13-18, PRN22, PRN33 OPP:***

- Collect data on patient complaints, medical history, life history (including professional history), in the settings of a health care facility, its division, or at the patient's home, using the results of an interview with the patient, according to the standard patient survey scheme. Under any circumstances (in a healthcare institution, department, at the patient's home, etc.), using knowledge about the person, their organs and systems, according to certain algorithms:

- collect information about the general state of the patient (consciousness, constitution) and appearance (examination of the skin, subcutaneous fat layer, palpation of the lymph nodes, thyroid and mammary glands);
- examine the state of the cardiovascular system (examination and palpation of the heart and surface vessels, determination of the percutaneous boundaries of the heart and vessels, auscultation of the heart and vessels);

- examine the condition of the respiratory system (examination of the chest and upper legs). chest palpation, percussion and lung auscultation);

- examine the condition of the abdominal organs (examination of the abdomen, palpation and percussion of the intestines, stomach, liver, spleen, palpation of the pancreas, kidneys, pelvic organs, finger examination of the rectum);

- examine the musculoskeletal system (examination and palpation);
- examine the state of the nervous system;
- examine the state of the genitourinary system;

- In the context of a health care facility, its subdivision, and among the attached population:

- Be able to identify and record the leading clinical symptom or syndrome (according to list 1) by making an informed decision, using preliminary data from the patient's medical history, data from the patient's physical examination, knowledge about the person, his organs and systems, by adhering to the relevant ethical and legal standards.

- Be able to establish the most probable or syndromic diagnosis of the disease (according to list 2) by making an informed decision, using comparison with standards, using preliminary data from the patient's medical history and examination data, based on the leading clinical symptom or syndrome, using knowledge about the person, his organs and systems, by adhering to the relevant ethical and legal standards.

- In the context of a healthcare institution or its subdivision:

- Assign a laboratory and / or instrumental examination of the patient (according to list 4) by making an informed decision, based on the most probable or syndromic diagnosis, according to standard schemes, using knowledge about the person, his organs and systems, by adhering to the relevant ethical and legal standards.

- Perform differential diagnosis of diseases (according to list 2) by making an informed decision, according to a certain algorithm, using the most probable or syndrome diagnosis, data from laboratory and instrumental examination of the patient, knowledge about the person, his organs and systems, adhering to the relevant ethical and legal norms.

- Establish a preliminary clinical diagnosis (according to list 2) by making an informed decision and logical analysis, using the most probable or syndromic diagnosis, data from laboratory and instrumental examination of the patient, conclusions of differential diagnosis, knowledge about the person, his organs, etc. system, adhering to the relevant ethical and legal standards.

diseases (according to list 2), in the conditions of a health care facility, at home in determine the necessary work and rest regime during treatment - the patient and at the stages of medical evacuation, including in the field, based on a preliminary clinical diagnosis, using knowledge about the person, his organs and systems, adhering to appropriate ethical and legal standards, by making an informed decision according to existing algorithms and standard schemes.

standards, by making an informed decision on existing organs and systems, adhering to the relevant ethical and legal principles of clinical diagnosis, using knowledge about the person, hisstages of medical evacuation, including in the field on the basis of determine the necessary therapeutic nutrition in the treatment of the disease (according to list 2), in the conditions of a health care institution, at the patient's home, and according to algorithms and standard schemes.

standards, by making an informed decision on existing organs and systems, adhering to the relevant ethical and legal principles of clinical diagnosis, using knowledge about the person, his stages of medical evacuation, including in the field on the basis of:(according to list 2), in a health care facility, at the patient's home, and determine the nature of treatment (conservative, operative) of the disease-algorithms and standard schemes.

To determine the principles of treatment of the disease (according to the list 2), in terms of health, at the home of the patient and on the stages of medical evacuation, including the field, based on preliminary clinical diagnosis using knowledge of the man, his organs and systems, adhering to the relevant ethical and legal norms by making an informed decision on existing algorithms and standard schemes.

decisions and assessments of a person's condition, under any circumstances (at home, on the street, etc.)To establish the diagnosis (list 3) by making an informed - health care division), including in emergency situations, in the field, in terms of lack of information and limited time, using the standard techniques of physical examination and possible history, knowledge about a person, his organs and systems, adhering to the relevant ethical and legal standards.

- Perform medical manipulations (according to list 5) in a medical institution, at home or at work based on a preliminary clinical diagnosis and/or indicators of the patient's condition, using knowledge about the person, his organs and systems, adhering to appropriate ethical and legal standards, by making an informed decision and using standard methods.

- Determine the presence and degree of disability, the type, degree and duration of disability with the registration of appropriate documents, in the conditions of a health care institution based on data on the disease and its course, the features of a person's professional activity.

### **3. Academic discipline program**

The educational process is organized according to the European Credit Transfer and Accumulation System (ECTS).

The curriculum of the discipline consists of one block:

## **BLOCK 1. ENDOSCOPIC TECHNOLOGIES IN SURGERY**

### **SECTIONS:**

1. FUNDAMENTALS OF MINIMALLY INVASIVE SURGERY, ITS DIRECTIONS. DIAGNOSTIC LAPAROSCOPY. USLADNENNYA AT LAPAROSCOPY.
2. LAPAROSCOPIC TREATMENT OF PATHOLOGY OF THE ABDOMINAL CAVITY AND PERIARTHRAL SPACE. LAPAROSCOPIC DIAGNOSIS AND TREATMENT OF TUMORS.

## **BLOCK 1. ENDOSCOPIC TECHNOLOGIES IN SURGERY**

### **SECTION 1.**

FUNDAMENTALS OF MINIMALLY INVASIVE SURGERY, ITS DIRECTIONS. DIAGNOSTIC LAPAROSCOPY. USLADNENNYA AT LAPAROSCOPY.

#### **Topic 1. History of endoscopy development. Types and directions of minimally invasive surgery. Hardware support for endosurgical interventions.**

History of endoscopy development. Four stages of endoscopy development. The concept of laparoscopy. Types of minimally invasive interventions. Equipment for minimally invasive interventions. Optical systems, video cameras. Tools for minimally invasive interventions: for access, removal and removal of canines, fixation of tissues, rehabilitation and removal of tissues, to reduce the volume of organs, are removed. Modern methods of processing laparoscopes and instruments, their storage.

#### **Topic 2. Technique of endovideosurgical interventions. Complications of laparoscopy.**

Position of the patient on the operating table. Creating a pneumoperitoneum. Лапароліфтинг. Basic principles of performing laparoscopic operations. Complications of laparoscopy.

### **SECTION 2.**

# LAPAROSCOPIC TREATMENT OF PATHOLOGY OF THE ABDOMINAL CAVITY AND PERIARTHRAL SPACE. LAPAROSCOPIC DIAGNOSIS AND TREATMENT OF TUMORS.

## **Topic 3. Laparoscopic diagnosis and treatment of diseases of the genitourinary system.**

Basic principles laparoscopic diagnostics and performing laparoscopic operations on the organs of the genitourinary system, their complications.

## **Topic 4. Laparoscopic diagnosis and treatment of diseases of the hepatobiliary zone.**

Basic principles of laparoscopic diagnosis and treatment of diseases of the hepatobiliary zone.

Laparoscopic cholecystectomy, indications and contraindications for laparoscopic cholecystectomy, complications of laparoscopic cholecystectomy.

Technique of performing laparoscopic interventions on the liver, their complications.

## **Topic 5. Laparoscopic diagnosis and treatment hernias and benign diseases of the gastrointestinal tract.**

Laparoscopic hernioplasty. Intraperitoneal and preperitoneal hernioplasty.

Laparoscopic interventions for benign diseases of the esophagus and stomach. Fundoplication by Tupe. Operations for esophageal achalasia and their complications.

## **Topic 6. Laparoscopic diagnosis and treatment of malignant diseases of the hepatobiliary system.**

Types and methods of diagnosis in malignant diseases of the hepatobiliary system.

Technique of performing laparoscopic interventions in malignant diseases of the hepatobiliary system, their complications.

## **Topic 7. Laparoscopic diagnosis and treatment of malignant diseases gastrointestinal tract.**

Types and methods of diagnosis in malignant diseases of the gastrointestinal tract.



Technique of performing laparoscopic interventions in malignant diseases of the gastrointestinal tract, their complications.

### Structure of the academic discipline

Topic	Lectures	Practical lessons	Individual work of students	
<b>BLOCK 1. ENDOSCOPIC TECHNOLOGIES IN SURGERY</b>				
<b>Section 1.</b> Fundamentals of minimally invasive surgery, its directions. diagnostic laparoscopy. Usldnennya at laparoscopy.				
1. History of endoscopy development. Types and directions of minimally invasive surgery. Hardware support for endosurgical interventions.	-	2	4	Individual work - review of scientific literature
2. Technique of endovideosurgical interventions. Complications of laparoscopy.	-	2	10	
<b>Section 2.</b> Laparoscopic treatment of pathology of the abdominal cavity and periarticular space. Laparoscopic diagnosis and treatment of tumors.				
3. Laparoscopic diagnosis and treatment of diseases of the genitourinary system.	-	2	10	Individual work - review of scientific literature
4. Laparoscopic diagnosis and treatment of diseases of the hepatobiliary zone.		2	10	
5. Laparoscopic diagnosis and treatment hernias and benign diseases of the gastrointestinal tract.	-	4	10	
6. Laparoscopic diagnosis and treatment of malignant diseases of the hepatobiliary zone.		2	10	
7. Laparoscopic diagnosis and treatment of malignant diseases of the gastrointestinal tract.	-	4	10	
<b>FINAL CONTROL WORK BY BLOCK 1</b>	-	2	6	-

<b>Total hours – 90. ECTS credits – 3</b>		<b>20</b>	<b>70</b>	-
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#### 4. Content of the academic discipline

##### 4.1. Plan lectures

**(NOT PROVIDED BY THE PROGRAM)**

##### 4.2. Plan practical exercises

###### BLOCK 1

№ S. P.	TOPIC	Quantity hours
1.	<b>Topic 1.</b> History of endoscopy development. Types and directions of minimally invasive surgery. Hardware support for endosurgical interventions. Complications of laparoscopy.  For the lesson plan, see the note under the table.*	2
2.	<b>Topic 2.</b> Техника проведення ендовідеохірургічних втручань.	2
3.	<b>Topic 3.</b> Лапароскопічна діагностика і лікування захворювань сечовидільної системи.	2
4.	<b>Topic 4.</b> Лапароскопічна діагностика і лікування захворювань гепатобіліарної зони.	2
5.	<b>Topic 5.</b> Лапароскопічна діагностика і лікування гризів та доброякісних захворювань шлунково-кишкового тракту.	4
6.	<b>Topic 6.</b> Лапароскопічна діагностика і лікування злоякісних захворювань гепатобіліарної зони.	2
7.	<b>Topic 7.</b> Лапароскопічна діагностика і лікування злоякісних захворювань шлунково-кишкового тракту.	4
8.	<b>FINAL CONTROL WORK FOR BLOCK 1</b>	2
<b>TOGETHER</b>		<b>20</b>

Note. \* - Plan of each practical lesson:

- 1) Written solution of test tasks "Step-2" for the topic.
- 2) Group work on errors, at the same time an oral survey on the entire material of the topic.
- 3) Development of practical skills.
- 4) Knowledge assessment.

##### 4.3. Self-help tasks roboty

№ S. P.	TOPIC	Number of hours
<b>BLOCK 1: ENDOSCOPIC TECHNOLOGIES IN SURGERY</b>		
1.	Preparation for practical classes (theoretical training, practical skills development)	<b>34</b>
2.	Taking on-line courses and on-line testing	<b>10</b>
3.	Self-study of topics that are not included in the classroom plan <b>Block 1(list attached)</b>	<b>10</b>
4.	Individual work	<b>10</b>
5.	Preparing for the final test paper	<b>6</b>
<b>TOGETHER</b>		<b>70</b>

### BLOCK 1

1. Laparoscopic gastrostomy, indications and contraindications, technique, possible complications.
2. Laparoscopic jejunostomy
3. Indications and contraindications, technique, possible complications.
4. Laparoscopic colonostomy, indications and contraindications, technique, possible complications.
5. Laparoscopic drainage of the gallbladder and bile ducts, indications and contraindications, technique, possible complications.
6. Laparoscopic drainage of the abdominal cavity, indications and contraindications, technique, possible complications.

#### Individual tasks

Selection and review of scientific literature on the subject of the program on endoscopic technologies in surgery at the choice of the student with the writing of the abstract and its public defense.

Selection and review of scientific literature on the subject of research work of the department with the preparation of a scientific report at a meeting of the SSS or at student conferences.

The individual task is evaluated according to the criteria and points of a particular practical lesson (see the section below **6**), i.e. the maximum the score is 8.9 points.

**Typical test problems to solve in practical classes:**

1. For laparoscopy, the abdominal cavity can be filled in:

- A. Furatsilin solution
- B. By air
- C. With oxygen
- D. Nitrous oxide;
- E. Carbon dioxide.

2. Optimal gas pressure in the abdominal cavity during laparoscopy:

- A. 4 mmHg
- B. 8 mmHg
- C. 13 mmHg
- D. 20 mm Hg

3. Diagnostic laparoscopy is performed:

- A. To clarify the diagnosis
- B. To remove ascites
- C. For taking peritoneal biopsies
- D. For removing the gallbladder

4. Laparoscopy is contraindicated:

- A. With 1-2-degree obesity
- B. With spilled purulent peritonitis
- C. For penetrating wounds of the abdominal cavity;
- D. In severe coagulopathy;
- E. In severe cardiovascular diseases in the stage of decompensation.

5. Complications of laparoscopy are not considered:

- A. Bleeding
- B. Pneumothorax
- C. Gas embolism of the vascular bed;
- D. Acute cerebrovascular accident.

#### **4.4. Ensuring the educational process**

1. Multimedia projectors, computers, screens for multimedia presentations, lecture presentations.

2. Demo screens, laptops, files Power Point and Word with "Step-2" tasks for practical and final classes.

3. Tickets for differentiated credit

#### **4. Final control**

##### **List of issues of final control (differentiated credit)**

1. History of endoscopy development. Four stages of endoscopy development.
2. The concept of laparoscopy. Types of minimally invasive interventions.
3. Equipment for minimally invasive interventions. Optical systems, video cameras.
4. Tools for minimally invasive interventions: access, removal and removal of tissues.
5. Tools for minimally invasive interventions: for tissue fixation, sanitation.
  
6. Tools for minimally invasive interventions: to remove tissues, to reduce the volume of organs, are removed.
7. Modern methods of processing laparoscopes and instruments, their storage.
8. Position of the patient on the operating table.
9. Creating a pneumoperitoneum.
10. Laparolifting.
11. Basic principles of performing laparoscopic operations.

12. Complications during laparoscopy.
13. Basic principles laparoscopic diagnosis of pathology of the genitourinary system.
14. Basic principles performing laparoscopic operations on the organs of the genitourinary system.
15. Complications during laparoscopic operations on the genitourinary system.
16. Basic principles of laparoscopic diagnosis of diseases of the hepatobiliary zone.
17. Basic principles of laparoscopic treatment of diseases of the hepatobiliary zone.
18. Laparoscopic cholecystectomy, indications and contraindications for laparoscopic cholecystectomy.
19. Complications of laparoscopic cholecystectomy.
20. Technique of performing laparoscopic interventions on the liver.
21. Complications, arising when performing laparoscopic procedures on the liver.
22. Laparoscopic intraperitoneal hernioplasty.
23. Laparoscopic preperitoneal hernioplasty.
24. Laparoscopic interventions for benign diseases of the esophagus.
25. Laparoscopic interventions for benign diseases of the stomach.
26. Fundoplication by Tupe.
27. Laparoscopic operations for esophageal achalasia.
28. Complications, arising when performing laparoscopic procedures operations for esophageal achalasia.
29. Types and methods of diagnosis in malignant diseases of the hepatobiliary system.
30. Technique of performing laparoscopic interventions in malignant diseases of the hepatobiliary system.
31. Complications that occur when performing laparoscopic procedures in malignant diseases of the hepatobiliary system.
32. Types and methods of diagnosis in malignant diseases of the gastrointestinal tract.
33. Technique of performing laparoscopic interventions for malignant diseases of the gastrointestinal tract.
34. Complications that occur when performing laparoscopic procedures for malignant diseases of the gastrointestinal tract.
35. Laparoscopic gastrostomy, indications and contraindications, technique, possible complications.
36. Лапароскопическая єюнoстoмiя, indications and contraindications, technique, possible complications.
37. Laparoscopic colonostomy, indications and contraindications, technique, possible complications.
38. Laparoscopic drainage of the gallbladder and bile ducts, indications and contraindications, technique, possible complications.
39. Laparoscopic drainage of the abdominal cavity, indications and contraindications, technique, possible complications.

**"0" test ticket option**

**Petro Mohyla Black Sea National University**

Educational and qualification level-Master's degree

Branch of knowledge: 22 Healthcare

specialty 222 Medicine

Academic discipline-**ENDOSCOPIC TECHNOLOGIES IN SURGERY**

**Option # 0**

1. Tools for minimally invasive interventions: access, opening and closing of tissues, tissue fixation. - **the maximum number of points is 20.**
2. Laparoscopic cholecystectomy, indications and contraindications for laparoscopic cholecystectomy. - **the maximum number of points is 20.**
3. Technique of performing laparoscopic interventions for malignant diseases of the gastrointestinal tract. - **the maximum number of points is 20.**
4. Laparoscopic drainage of the abdominal cavity, indications and contraindications, technique, possible complications. - **the maximum number of points is 20.**

*Approved at the Department meeting "therapeutic and surgical disciplines",*

*protocol no. \_\_\_-\_\_from" \_\_\_" \_\_\_\_\_ 2021 city of*

**Head of the department prof. Tarasenko O.M.**

**Examiner**

**Example of the final control work for block 1**

**Solving problems Step-2**

1. A 28-year-old patient was taken to the emergency department on day 2 after the onset of the disease with complaints of sharp epigastric pain that makes breathing difficult and radiates to the left hypochondrium and heart area against the background of repeated vomiting, stool retention and gases. Upon admission, the condition is serious. Excited. Cyanotic spots on the sides of the abdomen, buttocks and thighs. Body temperature 36.5 C, shortness of breath up to 32, shallow breathing, weak pulse 140 in 1 minute, blood pressure 90/60 mmHg. Heart tones are weakened. The abdomen is slightly swollen, soft, and sharply painful in the epigastrium and left hypochondrium. Peristalsis is weakened, the aortic pulsation above the navel is not detected. In the sloping areas of the abdominal cavity during percussion, bluntness, weakly expressed peritoneal symptoms. Leukocytosis - 18 thousand. Urine diastasis -4096 units. What diagnostic method will you prescribe?

- A. X-ray examination of the stomach.
- B. Irrigoscopies
- C. Esophagogastroduodenoscopy.
- D. Laparoscopy.

2. Patient N., 32 years old, is being treated in the trauma department for a compression fracture of the spine without neurological disorders. Medical history: three days ago I fell from a height of 3 floors. Complaints about the absence of stool and gas discharge for three days, bloating, moderate abdominal pain. The condition is of moderate severity. Ps-72 in 1 min. The abdomen is moderately swollen, there is no asymmetry, and it participates in the act of breathing. Palpation is mild, moderately painful in all parts. There are no peritoneal signs or muscle tension. What diagnostic method will you prescribe?

- A. Rectal examination.
- B. Ultrasound of the abdominal organs
- C. Conducting a barium passage sample in GIT
- D. X-ray examination of the abdominal organs
- E. Laparoscopy
- D. Everything in the complex

3. During diagnostic laparoscopy, an excessive amount of glare appeared in the image, which interfered with the surgeon's work. What should a surgeon do to perform a high-quality laparoscopy?

- A. Adjust "white balance" in the camera or video block options
- B. Check that the light guide is connected correctly
- C. Manually increase the intensity of the light source



D. Manually reduce the brightness of the light source

4. A 56-year-old patient was admitted to the emergency department on the 4th day after the onset of the disease with complaints of sharp epigastric pain that makes breathing difficult and radiates to the right hypochondrium. At the same time, it was noticed that the patient turned sharply yellow. During diagnostic laparoscopy, the doctor identified the cause of the patient's condition. It was:

A. Compression of the choledochus by the head of the pancreas

B. Hemolysis of red blood cells

C. Toxic damage to liver cells

D. Concomitant choledocholithiasis

5. During diagnostic laparoscopy, the surgeon raised the pressure in the abdominal cavity to the optimal value for applying the primary carboxyperitoneum. What should be the pressure?

A. 3 atm.

B. 5 mmHg

C. 13 mmHg

D. 20 mmHg

**And so 20 tasks with the subsequent analysis of typical errors.**

## **6. Evaluation criteria and diagnostic tools for learning outcomes**

### **Control methods**

- Survey (testing of theoretical knowledge and practical skills).
- Test control.
- Writing a review of scientific literature (essays), performing individual tasks, and defending them.

**Current control.** Testing in practical classes of theoretical knowledge and development of practical skills, as well as the results of independent work of students. They are supervised by teachers according to the specific purpose of the curriculum. Assessment of the level of students' training is carried out by interviewing students, solving and analyzing situational problems and test tasks, interpreting the results of experimental and clinical laboratory studies, and monitoring the assimilation of practical skills.

**Intermediate control.** Checking the possibility of using students' theoretical knowledge and practical skills on all the topics studied, as well as the results of independent work of students for clinical and diagnostic analysis. Performed at the last lesson by section by passing practical skills, solving situational problems and testing.

**Final control work** It is held upon completion of the study of all topics of the block at the last control lesson of the semester.

Students who have attended all the lectures and classroom classes provided for in the curriculum, who have completed independent work in full, and who have scored no less than the minimum number of points in the course of training are allowed to complete the final control (differentiated credit). – **40 points.**

### Distribution of points awarded to students

**In the semester, a positive score for each practical lesson can be from 4.4 to 8.9 points. A score below 4.4 points means "unsatisfactory", classes are not counted and are subject to testing in accordance with the established procedure.** A student can get a maximum of 40 points on the final control work (RCC) in block 1. The RPC is considered valid if the student scores at least 30 points.

#### Assessment of student performance

Type of activity (task)	Maximum number of points
<b>Block 1</b>	
Topic 1	8,9
Topic 2	8,9
Topic 3	8,9
Topic 4	8,9
Topic 5	8,9
Topic 6	8,9
Topic 7	8,9
Topic 8	8,9
Topic 9	8,9
Together	80
Final control work for block 1	40
Total for block 1	120
Differentiated credit	80
Together with block 1 and with differential credit	200

In order to evaluate the results of training using endoscopic technologies in surgery, a final control is carried out in the form of a differentiated test. Only students who have completed the final control work (in block 1) in the discipline are allowed to take the differential test.

### **Criteria for evaluating knowledge**

**Score 8.9 points in the semester, 38-40 points on the RPC and 71-80 points on the differential test (A on the ECTS scale and 5 on the national scale)** the student's answer is evaluated if it demonstrates a deep knowledge of all theoretical provisions and the ability to apply theoretical material for practical use and does not have any inaccuracies.

**Grades 6-8 in the semester, 35-37 in the RPC and 61-70 in the differential assessment (B and C on the ECTS scale and 4 on the national scale)** the answer is evaluated if it shows knowledge of all theoretical propositions and the ability to apply them practically, but some fundamental inaccuracies are allowed.

**By rating 4.4-5 points in the semester, 30-34 points on the RPC and 50-60 points on the differential test (D and E on the ECTS scale and 3 on the national scale)** the student's answer is evaluated on the condition that he knows the basic theoretical provisions and can use them in practice.

## **7. Recommended sources of information**

### **7.1. Main features**

1. Video endoscopic operations / Zaporozhan V. N., Grubnik V. V., Saenko V. F., Nichitailo N.E. // K., "Zdorovya", 2000. - 304 p.
2. Laparoscopic surgery of the biliary tract / Kovalchuk L. Ya., Polishchuk V. M., Nichitailo N. Yu., Kovalchuk A. L. // Ternopil-Rivne: Vertex, 1997. - 155 p .

### **7.2. Auxiliary services**

1. Faculty surgery // ed. by V. A. Shidlovsky, M. P. Zakharash. – Тернопіль, Укрмедкнига, 2002. – 544 с.
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### **7.3. Information resources on the Internet**

1. <http://moodle.tdmu.edu.ua/course/view.php?id=2077>
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