

DANYLO HALYTSKY LVIV NATIONAL MEDICAL UNIVERSITY  
DEPARTMENT OF SURGERY № 1

"APPROVED"



First vice-rector  
on Educational and Pedagogical Affairs at  
Danylo Halytsky  
Lviv National Medical University  
associate professor I.I. Solonyenko

*I.I. Solonyenko*

19 September

2023

WORK PROGRAM

"SURGERY" (Educational component 29.1)  
for training of specialists of the second (master's) level of high education  
branch of knowledge 22 "Healthcare"  
4<sup>th</sup>-year students of speciality 222 "Medicine"

"APPROVED"

at the meeting of the Department of Surgery № 1  
meeting report № 15  
12 April 2023  
Chairman of the Department of Surgery № 1

*[Signature]*  
\_\_\_\_\_ prof. O.V. Lukavetsky

"APPROVED"

at the meeting of the Surgical Methodological  
Commission of Danylo Halytsky Lviv National  
Medical University meeting report № 20  
27 April 2023  
Chief of Surgical Methodological Commission

*[Signature]*  
\_\_\_\_\_ prof. V.P. Andryushchenko

"APPROVED"

Dean of Faculty of Foreign Students  
Danylo Halytsky  
Lviv National Medical University  
associate professor E.S. Varyvoda

*[Signature]*  
\_\_\_\_\_ 2023

Lviv 2023

In accordance with the Order of the Rector of Danylo Halytsky Lviv National Medical University "On the implementation of the training plan for applicants of the second (master's) level of higher education in the specialty 222 Medicine", No. 656-z dated February 15, 2023, changes were made to the Work Program of the academic discipline "Surgery" for students of the 4th year of the Faculty of General Medicine for the 2023-2024 academic year.

Work sections	Academic year	
	2022-2023	2023-2024
Lectures (hours)	<b>10</b>	<b>10</b>
Classes (hours)	<b>58</b>	<b>58</b>
Outclasses work (hours)	<b>67</b>	<b>67</b>
Total amount of hours	135	135
Credits	4,5	4,5
Number of Classes	15	15
Form of control	<b>Current study control</b>	<b>Current study control</b>

#### DEVELOPERS OF PROGRAMME:

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#### REVIEWERS:

I.I. Kobza, doctor of medical sciences, professor, Chairman of the Department of Surgery №2;

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## 1. INTRODUCTION

### **Work program of the academic discipline "Surgery"**

in accordance with the Standard of higher education of the *second (master's) level*, branch of knowledge 22 "*Healthcare*", speciality 222 "*Medicine*" of the educational program of the *master of medicine*.

### **Description of the academic discipline**

"Surgery" is a branch of medical science that studies the etiology and pathogenesis of surgical diseases, develops and improves methods of early diagnosis, treatment and prevention, improves methods of correction of surgical diseases; develops measures aimed at shortening periods of temporary incapacity for work and reducing disability.

The academic discipline "Surgery" provides an opportunity for students of the medical faculty in the 4<sup>th</sup> year of study to acquire knowledge, skills and practical skills that enable the specialist to quickly and correctly navigate situations when patients have surgical pathology. Mastery of the discipline is based on knowledge acquired by students in the process of studying other basic medical subjects. When mastering the discipline "Surgery", it is rational to introduce into the educational process modern world developments and standards on the main issues of surgery with wide use of means of complex practical-oriented training.

Educational program for "Surgery" for the 4<sup>th</sup>-year students of speciality 222 "Medicine" was processed based on the typical curriculum of discipline "Surgery" for higher medical educational institutions of Ukraine III-IV accreditation levels, which have been prepared by staff of the Department of Surgery #4 of the Bogomolets National Medical University reference for the discipline of "Surgery", taking into account continuous typical program in the discipline "Surgery" from the 2008, typical programs of faculty, clinical surgery, the subject "Surgical Diseases" and program for the speciality of surgery 222 "Medicine" in branch of knowledge 22 "Healthcare".

The program was made in accordance with the following existing regulation documents:

- Educational Qualification Characteristics (EQC), Educational and Occupational Programs (EOP) of specialists' training are approved by order of Ministry of Education and Science of Ukraine (MES) 16.04.03 №239 "Approval of the components of education standards of 1101 "Medicine";
- Experimental curriculum which is based on the principles of the European Credit Transfer System (ECTS) and approved by order of the Ministry of Healthcare of Ukraine №52, 31.01.2005 of "Approval and introduction of new curriculum of training of the educational-qualification level - "Specialist", qualification - "Medical Doctor" at the high educational institutions of III-IV levels of accreditation of Ukraine of such specialties as "Curative Medicine" and "Stomatology";
- The recommendations of development of the curriculum which are approved by the Ministry of Healthcare of Ukraine March 24,2004, №152 "Approval of the recommendations of development of the curriculum of the educational subjects", are followed with changes and supplements which were introduced by the order of Ministry of Healthcare of Ukraine from 12.10.2004, №492 "Changes and supplements to the recommendations of development of the curriculum of the educational subjects";
- The order of the Ministry of Healthcare of Ukraine, 31.01.2003, №148 "The implementation measures of the Bologna Declaration of the high education and science";
- The instruction of evaluation system of learning activities of students in accordance with the credit-modular system of education (Medical education in the world and in Ukraine which was approved by the Ministry of Healthcare of Ukraine as a study guide for teachers, masters, graduate and postgraduate education, Kyiv, Book-plus., 2005);
- The order of the Ministry of Healthcare of Ukraine, 17.05.2006, № 281 "The changes in the curriculum of training of the educational-qualification level - "Specialist",

qualification - "Medical Doctor" at the high educational institutions of III-IV levels of accreditation of Ukraine, approved by the Ministry of Healthcare of Ukraine from 31.01.05 № 52;

- The order of the Rector of the Danylo Halytsky Lviv National Medical University "On the implementation of the training plan for applicants of the second (master's) level of higher education in the specialty 222 Medicine", No. 656-z dated February 15, 2023

The program of the discipline "Surgery" is divided into sections, which, in turn, are divided into subdivisions. In the fourth year, medical students are expected to study the section - "Abdominal Surgery".

**Chapter. Abdominal surgery:**

1. Urgent abdominal surgery;
2. Surgical gastroenterology, proctology and transplantology.

### Objectives of academic discipline

Structure of the discipline	Hours which include				Year of study	Type of control
	Total	Auditorium		SSW		
		Lectures	Practical classes			
<b>Chapter.</b> Abdominal surgery <b>Subchapter:</b> 1. Urgent abdominal surgery; 2. Surgical gastroenterology, proctology and transplantology.	135 hours/ 4,5 credits	10	58	67	4	Current control

Comment: 1 credit ECTS – 30 hours.

**The subject of study of the academic discipline** is the main manifestations of surgical diseases, diagnosis, differential diagnosis and the basic principles of treatment of patients with surgical pathology.

**Interdisciplinary connections:** human anatomy, topographical anatomy, operative surgery, general surgery, pathomorphology, pathological physiology, biochemistry, pharmacology, anesthesiology and intensive care.

**The purpose of studying of surgery** – learning theoretical and practical knowledge of the etiology, pathogenesis, typical and atypical clinical presentation, diagnostic methods, conservative and surgical treatment, and rehabilitation of surgical pathology, that meet general practitioner training considering its specialty features.

#### Final objectives of the discipline:

1. Identify the most common symptoms and syndromes in patients with surgical diseases.
2. Identify the major etiological and pathogenetic factors of the most common surgical diseases.
3. Demonstrate the ability to perform the required medical manipulations.
4. To demonstrate the moral and ethical principles of medical specialist and principles of professional subordination in surgery.
5. Diagnose and provide medical care in urgent conditions for patients with surgical diseases.
6. To carry out the prognosis of life and ability to work for the most common surgical diseases.
7. Classify and analyze the typical clinical picture of the most common surgical diseases.
8. Make up a plan of examination and analyze data from laboratory and instrumental investigations in patients with typical clinical course of the most common surgical diseases.
9. To explain the general principles of treatment, rehabilitation and prevention of the most common surgical diseases.
10. Identify tactics (principles of surgical interventions and conservative treatment, rehabilitation) with the most common surgical diseases and their complications.
11. To demonstrate the moral and ethical principles of medical specialist and principles of professional subordination in surgery.

12. Identify different clinical variants and complications of the most common surgical diseases.
13. Provide emergency medical care with the most common surgical diseases.
14. Plan examination of the patient, interpret the results of laboratory and instrumental examinations for the most common surgical diseases and their complications.
15. To carry out differential diagnosis, justify and formulate preliminary diagnosis of the most common surgical diseases.
16. Conduct primary and secondary prevention of the most common surgical diseases.
17. To determine a plan of conservative and operative treatment of surgical diseases depending on the pathogenetic factors and the severity of the patients condition.
18. Create a professional rehabilitation plan for patients with common surgical diseases.
19. Demonstrate the ability to conduct medical records at the clinic of surgical diseases.
20. To diagnose complicated and atypical forms of the most common surgical diseases.
21. Provide medical care in urgent conditions at the clinic of surgical diseases and perform urgent surgical manipulations and operations.
22. Planning scheme of examination of particular patient depending on the clinical features of the disease.
23. To carry out differential diagnosis of the most common surgical diseases in urgent and elective surgery.

According to the requirements of the Higher Education Standard, the discipline ensures that students acquire the following *competencies*:

#### Competency matrix

No	Competency	Knowledge	Skills	Communication	Autonomy and responsibility
<b>General competences</b>					
1.	Ability to abstract thinking, analysis and synthesis.	+	+	+	+
2.	Ability to learn and master modern knowledge.	+	+	+	+
3.	Ability to apply knowledge in practical situations.	+	+	+	+
4.	Knowledge and understanding of the subject area and understanding of professional activity.	+	+	+	+
5.	Ability to adapt and act in a new situation.	+	+	+	+
6.	Ability to make informed decisions.	+	+	+	+
7.	Ability to work in a team.	+	+	+	+
8.	Ability to interpersonal interaction.	+	+	+	+
10.	Ability to use information and communication technologies.	+	+	+	+
11.	Ability to search, process and analyze information from various sources.	+	+	+	+
12.	Determination and persistence in relation to assigned tasks and assumed responsibilities.	+	+	+	+

13.	Awareness of equal opportunities and gender issues.	+	+	+	+
14.	The ability to realize one's rights and responsibilities as a member of society, to be aware of the values of a civil (free democratic) society and the need for its sustainable development, the rule of law, the rights and freedoms of a person and a citizen in Ukraine.	+	+	+	+
15.	The ability to preserve and multiply moral, cultural, scientific values and achievements of society based on understanding the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, technology and technologies, to use various types and forms of motor activity for active recreation and leading a healthy lifestyle.	+	+	+	+
<b>Professional competencies of the specialty</b>					
1.	Ability to collect medical information about the patient and analyze clinical data.	+	+	+	+
2.	Ability to determine the necessary list of laboratory and instrumental studies and evaluate their results.	+	+		+
3.	Ability to establish a preliminary and clinical diagnosis.	+	+	+	+
4.	The ability to determine the necessary regime of work and rest in the treatment and prevention of diseases.	+	+	+	+
5.	The ability to determine the nature of nutrition in the treatment and prevention of diseases.	+	+	+	+
6.	Ability to determine the principles and methods of treatment and prevention of diseases.	+	+	+	+
7.	Ability to diagnose emergency conditions.	+	+	+	+
8.	Ability to determine tactics and provide emergency medical care.	+	+	+	+
9.	Ability to carry out medical evacuation measures.	+	+	+	+
10.	Ability to perform medical manipulations.	+	+	+	+

11.	Ability to solve medical problems in new or unfamiliar environments in the presence of incomplete or limited information, taking into account aspects of social and ethical responsibility.	+	+	+	+
15.	The ability to conduct an examination of working capacity.	+	+	+	+
16.	Ability to maintain medical documentation, including electronic forms.	+	+	+	+
21.	Clearly and unambiguously communicate own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists, in particular to people who are studying.	+	+	+	+
24.	Adherence to ethical principles when working with patients and laboratory animals.	+	+	+	+
25.	Adherence to professional and academic integrity, to be responsible for the reliability of the obtained scientific results.	+	+	+	+
<b>Program learning outcomes</b>					
1.	Have thorough knowledge of the structure of professional activity. To be able to carry out professional activities that require updating and integration of knowledge. To be responsible for professional development, the ability for further professional training with a high level of autonomy.				
2.	Understanding and knowledge of basic and clinical biomedical sciences, at a level sufficient for solving professional tasks in the field of health care.				
3.	Specialized conceptual knowledge that includes scientific achievements in the field of health care and is the basis for conducting research, critical understanding of problems in the field of medicine and related interdisciplinary problems.				
4.	Identify leading clinical symptoms and syndromes (according to list 1); according to standard methods, using preliminary data of the patient's history, data of the patient's examination, knowledge about the person, his organs and systems, establish a preliminary clinical diagnosis of the disease (according to list 2).				
5.	Collect complaints, past medical history and history of the disease, assess the psychomotor and physical development of the patient, the state of organs and systems of the body, based on the results of laboratory and instrumental studies, evaluate information about the diagnosis (according to list 4), taking into account the age of the patient.				
6.	To establish the final clinical diagnosis by making a reasoned decision and analyzing the received subjective and objective data of clinical, additional examination, carrying out differential diagnosis, observing the relevant ethical and legal norms, under the control of the head physician in the conditions of the health care institution (according to the list 2).				
7.	Assign and analyze additional (mandatory and optional) examination methods (laboratory, functional and/or instrumental) (according to list 4), patients with diseases of organs and body systems for differential diagnosis of diseases (according to list 2).				



8.	Determine the main clinical syndrome or what causes the severity of the victim/victim's condition (according to list 3) by making a reasoned decision and assessing the person's condition under any circumstances (in the conditions of a health care facility, outside its boundaries), including in the conditions emergencies and hostilities, in field conditions, in conditions of lack of information and limited time.
9.	Determine the nature and principles of treatment (conservative, operative) of patients with diseases (according to list 2), taking into account the age of the patient, in the conditions of a health care institution, outside its borders and at the stages of medical evacuation, including in field conditions, on the basis of a previous clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes, in case of the need to expand the standard scheme, be able to substantiate personalized recommendations under the control of the head physician in the conditions of a medical institution.
10.	Determine the necessary mode of work, rest and nutrition of the patient based on the preliminary and/or final clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standards.
14.	Determine tactics and provide emergency medical care for emergency situations (according to list 3) in limited time conditions according to existing clinical protocols and standards.
15.	To organize the provision of medical aid and medical evacuation measures to the population and military personnel in emergency situations and combat operations, including in field conditions.
16.	Form rational medical routes for patients; organize interaction with colleagues in their own and other institutions, organizations and institutions; apply tools for the promotion of medical services on the market, based on the analysis of the needs of the population, in the conditions of the functioning of the health care institution, its division, in a competitive environment.
17.	Perform medical manipulations (according to list 5) in the conditions of a medical institution, at home or at work based on a previous clinical diagnosis and/or indicators of the patient's condition by making a reasoned decision, observing the relevant ethical and legal norms.
18.	To determine the state of functioning and limitations of a person's vital activities and the duration of incapacity for work with the preparation of relevant documents, in the conditions of a health care institution, based on data about the disease and its course, peculiarities of a person's professional activity, etc. Maintain medical documentation regarding the patient and the contingent of the population on the basis of regulatory documents.
19.	Plan and implement a system of anti-epidemic and preventive measures regarding the occurrence and spread of diseases among the population.
21.	Search for the necessary information in the professional literature and databases of other sources, analyze, evaluate and apply this information.
22.	Apply modern digital technologies, specialized software, statistical methods of data analysis to solve complex healthcare problems.
25.	Clearly and unambiguously to convey one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists.
26.	Manage healthcare workflows that can be complex, unpredictable and require new strategic approaches; to organize the work and professional development of personnel taking into account the acquired skills of effective team work with adherence to leadership positions, appropriate quality, accessibility and fairness, ensuring the provision of integrated medical care.
27.	Communicate freely in the national and English languages both orally and in writing to discuss professional activities, research and projects.
28.	Make effective decisions about health care problems, evaluate the necessary resources, take into account social, economic and ethical consequences.

### **Learning outcomes:**

Integrative final program learning outcomes, the formation of which is facilitated by the educational discipline: apply knowledge in practical situations; perform experimental research and

demonstrate skills in professional subjects, adapt to new situations, work effectively both autonomously and as part of a team; to be responsible for the work performed in order to achieve the set goal; use information and communication technologies to solve various research and professional tasks; search for information in various sources to solve the problems of the specialty, make informed decisions with an assessment of their consequences, show the ability for public, business and scientific communications; adhere to the code of professional ethics, moral norms and values, rules of etiquette, understand the basic principles of labor protection and life safety in the field of professional activity; to have techniques for providing medical care for various types of surgical pathology; the ability to make a diagnosis, to choose appropriate medical and diagnostic manipulations, to provide emergency care to patients with surgical pathology.

Learning outcomes for the discipline: mastering the basic principles of organizing surgical care for the population of Ukraine, clinical and laboratory and additional methods of diagnosing surgical pathology of the body; etiology, pathogenesis, clinic, diagnosis and methods of treatment of surgical diseases (within the curriculum); etiological, pathogenetic factors, clinical manifestations and diagnosis of emergency conditions; emergency surgical care tactics; organization of medical evacuation measures; carrying out the main methods of the general clinical examination of the patient (survey, examination, palpation, auscultation), determining the scope of additional studies and analyzing the obtained data to establish a preliminary diagnosis; performing general medical manipulations (bandages, injections, gastric lavage, stopping bleeding, local anesthesia, etc.); providing the necessary assistance in case of short-term loss of consciousness, collapse, maintaining medical records.

## 2. INFORMATION VOLUME OF THE ACADEMIC DISCIPLINE.

4,5 ECTS credits (135 hours) are assigned to the study of the academic discipline.

## 3. STRUCTURE OF THE ACADEMIC DISCIPLINE "SURGERY", SECTION "ABDOMINAL SURGERY", SPECIALTY "MEDICINE".

Topics	Hours		
	Lectures	Practical classes	SSW
<b>Subchapter. Urgent abdominal surgery.</b>			
<b>Topic 1.</b> Acute appendicitis	2	2	4
<b>Topic 2.</b> Atypical clinical course of acute appendicitis.	-	4	4
<b>Topic 3.</b> Acute cholecystitis.	2	4	4
<b>Topic 4.</b> Complications of acute cholecystitis.	-	4	6
<b>Topic 5.</b> Etiology, pathogenesis and classification of acute pancreatitis. Complications of acute pancreatitis.	2	4	4
<b>Topic 6.</b> Chronic pancreatitis.	-	4	4
<b>Topic 7.</b> Complications of peptic ulcer disease.	-	4	4
<b>Topic 8.</b> Gastro-intestinal bleeding.	-	4	4
<b>Topic 9.</b> Acute bowel obstruction.	2	4	4

<b>Topic 10.</b> Etiology, pathogenesis and classification of peritonitis.	-	4	4
<b>Subchapter. Surgical gastroenterology, proctology and transplantology.</b>			
<b>Topic 11.</b> Classification of abdominal hernias.	2	4	4
<b>Topic 12.</b> Liver diseases.	-	4	6
<b>Topic 13.</b> Abscesses and cysts of liver.	-	4	4
<b>Topic 14.</b> Diseases of the small and large intestine. Rectum and perineum diseases.	2	4	4
<b>Topic 15.</b> Inpatient medical record. Practical skills	-	4	7
Total	10	58	67
Final control	Current control		

#### 4. THEMATIC PLAN OF LECTURES ON THE DISCIPLINE "SURGERY" SECTION "ABDOMINAL SURGERY"

No	TOPIC	HOURS
1.	Acute appendicitis and its complications.	2
2.	Acute cholecystitis and its complications.	2
3.	Acute pancreatitis and its complications.	2
4.	External and internal abdominal hernias and their complications.	2
5.	Bowel obstruction.	2
Total		10

#### 5. THEMATIC PLAN OF PRACTICAL CLASSES ON THE DISCIPLINE "SURGERY" SECTION "ABDOMINAL SURGERY"

No	Topic	Hours
1.	Acute appendicitis. Anatomy and physiology. Etiology and pathogenesis. Classification. Clinical signs, diagnosis, differential diagnosis. Treatment.	2
2.	Atypical clinical course of acute appendicitis. Complications of acute appendicitis and appendectomy. Treatment of acute appendicitis complications.	4
3.	Acute cholecystitis. Anatomy and physiology of bile ducts. Etiology and pathogenesis. Classification. Clinical signs, diagnosis, differential diagnosis. Treatment. Methods of surgical treatment.	4
4.	Acute cholecystitis and cholecystectomy complications. Diagnosis and surgical treatment. The role of minimally invasive procedures in diagnosis and treatment of these complications. Jaundice as a surgical problem. Clinical manifestations, methods of examination, differential diagnosis, principles of treatment. Postcholecystectomy syndrome.	4
5.	Etiology and pathogenesis, classification of acute pancreatitis. Clinic course of mild and severe acute pancreatitis, methods of diagnosis, differential diagnosis.	4

	Acute pancreatitis complications. Modern management of acute pancreatitis. Conservative treatment, indications for surgical treatment. Methods of conventional and minimally invasive surgical treatment.	
6.	Chronic pancreatitis. Clinical signs, diagnosis, complications, treatment. Pancreatic cysts and fistulas: surgical treatment. Limitation of the patient's functioning and vital activities. Spleen diseases: diagnosis and treatment.	4
7.	Complications of peptic ulcer disease: perforation, gastric outlet obstruction, penetration, malignization. Etiology, pathogenesis, classification, diagnosis, treatment tactics, types of operations. Principles of preoperative preparation of patients.	4
8.	Gastro-intestinal bleeding. Etiology, clinical manifestations, laboratory and endoscopic diagnosis, differential diagnosis, treatment.	4
9.	Acute bowel obstruction. Etiology and pathogenesis. Classification. Clinical picture. Diagnosis. Differential diagnosis. Clinical picture of different types of bowel obstruction. Conservative and surgical treatment.	4
10.	Acute peritonitis. Etiology and pathogenesis. Classification. Clinical picture. Treatment.	4
11.	Abdominal hernia classification. Etiology and pathogenesis. Clinical picture. Principles of surgical treatment. Complications.	4
12.	Liver diseases. Fibrosis, cirrhosis of liver. Liver insufficiency. Conservative and surgical methods of portal hypertension treatment. Limitation of the patient's functioning and vital activities. Indications and contraindications for liver transplantation. Methods of donor selection. Techniques of liver transplantation. Conditions of storing donor liver and transportation.	4
13.	Liver abscesses, parasitic and non-parasitic cysts: etiology, clinical signs, methods of examination, complications, treatment tactics.	4
14.	Small and large intestine diseases. Ulcerative colitis. Crohn's disease. Diverticular disease of colon. Polyps of colon. Indications for transplantation of intestine. Rectum diseases: haemorrhoids, paraproctitis, prolapse of rectum. Diseases of perineum.	4
15.	Inpatient medical record. Practical skills.	4
Total		58

**6. TOPICS OF STUDENTS' SELF-TRAINING WORK (OUTCLASSES WORK) (INCLUDING INDIVIDUAL WORK) ON THE DISCIPLINE "SURGERY" SECTION "ABDOMINAL SURGERY"**

No	Topic	Hours	Form of control
1.	Preparations for the classes. Learning and training of practical skills	34	The current control on practical lessons
2.	Independent processing topics not included in the plan of classes: 1. International classification of functioning, disability and health.	10	Current control on practical lessons

	<ol style="list-style-type: none"> <li>2. Blunt and penetrating injuries of the abdominal organs.</li> <li>3. Primary sclerosing cholangitis.</li> <li>4. Postresective and postvagotomy syndromes.</li> <li>5. Syndrome of malabsorption, maldigestion.</li> <li>6. Abdominal compartment syndrome.</li> <li>7. Relaparotomy and laparostomy in the treatment of diffuse peritonitis.</li> <li>8. Differential diagnosis of ascitis.</li> <li>9. Differential diagnosis hepatolienal syndrome.</li> <li>10. Differential diagnosis of colitis.</li> </ol>		
3.	<p>Individual independent work:</p> <ol style="list-style-type: none"> <li>1. Literature review by choice.</li> <li>2. Working in student scientific circle.</li> <li>3. Participation in competitions and Olympiads in surgery.</li> <li>4. Participation in the writing of scientific articles and reports.</li> <li>5. Supervision of patients.</li> </ol>	19	The current control on practical lessons
4.	Features of patients management in the terminal stage of the disease, counselling, care, palliative treatment methods	4	The current control on practical lessons
Total		67	

**7. THE INDIVIDUAL EDUCATIONAL AND RESEARCH TASK** involves students writing an academic inpatient medical record and conducting its defense in a practical class, which is determined by the curriculum. The inpatient medical record is written as a generalization of the curation of patients in the basic surgical departments of the Department of Surgery No. 1, which according to nosologies correspond to the thematic plan of the educational discipline.

## 8. METHODS OF LEARNING

**The types of educational activity of students are:**

**A) Lectures, B) Practical training, C) Students' self-training work (SSW) (Outclasses work)** in the organization of which counseling teachers have a significant role. All topics which are a part of subject module are implemented by the thematic plan of lectures, practical training and SSW to the educational process. Topics of lectures reveal the problematic issues of corresponding sections of the discipline. Various teaching tools such as multimedia presentations, training films, slides, demonstration of patients cases are used throughout the lecture course.

**Practical classes include:**

- examination of patients with surgical diseases;
- study of the condition of vital organs and systems of patients;
- practical application of methods of diagnosis and surgical treatment;
- discussion of clinical cases and MCQs;
- mastering the elements of medical techniques on patients and medical simulators;
- training the skills of operative techniques during surgery and work in dressing rooms.

**Methodology of practical classes**

Classes, as recommended by the typical program, should be conducted at the department of surgery near the patients bed, in the dressing room, operating room, diagnostic rooms in small groups of students (4-6 persons). The results of examination of the patients, accuracy of the diagnosis, efficiency of treatment should be discussed by group (subgroup) of students in the

training room under supervision of teacher. Students must write daily report with reflection of diagnosis, efficiency of methods of treatment and conducted manipulations.

The regular control of students training levels are supervised during practical classes according to specific goals.

It is planned to use following methods of determination of training level of students:

- answers to control questions
- MCQs on PC
- solving clinical cases
- evaluation and interpretation of the results of clinical, laboratory and instrumental examinations
- control of practical skills command

Assessment of students academic success from discipline is rating and exhibited by multi-scale based on mastering of the submodules.

The department made changes to the working curriculum within 15%, focusing on own organizational and technical capabilities, research areas, also made some changes to the thematic plan of practical classes that do not affect the claims of discipline in accordance with the ultimate goals of EQC and EOP in the direction of training and curriculum.

## **9. METHODOLOGICAL MATERIALS FOR MODULE 1 "THORACIC, CARDIO-VASCULAR, ENDOCRINE SURGERY"**

### **A. List of theoretical questions**

1. Anatomy and physiology of the appendix.
2. Methods of examination of patients with acute appendicitis.
3. Presentation of acute appendicitis.
4. Etiology and pathogenesis of acute appendicitis.
5. Differential diagnosis of acute appendicitis.
6. Features of the clinical course of acute appendicitis in children.
7. Features of the clinical course of acute appendicitis in pregnant women.
8. Features of clinical course of acute appendicitis in elderly.
9. Complications of acute appendicitis.
10. Presentation and diagnosis of acute appendicitis.
11. Differential diagnostics of acute appendicitis with diseases of the kidneys, ovaries, enterocolitis, food poisoning, pleuropneumonia.
12. Surgical tactics for acute appendicitis.
13. Appendicular infiltrate (presentation, diagnosis, medical tactics).
14. Appendicular abscess (presentation, diagnosis, medical tactics).
15. Pelvic abscess (presentation, diagnosis, medical tactics).
16. Subdiaphragmatic abscess (presentation, diagnosis, medical tactics).
17. Pylephlebitis (presentation, diagnosis, medical tactics).
18. Diffuse appendicular peritonitis (presentation, diagnosis, medical tactics).
19. Technique of typical appendectomy.
20. Laparoscopic appendectomy.
21. Features of operation techniq, depending from the form of acute appendicitis and location of the appendix.
22. Complications of appendectomy.
23. Complication of appendectomy in the early and late postoperative period.
24. Postoperative period in patients with appendicitis and it's complications.
25. Anatomy and physiology of gallbladder and extrahepatic biliary ducts.
26. Etiology and pathogenesis of acute cholecystitis.
27. Classification of acute cholecystitis.
28. Methods of examination of patients with acute cholecystitis.

29. Typical clinical picture of acute cholecystitis, peculiarities in young and elderly patients.
30. Differential diagnostics of acute cholecystitis.
31. Diagnosis of acute cholecystitis.
32. Treatment of acute cholecystitis.
33. Complications of acute cholecystitis.
34. Clinical picture of complications of acute cholecystitis and their differential diagnosis.
35. References to emergency operations with acute cholecystitis.
36. Reactions to urgent operations (24-48 hours) for acute cholecystitis.
37. Character of surgical interventions for acute cholecystitis.
38. Character of surgical interventions for complications of acute cholecystitis.
39. Minimally invasive surgical interventions (endoscopic, laparoscopic, under the control of CT and ultrasound).
40. Intraoperative complications of cholecystectomy and their treatment.
41. Postoperative complications and their prevention and treatment.
42. Preoperative preparation of patients with acute cholecystitis.
43. Postoperative management of patients with acute cholecystitis.
44. Anatomy and physiology of the pancreas.
45. Etiology and pathogenesis of acute pancreatitis.
46. Classification of acute pancreatitis.
47. Methods of examination of patients with acute pancreatitis.
48. Typical clinical picture of acute pancreatitis.
49. Differential diagnosis of acute pancreatitis.
50. Diagnosis of acute pancreatitis.
51. Therapeutic tactics for acute pancreatitis.
52. Complications of acute pancreatitis.
53. Features of the clinical picture of acute pancreatitis in the presence
54. of concomitant diseases.
55. Clinical picture of complications of acute pancreatitis and their differential diagnosis.
56. Indications for surgical interventions in acute pancreatitis.
57. Types of surgical interventions for acute pancreatitis.
58. Types of operations for complications of acute pancreatitis.
59. Indications to minimally invasive surgical interventions (endoscopic,
60. laparoscopic, under the control of ultrasound and CT) for acute pancreatitis.
61. Treatment of patients with acute pancreatitis in the postoperative period.
62. Anatomy and physiology of the stomach and duodenum.
63. Modern workup for peptic ulcer.
64. What are the factors of aggression in the development of peptic ulcer?
65. What belongs to gastric mucosal factors?
66. Blood supply of the stomach.
67. What effect does the vagus nerve have on the stomach?
68. What are the complications of peptic ulcer and duodenal ulcer?
69. Presentation and diagnosis of strangulated hernia.
70. Differential diagnosis of strangulated inguinal hernias with orchitis, orchepidymitis.
71. Differential diagnosis of strangulated femoral hernia with inflammation of the femoral lymph nodes, inguinal-thigh abscess, vein diseases in the zone of the femur triangle.
72. Surgical tactics for strangulated hernia.
73. Phases of the clinical course of perforated peptic ulcer.
74. Presentation and diagnosis of perforated peptic ulcer.

75. Differential diagnosis of perforated peptic ulcer with acute cholecystitis, pancreatitis, acute intestinal obstruction.
76. Surgical tactic for perforated peptic ulcer.
77. Presentation and diagnosis of mechanical bowel obstruction.
78. Classification of bowel obstruction.
79. Differential diagnosis of bowel obstruction with thromboembolism of abdominal vessels, food poisoning.
80. Surgical tactics for bowel obstruction.
81. Presentation and diagnosis of acute cholecystitis.
82. Complications of acute cholecystitis.
83. Surgical tactics in patients with acute cholecystitis.
84. Presentation and diagnosis of acute pancreatitis.
85. Surgical tactics for acute pancreatitis.
86. Presentation and diagnosis of acute mesenteric ischemia.
87. Surgical tactics for acute mesenteric ischemia.
88. Presentation and diagnosis of acute large bowel obstruction.
89. Surgical tactics for acute large bowel obstruction.
90. Which operation should be performed for patient with peptic ulcer of anastomosis
91. Definition of Mallory-Weiss syndrome.
92. What are the complaints of patients with Mallory Weiss syndrome?
93. What is the presentation of Mallory-Weiss syndrome?
94. How to make diagnosis of Mallory-Weiss syndrome?
95. Differential diagnosis of Mallory-Weiss syndrome?
96. Therapeutic tactics for Mallory-Weiss syndrome.
97. What are the indications for surgical treatment of patient with Mallory-Weiss syndrome?
98. Etiology and pathogenesis of gastrointestinal bleeding.
99. Methods of examination of patients with gastrointestinal bleeding.
100. Classification of bleeding ulcer.
101. Presentation of gastrointestinal bleeding.
102. Differential diagnosis of bleeding ulcer.
103. Degrees of severity of bloodloss in patients with bleeding ulcer.
104. Features of the clinical course of active GI bleeding.
105. The technique of sewing the ulcer, which is bleeding.
106. Choosing a method of stopping the bleeding from peptic ulcer depending on the degree of its activity.
107. Indications for medical treatment of bleeding peptic ulcer.
108. Therapy of gastrointestinal bleeding.
109. Methods of endoscopic hemostasis and indications for their application.
110. Methods of surgical interventions for bleeding peptic ulcer.
111. The choice of the method of surgical intervention, depending on the patient's condition, the intensity of bleeding, the degree of blood loss, localization of the ulcer.
112. Features of techniques of surgical interventions for bleeding peptic ulcer.
113. Complications in the early postoperative period after the intervention for bleeding ulcer.
114. Treatment of complications in the early postoperative period after the intervention for bleeding ulcer.
115. General principles of diagnosis of acute gastrointestinal bleeding
116. General principles of infusion therapy for patients with acute gastrointestinal bleeding.
117. Surgical tactics for acute gastrointestinal bleeding.
118. Presentation and diagnosis of ectopic pregnancy.



119. Surgical tactics for ectopic pregnancy.
120. Presentation and diagnosis of hemorrhagic shock.
121. Degrees of hemorrhagic shock.
122. Treatment of hemorrhagic shock.
123. Clinical picture of toxic shock.
124. Treatment of toxic shock.
125. Modern methods of instrumental diagnosis in abdominal surgery.
126. Endoscopic surgery, X-ray surgery, ultrasound surgery. Telesurgery. Robotic surgery.
127. Classification of post-gastric-resection and post-vagotomy syndromes.
128. Dumping syndrome: presentation and clinical course.
129. Choice of the method of treatment of dumping syndrome.
130. Peptic ulcer of gastroenteroanastomosis: causes, diagnosis, clinical course.
131. Tactics and the choice of the method of peptic ulcer treatment of gastroenteroanastomosis.
132. Gastrointestinal fistula: presentation, diagnosis and choice of treatment method.
133. Post-vagotomy diarrhea: presentation, diagnosis, treatment.
134. Role of a pain in different parts of the abdominal cavity in the diagnosis and differential diagnosis of diseases of the abdominal organs.
135. Symptom of vomiting - importance in the diagnosis and differential diagnosis of diseases of the abdominal organs.
136. Symptom of a violation of the act of defecation - the role in diagnosis and differential diagnosis of diseases of the abdominal organs.
137. Classification of portal hypertension.
138. Intrahepatic portal hypertension. Symptom, clinical course, diagnosis, differential diagnosis.
139. Tactics and the choice of the method of treatment of intrahepatic portal hypertension.
140. Posthepatic portal hypertension. Presentation, diagnosis, choice of treatment method.
141. Posthepatic portal hypertension (Chiari's disease). Presentation, diagnosis, treatment.

## **B. Practical skills**

1. Kocher's sign.
2. Anterior abdominal wall rigidity sign.
3. Rovzing's sign.
4. Sitkovski's sign.
5. Voskresensky's sign.
6. Bartomier-Michelson's sign.
7. Blumberg sign.
8. Aure-Rozanova's sign.
9. Coupe's sign.
10. Removing stitches from the wound.
11. Gastric lavage.
12. Cleaning and siphon enema.
13. Urinary bladder catheterization in men and women.
14. Merphy's sign.
15. Ortner's sign.
16. Mussi-Georgievsky's sign.
17. Kerte's sign.
18. Mayo-Robson's sign.
19. Determination of the presence of free gas in the abdominal cavity.
20. Determination of the presence of free fluid in the abdominal cavity.
21. Puncture of abdominal cavity.

22. Abdominal tap (paracentesis) and diagnostic peritoneal lavage.
23. Determination of the intra-abdominal pressure.
24. Digital rectal examination.
25. Valya's sign.
26. Kivulya's sign.
27. Shlange's sign.
28. Interpretation of the laboratory and instrumental examination results.
29. Cough sign.
30. Methods of temporary hemostasis of the external bleeding.
31. Determination of the Allover index.
32. Lee-White test.
33. Determination of blood group and Rh factor.
34. Tests for individual compatibility, Rh compatibility and biological test.
35. Puncture of the cubital vein, preparation and connection of system for iv transfusions.
36. Measurement of central venous pressure.
37. Methodology for setting the Sengstaken-Blakemore tube.
38. Suprapubic puncture of the bladder.
39. Cardiopulmonary resuscitation: upper airways patency restoration.
40. Cardiopulmonary resuscitation: artificial ventilation.
41. Cardiopulmonary resuscitation: indirect cardiac massage.
42. Purpose of surgical instruments: surgical needles (cutting, taper, atraumatic), needle holders, retractors, abdominal; mirrors, intestinal clamps, scalpels, scissors, suturing apparatus, suturing instruments for anastomosis for gastrointestinal tract.

## 10. FORMS OF CONTROL

Forms of control and evaluation system is carried out according to the requirements of the discipline program and instruction of the system of evaluation of learning activities of students in credit-modular system of educational process, approved by the Ministry of Healthcare of Ukraine (2005).

Grade for the discipline is determined based on the results of the current study and evaluation of students assimilation of the separate modules according to the Act on rating system of evaluation of learning activities of students in High Medical (Pharmaceutical) Educational Establishments in Ukraine. In carrying out all types of control (at each class, on the final class of semantic modules, on the final module control) will be applied objective methods for evaluating the level of knowledge and practical skills – MCQs for theoretical knowledge, individual control of students actions, complicated clinical cases.

Maximum points awarded to student during each module (examination credit) equals 200 points.

**Current study control** carried out at each class according to the specific goals of each topic. In evaluating the learning activities of students is planned use of standardized methods of control: MCQs solving, structured written answers on open questions, control of conduction of practical skills.

### Evaluation of current study:

The share of each topic within a module is the same but may be different for different modules of single discipline. Evaluation of current educational system of students is described in the study program of the discipline. During each class of the module for current study student gets marks: "5" (excellent), "4" (good), "3" (satisfactory), "2" (unsatisfactory).

**Mark "5" (excellent)** – gets student who deeply and reliably learned program material, thoroughly, consistently, competently and methodically explains theoretical knowledge, in whose answers theory is closely related with practice. The student does not hesitate to answer on modified tasks, easily cope with the clinical cases and questions of the second and third level of knowledge assessment, shows acquaintance with monographic literature, correctly justifies the decision,

possesses elements of doctors abilities, skills and techniques of practical work. Practical skills performs without error, in professional activities can efficiently use the acquired knowledge.

**Mark "4" (good)** – gets student who knows program material correctly and essentially explains it, who does not make significant errors in responses to questions and in carrying out the necessary practical skills.

**Mark "3" (satisfactory)** – gets student who has knowledge of the basic material only, but does not learned details, not correctly formulate answers, has difficulties in performing practical skills or performs them with significant errors, has difficulties in solving clinical cases of the third level of knowledge control.

**Mark "2" (unsatisfactory)** - gets student who does not know a large part of the program material, makes substantial errors, uncertainly executes practical works, does not solve II-III level tasks of control.

**Maximal amount that can be collected by student during module is 200 points.**

Putted by traditional evaluation scale marks are converted into points depending on the number of classes in the module. For Module 1 "Thoracic, cardiovascular, endocrine surgery" conversion of traditional scale to grade will be as follows

Traditional marks	Points of a rating scale
„5”	6
„4”	5
„3”	4
„2”	0

#### **Evaluation of students self-training work:**

Evaluation of self-training work of students, which is foreseen in the topic along with the audience work, carried out during the current control relevant to the topic of auditorium classes. For the self-training work student can get additional from 1 to 6 points.

Evaluation of self-training work topics, which are not included to the topics of auditorium classes, should be carried out during the final module control.

#### **Evaluation of discipline:**

Mark for discipline is assigned only to students who have completed all modules of discipline.

Encouraging points according to the decision of the Academic Council may be added to the number of points of the discipline for students who have taken a scientific publication or prize places for participating in the competition on discipline among universities in Ukraine and more.

Objectivity of evaluation of learning activities of students must be tested by statistical methods (correlation coefficient between the current study and results of the final module test), correlation analysis is performed using Spearman's rank correlation coefficient

$$r = 1 - \frac{\sum s}{n}$$

where s - the difference between the ranks of each option on two grounds correlation; n - the number ranked signs in one statistical row.

#### **Conversion of points of discipline in rating on a scale ECTS and a four-points scale (traditional):**

The number of points of the discipline, which accrued student, converted to ECTS scale as follows:

Mark ECTS	Statistical index
A	Best 10% of students
B	Next 25% of students
C	Next 30% of students
D	Next 25% of students
E	Last 10% of students

Percentage of students is determined among all students of the course within a corresponding specialty. Students who have been assessed FX, F ("2") are not ranked even after retaking the module. These students will automatically receive points E after retaking the module.

Mark on discipline FX, F ("2") is assigned to students who have not passed at least one module on discipline after completion of the study.

Mark FX ("2") assigned to students who score a minimum number of points for current educational activity, but not passed the final module control. They have the right to repeat the final module control, but not more than 2 (two) times according to the schedule approved by the Academic department. Mark F is assigned to students who attended all classes of module, but did not receive the minimal number of points for current educational activity and does not admitted to the final testing. This category has the right to re-study module.

Assessment of students of the discipline is rating and is calculated by multi-scale marks as the arithmetic mean score of mastering appropriate modules and a determination by the ECTS system and the traditional scale accepted in Ukraine.

The number of points for the discipline that accrued students converted to a four-point scale by absolute criteria as explained in the table below:

Points for discipline	Mark according to four-point scale
From 170 to 200 points	excellent (5)
From 140 to 169 points	good (4)
From 126 to 139 points	satisfactory (3)
Less then 126	unsatisfactory (2)

Evaluation of ECTS in traditional is not converted as ECTS scale and four-point scale are independent.

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