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**MINISTRY OF HEALTH OF UKRAINE
ODESSA NATIONAL MEDICAL UNIVERSITY**

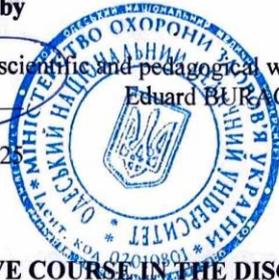
Department of Surgery with Postgraduate Education

CONFIRMED by

Vice-rector for scientific and pedagogical work

Eduard BURACHKIVSKYI

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September 1, 2025



WORKING PROGRAM OF THE ELECTIVE COURSE IN THE DISCIPLINE

" Laparoscopic anatomy and basics of operative laparoscopy "

Level of higher education: second (master's degree)

Field of knowledge: 22 "Health care"

Specialty: 222 "Medicine"

Specialization : Surgery

Educational and professional: Medicine

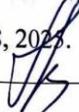
The work program is based on the educational and professional program "Medicine" for the training of specialists of the second (master's) level of higher education in the specialty 222 "Medicine" of the field of knowledge 22 "Healthcare", approved by the Academic Council of ONMedU (protocol No. 10 dated June 27, 2024) and the educational and professional program "Medicine" for the training of specialists of the second (master's) level higher education level in the specialty I 2 "Medicine" in the field of knowledge I "Healthcare and Social Security", approved by the Academic Council of ONMedU (protocol No. 10 dated June 26, 2025)

Authors:

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docent V. Kryzhanivskiy, PhD.

The work program is approved at the meeting of the Department of Surgery with Postgraduate Education

Minutes No. 1 dated August 28, 2025.

Head of the department  MD, Professor V. Hrubnik

Approved by the guarantor of the educational and professional program  Valeriia MARICHEREDA

Approved by the subject cyclical methodical commission for surgical disciplines of ONMedU
Minutes No. 1 dated "28" of August 2025.

Head of the subject cycle methodical commission for surgical disciplines
MD, Professor V. Mishchenko 

Revised and approved at the meeting of the department _____
Minutes No. ___ of "___" _____ 20__
Head of the department _____

Revised and approved at the meeting of the department _____
Minutes No. ___ of "___" _____ 20__
Head of the department _____

1. Description of the discipline

Name of indicators	Field of knowledge, specialty, specialization, level of higher education	Characteristics of the discipline
The total number of: Credits of ECTS: 3 Hours: 90 Content modules: 0	Field of knowledge 22 "Health care"	<i>Full-time (day) education</i>
	<hr/> Specialty 222 "Medicine"	<i>Discipline of free choice</i>
	<hr/> Level of higher education second (master's degree)	<i>Course: 5</i>
		<i>Semesters XI - XII</i>
		<i>Lectures (0 hours)</i>
		<i>Seminars (0 hours)</i>
		<i>Practical classes (30 hours)</i>
		<i>Laboratories (0 hours)</i>
		<i>Independent work (60 hours)</i>
		<i>including individual tasks (0 hours)</i>
	<i>Final control form- credit test</i>	

Note. The hours corresponds to the educational program of the curriculum.

2. The purpose and tasks of the educational discipline— competencies, program learning outcomes

Purpose

The purpose of studying is the mastering theoretical knowledge of minimally invasive methods of diagnosis, treatment and prevention of surgical diseases, primarily the most common and urgent ones

Task

- Determine the indications, contraindications to the main minimally invasive methods of treatment
- Know the equipment and tools for minimally invasive surgery.
- Master the basic skills of laparoscopy and endoscopy on simulators
- Know the technique of performing minimally invasive operations for gallstone disease, hernias of the anterior abdominal wall, hernias of the esophageal opening of the diaphragm, and achalasia of the esophagus.
- Know the indications, contraindications, technique of performing gastroduodenoscopy, colonoscopy, basic endoscopic operations: ligation of varicose veins of the esophagus, dilation of strictures, stenting, endohemostasis, extraction of foreign bodies, polypectomy.
- Know the indications, contraindications, technique of performing percutaneous minimally invasive operations: percutaneous drainage of pancreatic cysts, abscesses,
- Know the indications, contraindications, technique of performing basic endovascular diagnostic procedures and operations.

The process of studying the discipline is aimed at forming elements of the following competencies:

- **General (GC):**
GC2. Ability to learn and acquire modern knowledge

- GC3. Ability to apply knowledge in practical situations
- GC4. Knowledge and understanding of the subject area and understanding of professional activity
- GC5. Ability to adapt and act in a new situation
- GC6. Ability to make informed decisions
- GC7. Ability to work in a team
- GC8. Ability for interpersonal interaction
- GC9. Ability to communicate in a foreign language
- GC10. Ability to use information and communication technologies
- GC11. Ability to search process and analyze information from various sources
- GC12. Determination and perseverance in the tasks and responsibilities taken
- GC13. Awareness of Equal Opportunities and Gender Issues
- GC14. The ability to realize one's rights and obligations as a member of society, to realize the values of a public (free democratic) society and the need for its sustainable development, the rule of law, human and civil rights and freedoms in Ukraine
- GC15. The ability to preserve and increase the moral, cultural, scientific values and achievements of society based on an understanding of 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 technology, to use various types and forms of physical activity of active rest and healthy lifestyle
- GC16. Ability to evaluate and ensure the quality of work performed
- GC17. Commitment to the preservation of the environment

- **Special (SC):**

- SC1. Ability to collect patient medical information and analyze Clinical data
- SC2. Ability to determine the required list of laboratory and instrumental studies and evaluate their results
- SC3. Ability to establish a preliminary and Clinical diagnosis of the disease
- SC4. The ability to determine the necessary mode of work and rest in the treatment and prevention of diseases
- SC5. The ability to determine the nature of nutrition in the treatment and prevention of diseases
- SC6. The ability to determine the principles and nature of the treatment and prevention of diseases
- SC7. Ability to diagnose emergency conditions
- SC8. Ability to determine tactics and provide emergency medical care
- SC9. Ability to conduct medical and evacuation activities
- SC10. Ability to perform medical procedures
- SC11. The 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 moral responsibility
- SC13. Ability to carry out sanitary, hygienic, and preventive measures
- SC15. Ability to conduct a work capacity examination
- SC16. Ability to maintain medical records, including electronic forms
- SC20. Ability to conduct epidemiological and medical-statistical studies of public health; processing social, economic and medical information
- SC23. Ability to develop and implement scientific and applied projects in the field of healthcare
- SC24. Compliance with ethical principles when working with patients, laboratory animals
- SC25. Compliance with professional and academic virtue, be responsible for the reliability of the scientific results obtained

SC26. The ability to determine the tactics of conducting persons subject to dispensary supervision

SC28. Ability to apply fundamental biomedical knowledge at a level sufficient to perform professional tasks in the field of healthcare

Program learning outcomes (PLO):

PLO1. Have a solid knowledge of the structure of professional activity. Be able to carry out professional activities that require updating and integrating knowledge. Be responsible for professional development, the ability for further professional training with a high level of autonomy.

PLO2. Understanding and knowledge of fundamental and Clinical biomedical sciences at a level sufficient to solve professional problems in the field of healthcare.

PLO3. Specialized conceptual knowledge, including scientific achievements in the field of health, is the basis for research, critical thinking about problems in the field of medicine and related to interdisciplinary problems.

PLO4. Isolate and identify the leading Clinical symptoms and syndromes (according to list 1); according to standard methods, using preliminary data from the patient's history, data from the patient's examination, knowledge about the person, his organs and systems, to establish a preliminary Clinical diagnosis of the disease (according to list 2).

PLO5. Collect complaints, anamnesis of life and disease, evaluate the patient's psychomotor and physical development, the state of the organs and systems of the body, evaluate information about the diagnosis based on the results of laboratory and instrumental studies (according to list 4), taking into account the patient's age.

PLO6. Establish a final Clinical diagnosis by making an informed decision and analyzing the obtained subjective and objective data from a Clinical , additional examination, conducting differential diagnostics, observing the relevant ethical and legal standards, under the supervision of a medical director in a healthcare institution (according to list 2).

PLO7. 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).

PLO8. Determine the main Clinical syndrome or symptom that determines the severity of the condition of the victim / victim (according to list 3) by making an informed decision on the person's condition under any circumstances (in health care, outside it), incl. in conditions of emergency and combat operations, in the field, in conditions of lack of information and limited time.

PLO9. Determine the nature and principles of treatment of patients (conservative, surgical) with diseases (according to list 2), taking into account the age of the patient, in healthcare conditions, outside it and at the stages of medical evacuation, incl. in the field, on the basis of a preliminary Clinical diagnosis, observing the relevant ethical and legal standards, by making an informed decision on existing algorithms and standard schemes, if it is necessary to expand the standard scheme, be able to substantiate personalized recommendations under the supervision of a medical director in a medical institution.

PLO10. Determine the necessary mode of work, rest and nutrition based on the final Clinical diagnosis, observing the relevant ethical and legal standards by making an informed decision on existing algorithms and standard schemes.

PLO14. Determine tactics and provide emergency medical care in emergency conditions (according to list 3) in a limited time frame in accordance with existing Clinical protocols and treatment standards.

PLO15. Organize the provision of medical care and medical evacuation measures to the population and military personnel in emergency situations and military operations, incl. in the field.

PLO16. Form optimal medical routes for patients; organize interaction with colleagues in

their own and other institutions, organizations and institutions; apply tools for promoting medical services on the market, based on an analysis of the needs of the population, in the conditions of the functioning of healthcare, its division, in a competitive environment.

PLO17. Performing 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 by making an informed decision, observing the relevant ethical and legal standards.

PLO19. Plan and implement a system of anti-epidemic and preventive measures for the emergence and spread of diseases among the population.

PLO21. Find the necessary information in professional literature and databases in other sources, analyze, evaluate and apply this information.

PLO22. Apply modern digital technologies, specialized software, statistical methods of data analysis to solve complex healthcare problems.

PLO23. Assess the impact of the environment on the state of human health to assess the state of morbidity in the population.

PLO24. Organize the necessary level of individual security (own and those of whom he cares) in the event of typical dangerous situations in the individual field of activity.

PLO25. It is clear and unambiguous to convey own knowledge, conclusions and arguments on health issues and related to issues of specialists and non-specialists.

PLO27. Communicate fluently in the state language and English, both orally and in writing, to discuss professional activities, research and projects.

PLO28. Make effective solutions to health problems, evaluate the necessary resources, consider the social, economic and ethical consequences.

PLO30. Determine the tactics of managing persons subject to dispensary supervision (children, pregnant women, workers whose professions provide for mandatory dispensary examination).

As a result of studying the discipline, the applicants has to:

— know:

- Basic necessary equipment for endoscopic and laparoscopic surgical interventions
- Operating modes and safety rules when using electrosurgical equipment
- Modes of operation of equipment for creating a pneumoperitoneum and safety rules
- Rules of operation of endoscopic and laparoscopic instruments
- Indications and contraindications for minimally invasive surgical interventions
- Peculiarities of anesthesiological support during laparoscopic and endoscopic surgical interventions
- Intraoperative specific complications in minimally invasive surgical interventions
- Means to stop bleeding during endoscopic and laparoscopic operations
- Early postoperative complications after minimally invasive surgical interventions
- Peculiarities of minimally invasive surgical interventions in oncology
- Know the measures of Fast Track surgery

— be able:

- Apply pneumoperitoneum
- Insert the first trocar
- Plan an adequate position of the trocars according to the nature of the surgical intervention and the constitution of the patient
- Plan adequate mobilization of the organ according to the nature of the operative intervention
- Stop the bleeding that occurred during the operation
- Connect tissues by means of an intracorporeal suture
- Establish drainage during laparoscopic surgery

- Make a plan for drug treatment in the early postoperative period after minimally invasive surgery (general appointments under the supervision of the teacher)
- Draw up a patient rehabilitation plan after minimally invasive surgery

3.Content of the educational discipline

Theme 1. Laparoscopic anatomy of the gallbladder and bile ducts, branches of the common hepatic artery.

Theme 2 Technique of safe laparoscopic cholecystectomy. The use of fluorescence for the prevention of damage to the bile ducts.

Application of carboskyperitoneum. The principle of operation of the insufflator. Safe insertion of trocars. Introduction of tools in compliance with the triangle rule. Using traction, gravity contraction. The principle of operation of imaging equipment. Technical requirements for imaging equipment. Types of optics. Rational use of optics. Safety rules when working with an electrosurgical generator, operating modes, technical requirements. Rules of operation and safety when using laser, argon and ultrasonic energies. The procedure for turning on and testing the equipment. Complications arising from violation of the rules for working with equipment for minimally invasive operations. Technical requirements for tools. Safety rules when working in the X-ray operating room. Methods of applying laparoscopic sutures.

Theme 3. Laparoscopic anatomy of the anterior abdominal wall and inguinal region.

Theme 4. The technique of laparoscopic operations for hernias: TAPP and IPOM.

Indications and contraindications. A minimal set of tools. Selection of the patient's position on the operating table. The influence of pneumoperitoneum and position on the operating table on vital functions of the patient's body. Creation of pneumoperitoneum. Location of trocars. Strategic planning of operative intervention. The main stages of the operation. Topographic anatomy of the anterior abdominal wall. Laparoscopic anatomical landmarks. Triangle of pain, triangle of death, triangle of Hesselbach. TARR, TER, IROM. Types of mesh implants. Intra and postoperative complications

Theme 5. Laparoscopic anatomy of the esophageal-gastric junction and stomach

Theme 6. Technique of laparoscopic hiatoplasty and fundoplication, technique of cardiomyotomy.

Indications and contraindications for laparoscopic alloplasty of the esophageal opening of the diaphragm and laparoscopic cardiomyotomy. Topographic anatomy of esophagus, stomach. Laparoscopic anatomical landmarks and options. A minimal set of tools. Selection of the patient's position on the operating table. The influence of pneumoperitoneum and position on the operating table on vital functions of the patient's body. Creation of pneumoperitoneum. Location of trocars. Strategic planning of operative intervention. The main stages of laparoscopic alloplasty of the esophageal opening of the diaphragm. Techniques of crurorrhaphy. Types of funduplications. The main stages of laparoscopic cardiomyotomy. Peculiarities of perioperative management of patients. Intra and postoperative complications

Theme 7. Technique of bariatric operations: sleeve resection, mini-gastroshunting with one anastomosis, gastrojejunal shunting on a disconnected loop by Roux.

Bariatric operations. Sleeve-resection: minimal set of tools, placement of trocars, operation technique. Laparoscopic gastric bypass: minimal set of instruments, location of trocars, technique of operation. Multigastric bypass: minimal set of instruments, placement of trocars, operation technique. Complications of operations on the stomach.

Theme 8. Laparoscopic anatomy of the colon and rectum.

Theme 9. Technique of laparoscopic resections of the colon and rectum, laparoscopic total mesorectumectomy.

Indications and contraindications for laparoscopic and robotic operations in the gastrointestinal tract. Topographic anatomy and landmarks in laparoscopic and robotic operations on the gastrointestinal tract. The influence of pneumoperitoneum and position on the operating table on vital functions of the patient's body. Sigmoidectomy: minimal set of instruments, location of trocars, operation technique. Left-sided resection of the colon: minimal set of instruments, placement of trocars, operation technique. Right-sided hemicolectomy: minimal set of instruments, positioning of the team and trocars, operation technique. Anterior resection of the rectum: minimal set of instruments, location of trocars, technique of operation. Proctectomy: minimal set of tools, placement of trocars, operation technique.

Theme 10. Techniques of other laparoscopic operations: appendectomy, adhesiolysis, choledochoscopy, adrenalectomy. Test.

4. The structure of the educational discipline

Themes	Number of hours					
	Total	including				
		Lectures	seminars	practical classes	laboratories	Independent work
Theme 1. Laparoscopic anatomy of the gallbladder and bile ducts, branches of the common hepatic artery.	8			2		6
Theme 2. Technique of safe laparoscopic cholecystectomy. The use of fluorescence for the prevention of damage to the bile ducts.	10			4		6
Theme 3. Laparoscopic anatomy of the anterior abdominal wall and inguinal region.	8			2		6
Theme 4. The technique of laparoscopic operations for hernias: TAPP and IPOM.	10			4		6

Theme 5. Laparoscopic anatomy of the esophageal-gastric junction and stomach	8			2		6
Theme 6. Technique of laparoscopic hiatoplasty and fundoplication, technique of cardiomyotomy	10			4		6
Theme 7. Technique of bariatric operations: sleeve resection, mini-gastroshunting with one anastomosis, gastrojejunal shunting on a disconnected loop by Roux.	10			4		6
Theme 8. Laparoscopic anatomy of the colon and rectum	8			2		6
Theme 9. Technique of laparoscopic resections of the colon and rectum, laparoscopic total mesorectumectomy	10			4		6
Theme 10. Techniques of other laparoscopic operations: appendectomy, adhesiolysis, choledochoscopy, adrenalectomy. Test..	8			2		6
<i>Individual task</i>				-		-
Total hours	90			30		60

5. LECTURES ARE NOT PROVIDED BY THE CURRICULUM

5.2.Seminar classes are not provided

5.3. Themes of practical classes

No s/p	Theme	hours
1.	Theme 1. Laparoscopic anatomy of the gallbladder and bile ducts, branches of the common hepatic artery.	2
2.	Theme 2 Technique of safe laparoscopic cholecystectomy. The use of fluorescence for the prevention of damage to the bile ducts.	4
3.	Theme 3. Laparoscopic anatomy of the anterior abdominal wall and inguinal region.	2
4.	Theme 4. The technique of laparoscopic operations for hernias: TAPP and IPOM.	4
5.	Theme 5. Laparoscopic anatomy of the esophageal-gastric junction and stomach	2
6.	Theme 6. Technique of laparoscopic hiatoplasty and fundoplication, technique of cardiomyotomy.	4
7.	Theme 7. Technique of bariatric operations: sleeve resection, mini-gastroshunting with one anastomosis, gastrojejunal shunting on a disconnected loop by Roux.	2
8.	Theme 8. Laparoscopic anatomy of the colon and rectum.	4
9.	Theme 9. Technique of laparoscopic resections of the colon and rectum, laparoscopic total mesorectumectomy.	4
10.	Theme 10. Techniques of other laparoscopic operations: appendectomy, adhesiolysis, choledochoscopy, adrenalectomy. Test.	2
	total	30

5.4.Laboratory classes are not provided

6. Independent work of the applicants

No n/p	Theme /TYPES OF TASKS	hours
1	Theme 1. Preparation for practical training	6
2	Theme 2. Preparation for practical training	6
3	Theme 3. Preparation for practical training	6
4	Theme 4. Preparation for practical training	6
5	Theme 5. Preparation for practical training	6
6	Theme 6. Preparation for practical training	6
7	Theme 7. Preparation for practical training	6
8	Theme 8. Preparation for practical training	6
9	Theme 9. Preparation for practical training	6
10	Theme 10. Preparation for practical training	6
	total	60

7. Teaching methods

Practical classes: conversation, role-playing games, solving clinical situational problems, practicing patient examination skills, practicing manipulation skills according to list 5, instruction and practicing skills on simulation dummies, training exercises on differential diagnosis of the most common diseases.

Individual work: independent work with the recommended basic and additional literature, with electronic information resources, independent work with the bank of test tasks, independent mastering of algorithms of communication with patients.

8. Forms of control and assessment methods (including criteria for evaluating learning outcomes)

Ongoing control:

oral control, testing, assessment of performance of skills, assessment of communication skills during role-playing, solving situational clinical tasks, assessment of activity in class.

Final control Credit Test..

Assessment of the ongoing learning activity at the practical class:

1. Assessment of theoretical knowledge on the theme:
 - methods: individual survey on the theme, participation of the applicants in the discussion of problem situations; assessment of performance of tests on the theme;
 - the maximum score is 5, the minimum score is 3, the unsatisfactory score is 2.
2. Assessment of skills and manipulations on the subject of the lesson:
 - methods: assessment of the correctness of the performance of skills
 - the maximum score is 5, the minimum score is 3, the unsatisfactory score is 2.
3. Assessment of work with a patient on the subject of the class:
 - methods: assessment of: a) communication skills of communicating with the patient and his parents, b) the correctness of prescribing and evaluating laboratory and instrumental studies, c) compliance with the differential diagnosis algorithm, d) substantiation of the clinical diagnosis, e) drawing up a treatment plan;
 - the maximum score is 5, the minimum score is 3, the unsatisfactory score is 2.

The grade for one practical session is the arithmetic average of all components and can only have a whole value (5, 4, 3, 2), which is rounded according to the statistical method.

9 Criteria of ongoing assessment at the practical class

Score	Assessment criterion
«5»	The applicant is fluent in the material, actively participates in the discussion and solution of a situational Clinical problem, confidently demonstrates practical skills when examining a sick child and interpreting data from Clinical , laboratory and instrumental studies, expresses his opinion on the topic of the lesson, and demonstrates Clinical thinking.
«4»	The applicant has a good command of the material, participates in the discussion and solution of a situational Clinical problem, demonstrates practical skills when examining a sick child and interpreting data from Clinical , laboratory and instrumental studies with some errors, expresses his opinion on the topic of the lesson, and demonstrates Clinical thinking.
«3»	The applicant does not have enough knowledge of the material, hesitantly participates in the discussion and solution of a situational Clinical problem, demonstrates practical skills when examining a sick child and interpreting Clinical , laboratory and instrumental data with significant errors.
«2»	The applicant does not own the material, does not participate in the discussion and solution of a situational Clinical problem, does not demonstrate practical skills when examining a sick child and interpreting data from Clinical ,

laboratory and instrumental studies.

The applicant is admitted to a credit subject to the fulfillment of the requirements of the educational program and in the event that he received at least 3.00 points for the ongoing educational activity.

10. Distribution of points, obtained by the applicants

The average grade in the discipline is converted to the national grade and converted to points on a multi-point scale (200-point scale).

Conversion of traditional assessment into 200-point is carried out by the information and technical department of ONMedU by the special program by the formula:

Average score (current academic performance) x 40.

Conversion table of traditional to multi-point

National score for the discipline	The sum of scores for the discipline
Excellent («5»)	185 – 200
Good («4»)	151 – 184
Satisfactory («3»)	120 – 150
Unsatisfactory («2»)	Less than 120

According to the ECTS rating scale, applicants' achievements in educational discipline, who study on the same course of one specialty, according to their scores, are assessed by means of rank, namely:

Conversion of the traditional evaluation and and ECTS scores

Score on the ECTS scale	Statistical indicator
A	The best 10% applicants
B	Next 25% applicants
C	Next 30% applicants
D	Next 25% applicants
E	Next 10% applicants

10. Methodological support

- Working program in the discipline
- Syllabus
- Methodological recommendations for the practical classes in the discipline
- Methodological recommendations for the individual work of applicants
- Multimedia presentations
- Situational tasks
- Tests on the theme

11. Questions for the final control

Laparoscopic anatomy of the gallbladder and bile ducts, branches of the common hepatic artery.

1. Anatomical landmarks of the hepatobiliary zone.
2. Topographical anatomy of the gallbladder
3. Topographical anatomy of bile ducts

4. Significance of Lushka's ducts during laparoscopic cholecystectomy

Technique of safe laparoscopic cholecystectomy. The use of fluorescence for the prevention of damage to the bile ducts.

1. Indications and contraindications for laparoscopic cholecystectomy
2. The position of the patient and the location of the operating team
3. Minimal set of instruments for laparoscopic cholecystectomy
4. Location of trocars during laparoscopic cholecystectomy
5. The main stages of laparoscopic cholecystectomy

Laparoscopic anatomy of the anterior abdominal wall and inguinal region

1. Distribution in the region of the anterior abdominal wall
2. The vaginal structure of the rectus abdominis above and below the navel
3. White belly line. Weaknesses
4. Clinical anatomy of the inguinal canal
5. Clinical anatomy of the internal abdominal wall. Folds of the peritoneum, their contents, pits of the peritoneum.
6. Surgical anatomy of a hernia

Techniques of operations for inguinal and ventral hernias. Types of mesh implants.

1. Indications and contraindications for laparoscopic plastic surgery of ventral abdominal hernias?
2. The technique of transabdominal laparoscopic inguinal hernia repair (TAPP).
3. The technique of extra-abdominal laparoscopic inguinal hernia repair (TEP).
4. Laparoscopic umbilical hernia repair technique
5. Intraoperative, early and long-term postoperative complications are possible.

Techniques of laparoscopic operations for hernia of the esophageal opening of the diaphragm and achalasia of the esophagus.

1. Indications and contraindications for laparoscopic operations for hernia of the esophageal opening of the diaphragm?
2. The technique of performing laparoscopic plastic surgery of a hernia of the esophageal opening of the diaphragm. Types of funduplications. Technique of crurorrhaphy.
3. Indications and contraindications for laparoscopic operations in esophageal achalasia?
4. The technique of performing laparoscopic and robotic operations in esophageal achalasia.
5. Possible intraoperative, early and long-term postoperative complications after cardiomyotomy.

Bariatric operations, resection of the stomach, resection of the colon and rectum.

1. The technique of performing laparoscopic and robotic operations for gastric ulcer. Indications and contraindications for surgical treatment of peptic ulcer disease.
2. Indications, contraindications for bariatric operations.
3. Sleeve gastric resection technique. Possible intra- and postoperative complications.
4. Mini-gastric bypass technique. Possible intra- and postoperative complications.
5. The technique of performing laparoscopic and robotic operations for malignant neoplasms of the large intestine. Indications and contraindications for radical operations.

6. The technique of performing laparoscopic and robotic operations in Crohn's disease and non-specific ulcerative colitis. Indications and contraindications. Possible intra- and postoperative complications.
7. Variants of palliative and symptomatic laparoscopic and robotic surgery for malignant neoplasms of the colon.

12. LIST OF PRACTICAL SKILLS FOR THE FINAL CONTROL

- Installation of the first trocar.
- Application of laparoscopic sutures.
- Application of carboxyperitoneum.
- Planning the placement of trocars.
- Stoppage of bleeding that occurred during the operation.
- Installation of drainage during laparoscopic surgery.
- Laparocentesis.

12. Recommended literature

1. Gozie Offiah, Arnold Hill//RCSI Handbook of Clinical Surgery for Finals. 4th ed. 2020
2. Цигикало О. В. **Clinical Anatomy and Operative Surgery**=Клінічна анатомія і оперативна хірургія.. Підручник для ВМНЗ IV р.а.: Рекомендовано МОЗ: 2020/ 528 с.
3. Березницький Я. С. (за ред.) **General Surgery**=Загальна хірургія. — 2-ге вид. Підручник для ВМНЗ III—IV р.а.: Рекомендовано ДУ“Центр.метод.каб.з вищої мед.освіти МОЗ України”: 2020/ 328 с.
4. Christian de Virgilio, Areg Grigorian//Surgery: A Case Based Clinical Review. 2nd Ed. 2020
5. **General Surgery**=Загальна хірургія: Підручник для мед. ун-тів., інст., акад. Затверджено МОН / За ред. С.Д. Хімича, М.Д. Желіби. — К., 2019. — 536 с.
6. The Bethesda handbook of clinical oncology / editors, Jame Abraham, James L. Gulley. Fifth Edition. Copyright © 2019 Wolters Kluwer
7. JANE C. ROTHROCK// Alexander's Care of the Patient in Surgery. 16th Ed. 2019
8. SEIDEL'S GUIDE TO PHYSICAL EXAMINATION: AN INTERPROFESSIONAL APPROACH. Copyright © 2019 by Elsevier, Inc.
9. **Clinical Anatomy and Operative Surgery**=Клінічна анатомія і оперативна хірургія: Підручник для мед. ун-тів, інст., акад. Рекомендовано Вченою радою Буковинського НМУ / О.М. Слободян, В.Ю. Єршов, Г.Ю. Костюк, В.І. Півторак; за ред. В.Ю. Єршова. — К., 2018. — 504 с.
13. Sabiston Textbook of Surgery. The Biological Basis of Modern Surgical Practice, 20th Ed. 2016
14. Hamilton Bailey's Physical Signs: Demonstrations of Physical Signs in Clinical Surgery, 19th Edition Paperback – Import, by John S.P Lumley (Author), Anil K. D'Cruz (Author), Jamal J. Hoballah (Author), Carol E.H. Scott-Connor (Author) 25 Feb 2016
15. Schwartz's Principles Of Surgery With DVD Hardcover – 2014 by F. Charles Brunicaudi (Author), Dana K. Andersen (Author), Timothy R. Billiar (Author), David L. Dunn (Author), John G. Hunter (Author), & 2 More

13. Electronic information resources

1. Перші результати міні-лапароскопічної холецистектомії із застосуванням fast-track протоколу. Малиновський, А. В.; Галімон, М. М.; Malinovsky, A. V.; Galimon, M. M.; Малиновський, А. В.; Галимон, М. М.
URI: <https://repo.odmu.edu.ua:443/xmlui/handle/123456789/6940> Date: 2019
2. Лапароскопічна алопластика стравохідного отвору діафрагми новим способом внутрішнього посилення задньої крурорафії: перші результати
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