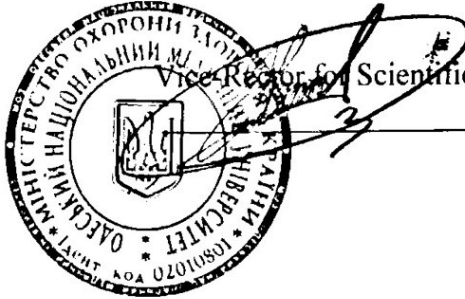


MINISTRY OF HEALTH OF UKRAINE
ODESSA NATIONAL MEDICAL UNIVERSITY
Department of Surgery



APPROVED BY
Vice-Rector for Scientific and Pedagogical Work
Eduard Buryachkivskyi

"01" September 2023

SYLLABUS FOR THE ELECTIVE ACADEMIC DISCIPLINE
"Endoscopic technologies in medicine"

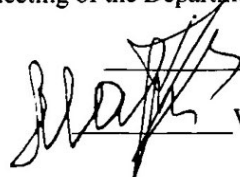
Level of Higher Education: Second (Master's)
Field of Knowledge: 22 "Healthcare"
Specialty: 222 "Medicine"
Educational-Professional Program: "Medicine"

The working program is based on the educational-professional program "Medicine" for the preparation of specialists at the second (master's) level of higher education in the specialty 222 "Medicine" of the field of knowledge 22 "Healthcare", adopted by the Scientific Council of ONMedU (protocol № 8 from June 29, 2023).

Developers:

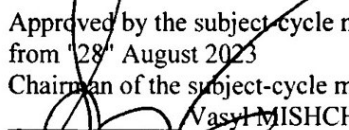
D.Med.Sc., Professor Grubnik V.V., Associate Professor Polyak S.D., Associate Professor Parfentiev R.S., Associate Professor Muravyov P.T., Associate Professor Nikitenko R.P., Vorotintseva K.O., Grubnyk V.V., Koichev Y.A., Degtyarenko S.P., Nadeim Kanjo, Sliopov V.V.

The working program was approved at the meeting of the Department of Surgery
Protocol № 1 from "27" August 2023
Head of the Department

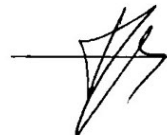
 Volodymyr GRUBNIK

Agreed with the OPP guarantor

 Valeriya MARICHEREDA

Approved by the subject cycle methodical commission on surgical disciplines Protocol № 1
from "28" August 2023
Chairman of the subject-cycle methodical commission on surgical disciplines
 Vasyl MISHCHENKO

Reviewed and approved at the meeting of the Department of Surgery Protocol № 1 from 04
September 2023
Head of the Department

 Volodymyr GRUBNIK

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: 2	Field of knowledge 22 "Health care"	<i>Full-time (day) education</i> <i>Discipline of free choice</i>
	Specialty 222 "Medicine"	<i>Course: 5</i>
	Specialization Surgery	<i>Semesters IX- X</i>
	Level of higher education second (master's degree)	<i>Lectures (0 hours)</i>
		<i>Seminars (0 hours)</i>
		<i>Practical classes (30 hours)</i>
		<i>Laboratory (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 should correspond to the educational program/curriculum.

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

Purpose

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

Task

- To analyze the advantages of minimally invasive methods of surgical treatment of patients not only in standard situations, but also in emergency situations and in the treatment of complications of surgical interventions.
- Familiarize with the principles of operation of the equipment used in endoscopic surgery. To prove indications and contraindications for surgical interventions in abdominal surgery. To evaluate the quality of life after minimally invasive surgical interventions.
- To familiarize with the current level of development of minimally invasive surgery, the social advantages of modern approaches

- To demonstrate the possibilities of using endoscopic surgery in the treatment of oncological pathology of the gastrointestinal tract.
- To demonstrate the general initial skills of manipulation of endoscopic instruments, to explain means of eliminating complications during endoscopic surgical interventions.

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

- **General (GC):**

- GC3. The ability to apply knowledge in practical situations.
- GC4. Knowledge and understanding of the subject area and understanding of professional activity.
- GC6. The ability to make justified decisions.
- GC7. The ability to work in a team.
- GC8. The ability to interpersonal interaction.
- GC12. Determination and perseverance regarding set tasks and obligations.

- **Special (SC):**

- SC1. The ability to collect medical information about a patient and analyze clinical data.
- SC2. The ability to determine the necessary list of laboratory and instrumental research and assess their results.
- SC3. The ability to establish a preliminary and clinical diagnosis of a disease.
- SC4. The ability to determine the necessary regime 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 treatment and prevention of diseases.
- SC7. The ability to diagnose emergency conditions.
- SC8. The ability to determine tactics and provide emergency medical care.
- SC10. The ability to perform medical manipulations.
- SC11. The ability to solve medical problems in new or unfamiliar environments with incomplete or limited information, taking into account social and ethical appropriateness.
- SC16. The ability to maintain medical documentation, including electronic forms.

- **Learning Outcomes (LO):**

- LO3. Specialized conceptual knowledge that includes scientific achievements in the field of healthcare and is the basis for conducting research, critical reflection of problems in the field of medicine and related interdisciplinary problems.
 - LO4. Identify and identify leading clinical symptoms and syndromes; using standard techniques, based on previous patient history data, patient examination data, knowledge about a person, their organs, and systems, establish a preliminary clinical diagnosis of the disease.
 - LO5. Collect complaints, life, and disease history, assess the psychomotor and physical development of the patient, the condition of the organs and systems of the body, based on the results of laboratory and instrumental research, assess information regarding the diagnosis.
-

- LO6. Establish a final clinical diagnosis by making a justified decision and analyzing obtained subjective and objective clinical data, additional examination, conducting differential diagnosis, adhering to relevant ethical and legal norms, under the control of a supervising doctor in a healthcare institution.
- LO7. Prescribe and analyze additional (mandatory and optional) examination methods (laboratory, functional and/or instrumental) for patients with diseases of organs and systems of the body for differential diagnosis of diseases.
- LO8. Determine the main clinical syndrome or symptom that determines the severity of the condition of the victim/sufferer by making a justified decision on the condition of a person under any circumstances (in a healthcare institution, outside it), including in emergency situations and combat operations, in field conditions, in conditions of lack of information and limited time.
- LO9. Determine the nature and principles of treatment of patients (conservative, surgical) with diseases, taking into account the age of the patient, in a healthcare institution, outside it and at the stages of medical evacuation, including in field conditions, based on a preliminary clinical diagnosis, adhering to relevant ethical and legal norms, by making a justified decision according to existing algorithms and standard schemes, if necessary expanding the standard scheme be able to justify personalized recommendations under the control of a supervising doctor in a medical institution.
- LO10. Determine the necessary regime of work, rest, and nutrition based on the final clinical diagnosis, adhering to relevant ethical and legal norms, by making a justified decision according to existing algorithms and standard schemes.
- LO17. Perform medical manipulations in a medical institution, at home or in production based on a preliminary clinical diagnosis and/or indicators of the patient's condition by making a justified decision, adhering to relevant ethical and legal norms.
- LO18. Determine the state of functioning and limitations of a person's life activity and the duration of disability with the preparation of relevant documents, in a healthcare institution based on data about the disease and its course, the specifics of a person's professional activity, etc. Keep medical documentation on the patient and the population contingent based on regulatory documents.
- LO19. Plan and implement a system of anti-epidemic and preventive measures regarding the occurrence and spread of diseases among the population.
- LO24. Organize the necessary level of individual safety (own and of persons cared for) in case of typical dangerous situations in the individual field of activity.

As a result of studying the academic discipline, the student of higher education must:

— **know:**

- Basic necessary equipment for endoscopic surgical interventions
- Operating modes and safety rules when using electrosurgical equipment
- Rules of operation of endoscopic and laparoscopic instruments
- Indications and contraindications for minimally invasive surgical interventions
- Peculiarities of anesthesiological support during endoscopic surgical interventions
- Intraoperative specific complications in minimally invasive surgical interventions
- Means to stop bleeding during endoscopic 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:**
- Insert the endoscope into the esophagus
- Inject air into the stomach
- Plan adequate mobilization of the organ according to the nature of the operative intervention
- Stop the bleeding that occurred during the operation
- 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

Content module 1. Techniques of endoscopic operations on the gastrointestinal tract.

Theme 1. General principles of diagnostic and therapeutic flexible endoscopy.

Endoscopic equipment and instruments. Types of endoscopic studies, equipment, indications and contraindications. Techniques of gastroduodenoscopy. Indications, contraindications, technique, complications. Forrest classification.

Theme 2. Ligation of varicose veins of the esophagus, dilatation of esophageal strictures.

Ligation of varicose veins of the esophagus: indications, contraindications, technique, complications. Buching and dilatation of the esophagus: indications, contraindications, technique, complications. Oral endoscopic myotomy of the esophagus (ROEM): indications, contraindications, set of tools, technique, complications.

Theme 3. Stenting of tumors, removal of foreign bodies, endohemostasis and polypectomy.

Removal of polyps of the esophagus and stomach: indications, contraindications, technique, complications. Endoscopic stopping of bleeding. Features of dilatation in pyloroduodenal stenosis. Features of dilatation in the large intestine. Endoscopic extraction of foreign bodies: pre-procedural stage, localization options, extraction technique, minimum set of tools, complications.

Theme 4. Endoscopic papillosphincterotomy, stenting pancreatic ducts.

Endoscopic retrograde cholangiopancreatography: indications, contraindications, technique, complications. Endoscopic papillectomy: indications, contraindications, technique, complications. Stenting: indications, contraindications, technique, complications. Bile duct stenting: indications, contraindications, technique, complications.

Theme 5. Cholangiostomy, percutaneous drainage of cysts, percutaneous radiofrequency ablation of tumors.

Cholangiostomy: indications, contraindications, technique, complications. Percutaneous drainage of cysts: indications, contraindications, equipment, technique, complications. Percutaneous radiofrequency ablation of tumors: indications, contraindications, equipment, technique, complications.

Theme 6. Percutaneous drainage of cysts of the pancreas, abscesses of the abdominal cavity.

Percutaneous drainage of pancreatic cysts: indications, contraindications, equipment, technique, complications. Percutaneous drainage of abdominal abscesses: indications, contraindications, equipment, technique, complications.

Theme 7. Colonoscopy.

Indications, contraindications, equipment, technique, complications. The main factors affecting the quality of colonoscopy. Endoscopic removal of colon tumors: indications, contraindications, technique, complications.

Theme 8. Diagnostic and therapeutic puncture biopsy of parenchymal organs.

Puncture biopsy of the liver and spleen: indications, contraindications, technique, complications.

Content module 2. Techniques of endoscopic endovascular operations.

Theme 9. Angiography and selective endovascular operations.

Selective embolization of arteries in the palliative treatment of tumor diseases. Selective arterial chemoperfusion in oncopathology. Indications, complications, long-term results.

Theme 10. Endovascular methods of treating the pathology of venous vessels. Test.

Endovascular methods of treatment of the pathology of venous vessels. Indications, contraindications, equipment, technique, complications. Test.

4. The structure of the educational discipline

Themes	Number of hours					
	Total	including .				
		Lectures	seminars	practical classes	laboratories	Independent work
Content module 1. Techniques of endoscopic operations on the gastrointestinal tract.						
Theme 1. General principles of diagnostic and therapeutic flexible endoscopy.	8			2		6
Theme 2. Ligation of esophageal varices, dilatation of esophageal strictures	8			2		6
Theme 3. Tumor stenting, removal of foreign bodies, endohemostasis	10			4		6

and polypectomy.						
Theme 4. Endoscopic papillosphincterotomy, stentingpancreatic ducts.	8			2		6
Theme 5. Cholangiostomy, percutaneous drainage of cysts, percutaneous radiofrequency ablation of tumors.	10			4		6
Theme 6. Percutaneous drainage of pancreatic cysts, abdominal abscesses	10			4		6
<i>Total by content module 1</i>	54			18		36
Content module 2. Techniques of endoscopic endovascular operations.						
Theme 7. Colonoscopy.	8			2		6
Theme 8. Diagnostic and therapeutic puncture biopsy of parenchymal organs.	10			4		6
Theme 9. Angiography and selective endovascular operations	10			4		6
Theme 10. Endovascular methods of treatment of the pathology of venous vessels. Test.	8			2		6
<i>Total by content module 2</i>	36			12		24
<i>Individual tasks</i>				-		-
Tjtal 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	Number hours
1.	General principles of diagnostic and therapeutic flexible endoscopy.	2
2.	Ligation of varicose veins of the esophagus, dilatation of strictures of the esophagus.	2
3.	Tumor stenting, removal of foreign bodies, endohemostasis and polypectomy.	4
4.	Endoscopic papillosphincterotomy, stentingpancreatic ducts.	2
5.	Cholangiostomy, percutaneous drainage of cysts, percutaneous radiofrequency ablation of tumors.	4
6.	Percutaneous drainage of pancreatic cysts, abdominal abscesses.	4
7.	Colonoscopy.	2
8.	Diagnostic and therapeutic puncture biopsy of parenchymal organs.	4
9.	Angiography and selective endovascular operations.	4
10.	Endovascular methods of treatment of the pathology of venous vessels. Test.	2
	total	30

5.4.Laboratory classes are not provided

6. Independent work of a student

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 practical 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 students 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 student

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:

$$\text{Average score (current academic performance)} \times 40.$$

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, students' 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% students
B	Next 25% students
C	Next 30% students
D	Next 25% students
E	Next 10% students

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 students
- Multimedia presentations
- Situational tasks
- Tests on the theme

11. Questions for the final control

1. Endoscopic equipment and instruments.
2. Indications and contraindications for gastroduodenoscopy
3. Gastroduodenoscopy technique.
4. Complications of gastroduodenoscopy, their prevention.

5. Forrest classification.
6. Colonoscopy: Indications, contraindications for colonoscopy.
7. Preparation for colonoscopy, colonoscopy technique.
8. Ligation of varicose veins of the esophagus: indications, contraindications, technique, complications.
9. Bougienage and dilatation of the esophagus: indications, contraindications, technique, complications.
10. Features of endoscopic dilatation in the colon.
11. Removal of polyps of the esophagus and stomach: indications, contraindications, technique, complications.
12. Methods of endoscopic stopping of bleeding.
13. Endoscopic removal of colon tumors: indications, contraindications, technique, complications.
14. Endoscopic extraction of foreign bodies: pre-procedural stage, localization options, extraction technique, minimum set of tools, complications.
15. Endoscopic retrograde cholangiopancreatography: indications, contraindications, technique, complications.
16. Endoscopic papillosphincterotomy: indications, contraindications, technique, complications.
17. Endoscopic papillectomy: indications, contraindications, technique, complications.
18. Bile duct stenting: indications, contraindications, technique, complications.
19. Cholangiostomy: indications, contraindications, technique, complications.
20. Percutaneous drainage of cysts: indications, contraindications, equipment, technique, complications.
21. Percutaneous drainage of abdominal abscesses: indications, contraindications, equipment, technique, complications.
22. The use of endovascular operations in oncological diseases
23. Selective embolization of arteries in the palliative treatment of tumor diseases.
24. Selective arterial chemoperfusion in oncopathology. Indications, complications, long-term results.
25. Endovascular methods of treatment of the pathology of venous vessels. Indications, contraindications, equipment, technique, complications.
26. Endoscopic hemostasis. Kinds Equipment. Performance technique.
27. Liver puncture biopsy: indications, contraindications, technique, complications.
28. Puncture biopsy of the spleen: indications, contraindications, technique, complications.
29. Oral endoscopic myotomy of the esophagus (ROEM): indications, contraindications, set of tools, technique, complications.
30. Types of angiography. Equipment. Performance techniques.

4. LIST OF PRACTICAL SKILLS FOR THE FINAL CONTROL

- Installation of the endoscope in the esophagus.
- Insufflation of oxygen into the stomach.
- Removal of the endoscope from the esophagus.
- Installation of a rectoscope in the rectum
- Installation of a colonoscope in the rectum.
- Removal of drainage during laparoscopic surgery.

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. Хіміча, М.Д. Желіби. — К., 2019. — 536 с.
6. The Bethesda handbook of clinical oncology / editors, Jame Abraham, James L. Gullely. 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 Brunicaardi (Author), Dana K. Andersen (Author), Timothy R. Billiar (Author), David L. Dunn (Author), John G. Hunter (Author), & 2 More

13. Electronic information resources

1. Переваги сучасних симуляційних і мультимедійних технологій у викладанні хірургічних хвороб і ендоскопічної хірургії студентам та курсантам післядипломної освіти. Малиновський, А. В.; Ставничий, А. С.; Майоренко, М. Н.; Malinovskiy, A. V.; Stavnichy, A. S.; Mayorenko, M. N.
URI: <http://repo.odmu.edu.ua:80/xmlui/handle/123456789/4649> Date: 2018
2. Сайт Всеукраїнської Асоціації ендоскопістів – <http://endoscopy.com.ua/>