

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

SUMY STATE UNIVERSITY

Academic and Research Medical Institute

Кафедра хірургії, травматології, ортопедії та фтизіатрії

ЕНДОСКОПІЧНІ ТЕХНОЛОГІЇ В ХІРУРГІЇ

Higher education level	The Second
Major: study programme	222 Medicine

Approved by Quality Council

Protocol dated _____ № _____

Chairman of the Quality Council

DATA ON REVIEWS AND APPROVAL

Author

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Review of the course descriptor	<hr/> <hr/>
Considered and approved at the meeting of the Кафедра хірургії, травматології, ортопедії та фтизіатрії	Protocol dated _____ № _____ Head of the Department _____

SYLLABUS

1. General information on the course

Full course name	Ендоскопічні технології в хірургії
Full official name of a higher education institution	Sumy State University
Full name of a structural unit	Academic and Research Medical Institute. Кафедра хірургії, травматології, ортопедії та фтизіатрії
Author(s)	P'iatykor Hennadii Ivanovych, Ovechkin Denys Viacheslavovych
Cycle/higher education level	The Second Level Of Higher Education, National Qualifications Framework Of Ukraine – The 7th Level, QF-LLL – The 7th Level, FQ-EHEA – The Second Cycle
Semester	18 weeks across 9 semester
Workload	5 ECTS, 150 hours. For full-time course 36 hours are working hours with the lecturer (36 hours of seminars), 114 hours of the individual study.
Language(s)	English

2. Place in the study programme

Relation to curriculum	Elective course available for the students of the specialty 222 "Medicine"
Prerequisites	Krok-1, General Hygiene and Ecology, Pathomorphology, Pathophysiology, Pharmacology, General Surgery, Propaedeutics of Internal Medicine, Propaedeutics of Pediatrics, Radiology
Additional requirements	There are no specific requirements
Restrictions	There are no specific restrictions

3. Aims of the course

The goal of the educational discipline is to acquire theoretical and practical knowledge on the diagnosis and treatment of a wide range of surgical pathology using video endoscopic technologies in compliance with the principles of medical ethics and deontology.

4. Contents

Topic 1 A brief history of endoscopy and laparoscopic surgery. Robotic surgery.
A brief history of endoscopy and laparoscopic surgery. Types of minimally invasive interventions. Single port operations. Principles of robotic surgery. Complication. Advantages.

Topic 2 Equipment and instruments for endosurgical interventions.

Equipment, optical systems, video cameras and instruments for video endoscopic interventions: for access, for connecting and disconnecting tissues, fixation of tissues, and removal of tissues. Modern methods of processing and storage for endoscopic equipment and tools.

Topic 3 Endoscopic techniques. Complications.

Position of the patient on the operating table. Creation of pneumoperitoneum. Introduction of trocars and their location. Laparolifting. Basic principles of endovideosurgical operations. Advantages. Complication.

Topic 4 Laparoscopic operations for esophageal pathology.

Antireflux operations (operations for GERD and hernias of the esophageal opening of the diaphragm). Cardiomy for esophageal achalasia. Indications for operations from the position of evidence-based medicine. Implementation methods and technique. Management of the postoperative period. Complication.

Topic 5 Laparoscopic surgery on the stomach and duodenum. Bariatric surgery.

Laparoscopic selective proximal vagotomy. Duodeno- and pyloroplasty. Operations for perforating ulcers. Laparoscopic resection of the stomach. Laparoscopic gastrectomy for stomach cancer. Laparoscopic bariatric operations (gastric tubular resection, gastric bypass, minigastric bypass, biliopancreatic bypass). Indications for operations from the position of evidence-based medicine. Implementation methods and technique. Management of the postoperative period. Complication.

Topic 6 Laparoscopic cholecystectomy and intervention on the common bile duct.

Laparoscopic cholecystectomy. Methods of laparoscopic revision of extrahepatic bile ducts and extraction of calculi. Prevention, diagnosis and surgical correction of bile duct injuries. Indications for operations from the position of evidence-based medicine. Management of the postoperative period. Complication.

Topic 7 Minimally invasive operations on the liver and spleen.

Laparoscopic resection of the liver. Radiofrequency ablation of the liver. Diagnostic procedures on the liver. Laparoscopic splenectomy. Laparoscopic operations for liver and spleen cysts. Indications for operations from the position of evidence-based medicine. Implementation methods and technique. Management of the postoperative period. Complication.

Topic 8 Operations for diseases of the bile ducts, large papilla of the duodenum and pancreas.

Endoscopic retrograde cholangiopancreatography. Endoscopic papillosphincterotomy. Extraction of calculi of the common bile duct. Bile duct stenting. Papillectomy. Pancreatic duct stenting. Endoscopic drainage of pseudocysts. Indications for operations from the position of evidence-based medicine. Implementation methods and technique. Management of the postoperative period. Complication.

Topic 9 Advances in gastrointestinal surgical endoscopy.

Esophagogastroduodenoscopy (EGD) Technique. Technique of dilatation and bulging for benign strictures. Endoscopic interventions for achalasia. Endoscopic treatment of Barrett's esophagus. Removal of foreign bodies. Endoscopic hemostasis. Percutaneous endoscopic gastrostomy: indications, technique, complications and management. Polypectomy. Resection of the mucous membrane (mucosectomy) and dissection in the submucous layer. Indications for operations from the position of evidence-based medicine. Management of the postoperative period. Complication.

Topic 10 Laparoscopic, endoscopic and robotic operations for colon pathology.

Sigmoidectomy, left-sided colon resection. Anterior rectal resection, proctectomy. Right-sided hemicolectomy. Technique of colonoscopy. Indications for operations from the position of evidence-based medicine. Management of the postoperative period. Complication.

Topic 11 Laparoscopic and robotic surgery in the inguinal area.

Transabdominal preperitoneal plasty of inguinal hernias (TAPP). Totally extraperitoneal inguinal hernia repair (TEP). Laparoscopic surgery of ventral hernias. Indications for operations from the position of evidence-based medicine. Management of the postoperative period. Complication.

Topic 12 Endoscopic Endocrine Surgery.

Thyroidectomy. Hemithyroidectomy. Operations on parathyroid glands. Adrenalectomy. Indications for operations from the position of evidence-based medicine. Management of the postoperative period. Complication.

Topic 13 Endoscopic Vein Surgery.

Endoscopic subfascial ligation of perforating veins. Endovenous laser ablation of varicose veins. Radiofrequency ablation of varicose veins (Closure Fast VNUS). Endoscopic Vein Harvesting (EVH). Indications for operations from the position of evidence-based medicine. Management of the postoperative period. Complication.

Topic 14 Minimally Invasive Emergency Surgery.

Laparoscopic appendectomy. Laparoscopic adhesiolysis. Laparoscopic operations for acute pancreatitis. Laparoscopic surgery in abdominal trauma. Role of video-assisted thoracic surgery in the evaluation and management of thoracic injuries. Indications for operations from the position of evidence-based medicine. Management of the postoperative period. Complication.

Topic 15 Thoracoscopic, endoscopic and endovascular operations in thoracic surgery.

Video-Assisted Thoracoscopic Surgery (VATS). Decortication. Atypical lung resection. Lobectomy. Removal of benign tumors and lung cysts, tuberculosis. Biopsy of tumors, removal of mediastinal tumors and biopsy of intrathoracic lymph nodes. Pericardial fenestration. Removal of hemothorax, pyothorax. Suturing lung tears. Endoscopic operations (diagnostic fibrobronchoscopy; removal of foreign bodies from the bronchial tree; targeted biopsy). Endovascular operations (radiofrequency ablation of pulmonary arteries in inoperable forms of lung cancer). Indications for operations from the position of evidence-based medicine. Implementation methods and technique. Management of the postoperative period. Complication.

Topic 16 Performance of test tasks.

Testing

Topic 17 Performance of practical skills and manipulations. Carrying out a list of practical skills and manipulations.
Topic 18 Graded test The final module control (Summative assessment)

5. Intended learning outcomes of the course

After successful study of the course, the student will be able to:

LO6	To determine the nature and treatment principles (conservative, operative) in patients with diseases at a healthcare facility, at patients home or during medical evacuation process (including in the field), based on the provisional clinical diagnosis and observing the relevant ethical and legal norms, by making a reasonable decision according to existing algorithms and standard procedures based on the principles of evidence-based medicine; if needed to go beyond the standard scheme, to substantiate the personalized recommendations under control of a supervising doctor at a medical facility.
LO7	To determine an appropriate work and rest mode in the treatment of diseases at a healthcare institution, at patients home and during medical evacuation (including in the field), based on the provisional clinical diagnosis and observing the relevant ethical and legal norms, by making a reasonable decision according to existing algorithms and standard procedures.
LO25	To make effective healthcare decisions assessing resources and considering social, economic, and ethical implications.

7. Soft Skills

SS1	Ability to abstract thinking, analysis and synthesis.
SS2	Ability to learn and master modern knowledge.
SS3	Ability to apply knowledge in practical situations.
SS4	Knowledge and understanding of the subject area and understanding of professional activity.
SS5	Ability to adapt and act in a new situation.
SS6	Ability to make informed decisions.
SS7	Ability to work in a team.
SS8	Ability to interpersonal interaction.
SS9	Ability to use information and communication technologies.
SS10	Ability to search, process and analyze information from various sources.
SS11	Determination and persistence in relation to assigned tasks and assumed responsibilities.

8. Teaching and learning activities

Topic 1. A brief history of endoscopy and laparoscopic surgery. Robotic surgery.

pr.tr.1 "A brief history of endoscopy and laparoscopic surgery. Robotic surgery." (full-time course)

History of the development of endoscopy. Four periods of development of endoscopy. Types of minimally invasive interventions. Single port operations. Principles of performing robotic operations. Complication. Advantages. The study of this topic involves theoretical work in the classroom. Using virtual simulation (watching movies) with further discussion.

Topic 2. Equipment and instruments for endosurgical interventions.

pr.tr.2 "Equipment and instruments for endosurgical interventions." (full-time course)

Equipment, optical systems, video cameras and instruments for conducting video endoscopic interventions: for access, connection and disconnection of tissues, fixation of tissues, removal of tissues. Cleaning and disinfection of equipment for endoscopy.

Topic 3. Endoscopic techniques. Complications.

pr.tr.3 "Endoscopic techniques. Complications." (full-time course)

Position of the patient on the operating table. Creation of pneumoperitoneum. Introduction of trocars and their location. Laparolifting. Basic principles of endovideosurgical operations. Advantages. Complication. The study of this topic involves theoretical work in the classroom, work in the simulation center with further discussion.

Topic 4. Laparoscopic operations for esophageal pathology.

pr.tr.4 "Laparoscopic operations for esophageal pathology." (full-time course)

Anti-reflux operations (operations for GERD and hernias of the esophageal opening of the diaphragm). Cardiomy for esophageal achalasia. Indications for operations from the position of evidence-based medicine. Management of the postoperative period. Complication. The study of this topic involves theoretical work in the classroom, work in the simulation center with further discussion.

Topic 5. Laparoscopic surgery on the stomach and duodenum. Bariatric surgery.

pr.tr.5 "Laparoscopic surgery on the stomach and duodenum. Bariatric surgery." (full-time course)

Laparoscopic selective proximal vagotomy. Duodeno- and pyloroplasty. Operations for perforating ulcers. Laparoscopic resection of the stomach. Laparoscopic gastrectomy for stomach cancer. Laparoscopic bariatric operations (gastric tubular resection, gastric bypass, minigastric bypass, biliopancreatic bypass). Indications for operations from the position of evidence-based medicine. Implementation methods and technique. Management of the postoperative period. Complication. The study of this topic involves theoretical work in the classroom, work in the simulation center with further discussion. If possible, work at the patient's bedside in specialized departments of the medical institution (according to the cooperation agreement between the medical institution and the university).

Topic 6. Laparoscopic cholecystectomy and intervention on the common bile duct.

pr.tr.6 "Laparoscopic cholecystectomy and intervention on the common bile duct." (full-time course)

Laparoscopic cholecystectomy. Methods of laparoscopic revision of extrahepatic bile ducts and extraction of calculi. Prevention, diagnosis and surgical correction of bile duct injuries. Indications for operations from the position of evidence-based medicine. Implementation methods and technique. Management of the postoperative period. Complication. The study of this topic involves theoretical work in the classroom, work in the simulation center with further discussion. If possible, work at the patient's bedside in specialized departments of the medical institution (according to the cooperation agreement between the medical institution and the university).

Topic 7. Minimally invasive operations on the liver and spleen.

pr.tr.7 "Minimally invasive operations on the liver and spleen." (full-time course)

Laparoscopic liver resection. Radiofrequency ablation of the liver. Diagnostic procedures on the liver. Laparoscopic splenectomy. Laparoscopic operations for liver and spleen cysts. Indications for operations from the position of evidence-based medicine. Implementation methods and technique. Management of the postoperative period. Complication. The study of this topic involves theoretical work in the classroom, work in the simulation center with further discussion. If possible, work at the patient's bedside specialized departments of the medical institution (according to the cooperation agreement between the medical institution and the university).

Topic 8. Operations for diseases of the bile ducts, large papilla of the duodenum and pancreas.

pr.tr.8 "Operations for diseases of the bile ducts, large papilla of the duodenum and pancreas." (full-time course)

Endoscopic retrograde cholangiopancreatography. Endoscopic papillosphincterotomy. Extraction of calculi of the common bile duct. Bile duct stenting. Papillectomy. Pancreatic duct stenting. Endoscopic drainage of pseudocysts. Indications for operations from the position of evidence-based medicine. Implementation methods and technique. Management of the postoperative period. Complication. The study of this topic involves theoretical work in the classroom, work in the simulation center with further discussion. If possible, work at the patient's bedside specialized departments of the medical institution (according to the cooperation agreement between the medical institution and the university).

Topic 9. Advances in gastrointestinal surgical endoscopy.

pr.tr.9 "Advances in gastrointestinal surgical endoscopy." (full-time course)

Technique of esophagogastroduodenoscopy. Technique of dilatation and bulging for benign strictures. Endoscopic interventions for achalasia. Endoscopic treatment of Barrett's esophagus. Removal of foreign bodies. Technique of endoscopic hemostasis. Technique of endoscopic gastrostomy. Stenting for tumors and cicatricial stenosis of the digestive tract. Polypectomy. Resection of the mucous membrane (mucosectomy) and dissection in the submucous layer. Indications for operations from the position of evidence-based medicine. Implementation methods and technique. Management of the postoperative period. Complication. The study of this topic involves theoretical work in the classroom, work in the simulation room center with further discussion. If possible, work at the patient's bedside in specialized departments of the medical institution (according to the cooperation agreement between the medical institution and the university).

Topic 10. Laparoscopic, endoscopic and robotic operations for colon pathology.

pr.tr.10 "Laparoscopic, endoscopic and robotic operations for colon pathology." (full-time course)

Sigmoidectomy, left-sided colon resection. Anterior rectal resection, proctectomy. Right-sided hemicolectomy. Technique of colonoscopy. The study of this topic involves theoretical work in the classroom, work in the simulation room center with further discussion. Indications for operations from the position of evidence-based medicine. Implementation methods and technique. Management of the postoperative period. Complication. If possible, work at the patient's bedside specialized departments of the medical institution (according to the cooperation agreement between the medical institution and the university).

Topic 11. Laparoscopic and robotic surgery in the inguinal area.

pr.tr.11 "Laparoscopic and robotic surgery in the inguinal area." (full-time course)

Transabdominal preperitoneal plastic surgery of inguinal hernias (TAPP). Totally extraperitoneal inguinal hernia repair (TEP). Laparoscopic surgery of ventral hernias. Study of this topic involves theoretical work in the classroom, work in the simulation center with further discussion. Indications for operations from the position of evidence-based medicine. Implementation methods and technique. Management of the postoperative period. Complication. If possible, work at the patient's bedside specialized departments of the medical institution (according to the cooperation agreement between the medical institution and the university).

Topic 12. Endoscopic Endocrine Surgery.

pr.tr.12 "Endoscopic Endocrine Surgery." (full-time course)

Thyroidectomy. Hemithyroidectomy. Operations on parathyroid glands. Adrenalectomy. Indications for operations from the position of evidence-based medicine. Implementation methods and technique. Management of the postoperative period. Complication. The study of this topic involves theoretical work in the classroom, work in the simulation center with further discussion. If possible, work at the patient's bedside in specialized departments of the medical institution (according to the cooperation agreement between the medical institution and the university).

Topic 13. Endoscopic Vein Surgery.

pr.tr.13 "Endoscopic Vein Surgery." (full-time course)

Endoscopic subfascial ligation of perforating veins. Endovenous laser ablation of varicose veins. Radiofrequency ablation of varicose veins (Closure Fast VNUS). Endoscopic Vein Harvesting (EVH). Indications for operations from the position of evidence-based medicine. Implementation methods and technique. Management of the postoperative period. Complication. The study of this topic involves theoretical work in the classroom, work in the simulation center with further discussion. If possible, work at the patient's bedside specialized departments of the medical institution (according to the cooperation agreement between the medical institution and the university).

Topic 14. Minimally Invasive Emergency Surgery.

pr.tr.14 "Minimally Invasive Emergency Surgery." (full-time course)

Endoscopic subfascial ligation of perforating veins. Endovenous laser ablation of varicose veins. Radiofrequency ablation of varicose veins (Closure Fast VNUS). Endoscopic Vein Harvesting (EVH). Indications for operations from the position of evidence-based medicine. Implementation methods and techniques. Management of the postoperative period. Complication. The study of this topic involves theoretical work in the classroom, work in the simulation center with further discussion. If possible, work at the patient's bedside specialized departments of the medical institution (according to the cooperation agreement between the medical institution and the university).

Topic 15. Thoracoscopic, endoscopic and endovascular operations in thoracic surgery.

pr.tr.15 "Thoracoscopic, endoscopic and endovascular operations in thoracic surgery." (full-time course)

Technique of thoracoscopic operations (VATS). Decortication. Atypical lung resection. Lobectomy. Removal of benign tumors and lung cysts, tuberculosis. Biopsy of tumors, removal of mediastinal tumors and biopsy of intrathoracic lymph nodes. Pericardial fenestration. Removal of hemothorax, pyothorax. Suturing lung tears. Endoscopic operations (diagnostic fibrobronchoscopy; removal of foreign bodies from the bronchial tree; targeted biopsy). Endovascular operations (radiofrequency ablation of pulmonary arteries in inoperable forms of lung cancer). Indications for operations from the position of evidence-based medicine. Implementation methods and technique. Management of the postoperative period. Complication. The study of this topic involves theoretical work in the classroom, work in the simulation center with further discussion. If possible, work at the patient's bedside in specialized departments of the medical institution (according to the cooperation agreement between the medical institution and the university).

Topic 16. Performance of test tasks.

pr.tr.16 "Performance of test tasks." (full-time course)

Computer testing.

Topic 17. Performance of practical skills and manipulations.

pr.tr.17 "Performance of practical skills and manipulations." (full-time course)

Performance of practical skills and manipulations.

Topic 18. Graded test

pr.tr.18 "Graded test." (full-time course)

The final module control (Summative assessment).

9. Teaching methods

9.1 Teaching methods

Course involves learning through:

TM1	Case-based learning
TM2	Team Based Learning

TM3	Research Based Learning
TM4	Problem-based learning
TM5	Self-study
TM6	Electronic learning

The discipline is taught using modern teaching methods (CBL, TBL, RBL), which contribute not only to the development of professional skills, but also stimulate creativity thinking.

Acquisition of soft skills by students is carried out during the entire period of studying the discipline. Ability to analytical and critical thinking, teamwork, perseverance is formed during team-, practice- and case-oriented training, knowledge and understanding of the subject area is acquired during self-study. Electronic education stimulates the ability to use information technologies. Training on on the basis of research encourages the development of certainty and persistence in relation to the set tasks and assumed responsibilities.

9.2 Learning activities

LA1	Interpretation of laboratory (clinical blood analysis, urine, biochemical blood analysis, immunological studies, etc.) and instrumental (ECG, Echocardiogram, EFGDS, ultrasound, CT, X-ray, spirometry, etc.) examination methods
LA2	Preparation for practical classes
LA3	Analysis of clinical cases
LA4	Practical work with the patient in specialized departments of the hospital
LA5	Electronic learning in systems (Zoom, MIX.sumdu.edu.ua)
LA6	Preparation for Graded test
LA7	Individual research project (student research paper, article, theses, etc.)
LA8	Work with textbooks and relevant information sources
LA9	Practicing practical skills in the simulation center
LA10	Performing a group practical task

10. Methods and criteria for assessment

10.1. Assessment criteria

Definition	National scale	Rating scale
Outstanding performance without errors	5 (Excellent)	$170 \leq RD \leq 200$
Above the average standard but with minor errors	4 (Good)	$140 \leq RD < 169$
Fair but with significant shortcomings	3 (Satisfactory)	$120 \leq RD < 139$
Fail – some more work required before the credit can be awarded	2 (Fail)	$0 \leq RD < 119$

10.2 Formative assessment

	Description	Deadline, weeks	Feedback
FA1 Peer assessment	Partnership interaction aimed at improving the results of educational activities by comparing one's own current level of success with previous indicators. Provides an opportunity to analyze one's own educational activities.	During the entire period of studying the discipline.	Adjustment together with students of approaches to learning, taking into account the results of the assessment.
FA2 Final testing.	A method of effective verification of the level of assimilation of knowledge, abilities and skills in an educational discipline. Testing allows you to check the results of training after completing the discipline.	Final computer testing at the end of the course.	The maximum number of points for the test is 10 points, provided that 100% of the answers are correct. The minimum score for successfully passing the tests is 6 points (60% of correct answers).
FA3 Counseling of the teacher during the preparation of an individual research project (speech at a conference, competition of scientific papers).	An important factor in the formation of professional qualities of future specialists is the research work of students. Involvement of the latter in research activities contributes to the formation of their scientific worldview, industriousness, work capacity, initiative, etc.	During the entire period of studying the discipline.	Teacher's oral comments. The student is given additional incentive points (from 5 to 10), depending on the type of research project.
FA4 Instructions of the teacher in the process of performing practical tasks	The guidelines reveal the methods of pedagogical control over the professional activities of applicants. Efficiency is determined by compliance with all stages of practical tasks. The effectiveness of the formation of the necessary practical skills and abilities depends on the level of formation of practical competence. industriousness, work capacity, initiative, etc.	During the entire period of studying the discipline	Counseling of students in working with a standardized patient, direct and indirect observation, observation of the work of the examiners "at the bedside" of the patient with subsequent determination of the level of practical training.

<p>FA5 Survey and teacher's oral comments based on his results</p>	<p>It provides an opportunity to identify the state of educational experience gained by students in accordance with the set goals, to find out the prerequisites of the state of formation of the obtained results, the causes of difficulties, to adjust the learning process, to track the dynamics of the formation of learning results and to forecast their development.</p>	<p>During the entire period of studying the discipline</p>	<p>According to the obtained data on the results of training, based on their analysis, it is proposed to determine the evaluation as an indicator of the achievements of the educational activities of the applicants</p>
<p>FA6 Solving clinical cases</p>	<p>The case method makes it possible to reveal and form the qualities and abilities of medical students necessary for further work, forms clinical thinking, analytical abilities, independence in decision-making, communication, skills for working with a sufficiently large amount of information.</p>	<p>During the entire period of studying the discipline</p>	<p>Assessment of the student's ability to think clinically, justify their decisions, express their opinions clearly, determine the level of theoretical training, which is reflected in the corresponding assessment.</p>
<p>FA7 Tests (automated tests) to control the educational achievements of applicants</p>	<p>A method of effective verification of the level of assimilation of knowledge, abilities and skills from each subject of an educational discipline. Testing allows you to check the assimilation of educational material from each subject.</p>	<p>During the entire period of studying the discipline.</p>	<p>The student must provide 60% of the correct answers, which is an admission to the practical part of the lesson</p>

<p>FA8 The task of assessing the level of theoretical training</p>	<p>Assessment of acquired theoretical knowledge on the subject of the discipline. It is conducted at each practical session in accordance with the specific goals of each topic based on a comprehensive assessment of the student's activity, which includes monitoring the level of theoretical training, performing independent work according to the thematic plan</p>	<p>During the entire period of studying the discipline</p>	<p>Feedback is aimed at supporting students' independent work, identifying shortcomings and assessing the level of acquired theoretical knowledge.</p>
<p>FA8 The task of assessing the level of theoretical training</p>	<p>Assessment of acquired theoretical knowledge on the subject of the discipline. It is conducted at each practical lesson in accordance with the specific goals of each topic based on a comprehensive assessment of the student's activity, which includes monitoring the level of theoretical training, performing independent work according to the thematic plan.</p>	<p>During the entire period of studying the discipline.</p>	<p>Feedback is aimed at supporting students' independent work, identifying shortcomings and assessing the level of acquired theoretical knowledge.</p>
<p>FA9 Practical skills test</p>	<p>Practicing practical skills on various mannequins and simulators.</p>	<p>During the training period. The student must successfully perform practical skills in the penultimate</p>	<p>Successful implementation of practical skills in the discipline is an admission to the compilation of a Graded test. The maximum number of points is 30, the minimum is 18.</p>

<p>FA10 Discussions in focus groups</p>	<p>The method makes it possible to involve all participants in the process of discussion and justification of one's own opinion through multilateral communication, to develop the ability to conduct a professional discussion, to cultivate respect for colleagues and the ability to generate alternative ideas and proposals.</p>	<p>During the entire period of studying the discipline</p>	<p>Assessment of the student's ability to work in a team, ability to justify their decisions, determination of the level of theoretical training, which is reflected in the corresponding assessment</p>
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10.3 Summative assessment

	Description	Deadline, weeks	Feedback
<p>SA1 Final control: Graded test</p>	<p>Compilation of Graded test. Candidates who have successfully mastered the subject material, passed practical skills and final computer testing are allowed to take the test.</p>	<p>In the last lesson</p>	<p>The applicant can receive 80 points for Graded test. The minimum number of points that a student must receive is 48 points.</p>
<p>SA2 Final testing</p>	<p>A method of effective verification of the level of assimilation of knowledge, abilities and skills in an educational discipline. Testing allows you to check the results of training during the cycle and determine the level of knowledge at the end of the discipline.</p>	<p>Final computer test at the end of the course (10 points).</p>	<p>It is an admittance to the Graded test.</p>
<p>SA3 Assessment of performance of practical skills and manipulations</p>	<p>Comprehensive practice of the practical component of academic programs in a safe simulation environment for students. Provides an opportunity to master skills.</p>	<p>At the penultimate discipline lesson, the student must successfully complete a list of practical ski</p>	<p>It is mandatory for admission to Graded test. The maximum number of points is 30, the minimum is 18.</p>
<p>SA4 Current evaluation of the level of theoretical and practical training</p>	<p>Includes an oral interview, interpretation of laboratory and instrumental methods of examination, objective structured clinical examination of the patient, solution of clinical individual and group cases, ongoing testing. Students who are involved in research activities have the opportunity to present the results of their own research at conferences, student research competitions, etc. (incentive activities, additional points).</p>	<p>During the entire period of studying the discipline.</p>	<p>It is held at every lesson. The result of the RA performance affects the comprehensive assessment for the practical session.</p>

Form of assessment:

	Points	Minimum points	Можливість перескладання з метою підвищення оцінки
9 semester	200 scores		
SA1. Final control: Graded test	80		
answer to theoretical questions (3x20)	60	9	No
answer to the question of practical training	20	9	No
SA2. Final testing	10		
	10	6	No
SA3. Assessment of performance of practical skills and manipulations	30		
	30	18	No
SA4. Current evaluation of the level of theoretical and practical training	80		
Oral interview, performance of group case, clinical case, assessment, objective structured clinical examination, interpretation of laboratory and instrumental examination results	80	48	No

When learning the materials of the module, the student is assigned for each practical lesson a maximum of 5 points (the rating is given in the traditional 4-point rating system). At the end of the academic year, the student's arithmetic average is calculated. The maximum number of points that a student can receive during practical classes of the academic year - 80. The number of points of the student is calculated by the formula multiply by 100 on the arithmetic average and divide by 5. For the diagnostic testing, the student receives a maximum of 10 points. The minimum number of points that must get a student - 6 points. Successful completion of the list of practical skills is a mandatory condition for admission to the Graded tes in the penultimate discipline lesson. The maximum number of points that can be obtained student - 30 points, minimum - 18 points. The maximum number of points for the current educational activity of a student - 120. A student is admitted to a Graded tes on the condition that the requirements of the study are met program and if he has scored at least 72 points for the current educational activity: 48 points during practical classes, 6 points for testing and 18 points for performing practical skills and manipulations. Graded tes is carried out at the last lesson. Exam tickets contain 3 theoretical questions on various topics and cover all sections of the academic discipline (20 points each) and 1 practical task (20 points). Graded tes is credited to the student if he scored at least 48 points out of 80. Encouraging points are added to the grade in the discipline for implementation of an individual research project (defense of student work 10 points, presentation at the conference, poster presentation at the conference, theses of the reports - 5 points). The total score for the discipline cannot exceed 200 points. It is possible to transfer the points received for by the system of non-formal education in accordance with the Regulation.

11. Learning resources


11.1 Material and technical support

MTS1	Information and communication systems
MTS2	Library funds, archive of radiographs, spiograms, electrocardiograms, computer tomograms, results of laboratory examination methods
MTS3	Computers, computer systems and networks
MTS4	Phantoms, dummies, simulation center equipment
MTS5	Sumy Regional Clinical Hospital
MTS6	Multimedia, video and sound reproduction, projection equipment (video cameras, projectors, laptop screens)
MTS7	Software (to support distance learning)

11.2 Information and methodical support

Web-based and electronic resources	
1	Ендоскопічна хірургія: навчальний посібник / [Запорожан В. М., Грубнік В. В., Грубнік Ю. В. та ін.]. – К.: «Медицина», 2019. – 592 с.
2	Базові лапароскопічні технології в хірургії / О. А. Крижановський, В. Д. Шейко, Д. А. Ситнік, С. В. Должковий. – Полтава : Полтавський літератор, 2020. – 86 с.
3	Patti MG, Zureikat AH, Fichera A, Schlottmann F, eds. Techniques in Minimally Invasive Surgery. 1st ed. Springer Nature; 2021:501.
4	Kernstine K, ed. Atlas of Robotic Thoracic Surgery. 1st ed. Springer; 2018:288.
5	Bardakcioglu O, ed. Advanced Techniques in Minimally Invasive and Robotic Colorectal Surgery. 2nd ed. Springer; 2019:162.
6	Agresta F, Podda M, Bergamini C, Campanile FC, Anania G, eds. Emergency Laparoscopic Surgery in the Elderly and Frail Patient. 1st ed. Springer Nature; 2021:348.
7	Geisler DP, Keller DS, Haas EM. Operative Techniques in Single Incision Laparoscopic Colorectal Surgery. Springer International Publishing; 2018:122.
8	Kouraklis G, Matsiota E, eds. Laparoscopic Colon Surgery : Milestones, Education, & Best Practice. Springer; 2021:165.
9	Lee SW, Ross HM, Rivadeneira DE, Steele SR, Feingold DL. Advanced Colonoscopy and Endoluminal Surgery. Cham Springer International Publishing; 2017:265.
10	Holcomb GW, Rothenberg S, eds. Atlas of Pediatric Laparoscopy and Thoracoscopy. 2nd ed. Elsevier; 2021:336.
11	Gonzalez-Rivas D, Sze C, Rocco G, D'amico TA. Atlas of Uniportal Video Assisted Thoracic Surgery. Springer Singapore; 2019:289.

12	Parker M, Hohenberger W. Lower Gastrointestinal Tract Surgery. Vol. 1, Laparoscopic Procedures. 1st ed. Springer; 2019:690.
13	https://websurg.com
14	https://emedicine.medscape.com
15	https://pubmed.ncbi.nlm.nih.gov/
16	http://www.uptodate.com
17	http://accessmedicine.mhmedical.com

	<p style="text-align: center;">UNIVERSITY POLICIES FOR THE COURSE «Ендоскопічні технології в хірургії»</p> <p>Higher education level The Second Level Of Higher Education, National Qualifications Framework Of Ukraine – The 7th Level, QF-LLL – The 7th Level, FQ-EHEA – The Second Cycle Major: Educational programme 222 Medicine Year of study 2023 Semester 9 semester Mode of study full-time course Language of instruction English</p>
Teacher(s)	P`iatykop Hennadii Ivanovych, Ovechkin Denys Viacheslavovych
Contact	Piatykop Hennadii Ivanovich PhD, Associate Professor Department of Surgery, Traumatology, Orthopedics and Phthisiology h.piatykop@med.sumdu.edu.ua
Time and room for giving consultations	Reworks are held every Wednesday from 3:30 p.m. to 5:00 p.m. and by agreement with the teacher at the department (surgical department of the Sumy Regional Clinical Hospital, Sumy, 48 Troitska St.).
Links to online educational platforms	MIX learning (sumdu.edu.ua)
Syllabus	https://pg.cabinet.sumdu.edu.ua/report/syllabus/3aaf30e27edf791e867da7cae9e343823802450
Channels for maintaining contact with the group for receiving and working on materials	personal account, MIX Sumy University, Viber group, e-mail box

POLICIES

Academic integrity policy

Participants must complete all tasks according to the course requirements independently. Participants are not allowed to cheat during the written module or summative test. The assignments should not contain plagiarism, facts of fabrication, falsification, cheating. Manifestations of other types of academic dishonesty determined by the Academic Integrity policy are also unacceptable. If a teacher reveals violations of academic integrity by students during the course, the former have the right to take one of the following actions: - to reduce points by up to 40% for practical assignments; - to give recommendations for improving and resubmitting mandatory homework assignments with the reduction of points by up to 25%; - to not accept mandatory homework assignments without the right to resubmit; - set a date for retaking the written module or the summative test with a reduction of points by up to 15%; - to not allow to retake the written module or the summative test.

Політика щодо використання інструментів штучного інтелекту при виконанні завдань навчальної дисципліни

Політика використання інструментів штучного інтелекту (ChatGPT, Tome тощо) оголошується викладачем на початку курсу.

Несанкціоноване використання інструментів штучного інтелекту є порушенням академічної

добросовісності.

Політика щодо використання матеріалів з джерел відкритого доступу

При використанні здобувачами освіти матеріалів з джерел відкритого доступу для підготовки робіт, визначених силабусом та регламентом навчальної дисципліни, вони обов'язково мають дотримуватись умов ліцензій Creative Commons на використання об'єктів авторського права.

Attendance policy

The student must attend 100% of the practical classes. In case of skipping classes, the student must work off the missed classes in accordance with the schedule of work approved by the department.

Deadlines and course retake policy

In case of an unsatisfactory result, the student has the right to retake twice Graded Credit - the first time for the examiner, appointed by the head of the department, the second - the commission which is created by the deanery. Rearranging the Graded Credit is carried out according to a separate schedule approved by the dean's office. Students, who did not appear for the Graded Credit without a valid reason, are considered those that received an unsatisfactory rating. Student refusal perform Graded Credit tasks is certified as unsatisfactory answer. The student has the right to receive an explanation regarding received assessment.

Assessment appeals policy

The results of the module and semester assessment are subject to appeal. A student must lodge an appeal to the director/dean on the day of certification or after announcing the results, but no later than the next working day. The appeal commission is established by the director/dean's order. The appeal commission's decision may change the grade in case of violations revealed during the attestation.

Assessment criteria

Assessment policy

The highest number of points based on the results of the current and final tests that a student can receive is 200 points. Assessment of students' current performance is carried out at each practical session on a four-point scale ("5", "4", "3", "2") and is entered in the journal of academic performance. The maximum number of points that a student can score for the current activity is 120, the minimum is 72 points. The number of points for the current one activity is calculated according to the formula $100 \times \frac{\text{arithmetic mean of the student's performance in the 4-point evaluation system}}{5}$. For diagnostic testing, the student receives a maximum of 10 points and a minimum of 6 points. Students who have completed all types of planned educational work, all worked out missed classes before the deadline are admitted to the Graded Credit. For Graded Credit, a student can receive a maximum of 40% of the total the number of points is 80, of which 60 points are for the theoretical part and 20 - for the practical part. Graded Credit is given to a student if he scored at least 48 points out of 80. Incentive points: 1. For a prize-winning place at the All-Ukrainian Surgery Olympiad - 12 points; 2. For a prize-winning place at the All-Ukrainian competition of student research papers on surgery at Ukrainian universities - 12 points; 3. For presenting a scientific report at international surgical conferences - 10 points; 4. For the presentation of a scientific report on surgery at competitions and conferences in universities of Ukraine, or participation in the All-Ukrainian Subject Olympiad on Surgery - 8 points; 5. For a prize-winning place in the Cathedral Surgery Olympiad - 5 points; 6. For the presentation of a scientific report on surgery at scientific conferences of Sumy State University - 5 points; 7. For active participation in the work of the student research group on surgery - 4 points; 8. For the production of visual educational aids (stands, tables, etc).

Alignment of learning outcomes with teaching and learning activities and assessment

Learning outcomes	Types of training	Learning activities	Teaching methods	Material and technical support	Methods and criteria for assessment
LO6	pr.tr.1-pr.tr.18	LA3, LA9, LA10, LA7, LA1, LA4, LA2, LA6, LA8, LA5	TM1, TM2, TM3, TM4, TM5, TM6	MTS1, MTS2, MTS3, MTS4, MTS5, MTS6, MTS7	SA3, SA4, SA1, SA2
LO7	pr.tr.1-pr.tr.18	LA3, LA9, LA10, LA7, LA1, LA4, LA2, LA6, LA8, LA5	TM1, TM2, TM3, TM4, TM5, TM6	MTS1, MTS2, MTS3, MTS5, MTS6, MTS7	SA3, SA4, SA1, SA2
LO25	pr.tr.1-pr.tr.18	LA3, LA9, LA10, LA7, LA1, LA4, LA2, LA6, LA8, LA5	TM1, TM2, TM3, TM4, TM5, TM6	MTS1, MTS2, MTS3, MTS5, MTS6, MTS7	SA3, SA4, SA1, SA2