

**MINISTRY OF HEALTH PROTECTION OF UKRAINE**

**ODESSA NATIONAL MEDICAL UNIVERSITY**

Department of general, pediatric and military surgery with a course of urology

**I APPROVE**

Vice-rector for scientific and pedagogical work

Eduard BURYACHKIVSKY

2024



**CURRICULUM ON ELECTIVE EDUCATIONAL DISCIPLINE**

**"Fire wounds of the abdominal cavity"**

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

**Field of knowledge:** 22 "Health care"

**Specialty:** 222 "Medicine"

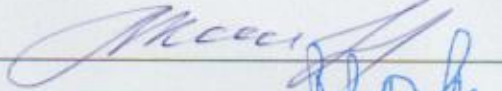
**Educational and professional program:** Medicine

The curriculum is compiled on the basis of 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 "Health care", approved by the Scientific Council of ONMedU (protocol No. 10 of June 27, 2024 ).

Developers: MD, Prof. M.A. Kashtalyan, MD, Assoc. Gerasimenko O.S., MD , Prof. V. E. Vansovich , Ph.D. Assoc. Davydov D.M., Ph.D. , Assoc. S. V. Tsypovyaz , Ph.D. , Assoc. E.A. Kvasnevskiy , Ph.D. , Assoc. Kvasnevsky O.A., assistant Bilash O.V.

The program was discussed at a meeting of the department of general, pediatric and military surgery with a urology course

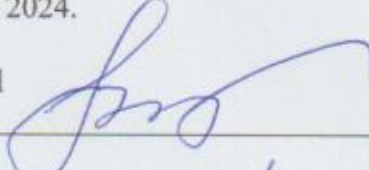
Protocol No. 1 dated August 27, 2024.

Head of the department  Mykhailo KASHTALYAN

Agreed with the guarantor of the EPP  Valery MARICHEREDA

The program was approved at the meeting of the subject cycle commission for surgical disciplines of the ONMedU

Protocol No. 1 dated August 30, 2024.

The head of the subject cycle methodical Committee on Surgical Disciplines  Vasy MISHCHENKO

Reviewed and approved at the meeting of the department of general, pediatric and military surgery a course of urology and ophthalmology

Protocol No. 1 of "4" September 2024

Head of the department  Mykhailo KASHTALYAN  
(signature) (First Name Surname)

Reviewed and approved at the meeting of the department

Protocol No. \_\_\_ of "\_\_\_" \_\_\_\_\_ 20\_\_



### 1. Description educational disciplines :

Name of indicators	Field of knowledge, specialty, specialization, level of higher education	Characteristics of the academic discipline
Total number:	Discipline 22 "Health care"	<i>Full-time education</i> <i>Elective discipline</i>
Credits: 3		<i>Year of training: 6</i>
Hours: 90	Specialty 222 "Medicine"	<i>Semesters V-VI</i> <i>Lectures (0 hours)</i>
Content modules: 4	Level of higher education second (master's )	<i>Seminars (0 hours)</i> <i>Practical (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 - test</i>

### 2. The purpose and tasks of the educational discipline

**Purpose :** Mastery by the acquirer of knowledge and formation of elements of professional competences in the field of surgery, and improvement of skills and competences acquired during the study of previous disciplines.

**Task:**

1. Formation of skills and abilities: on the diagnosis and treatment of gunshot wounds to the abdomen, their complications and consequences.
2. Mastering the skills of performing resuscitation surgical interventions for gunshot wounds to the abdomen.
3. Mastering the ability to determine the diagnostic program and surgical tactics for combat injuries of the abdomen, treatment of these injuries in different periods of wound disease and measures to prevent complications.

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

**Integral competence:** The ability to solve typical and complex problems, including those of a research and innovation nature in the field of medicine. Ability to continue learning with a high degree of autonomy.

**General (GC):**

- GC1 Ability to abstract thinking, analysis and synthesis
- GC2 Ability to learn and master 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
- GC17 Ability to evaluate and ensure the quality of performed works .

**Special (SC):**

- SC1 Ability to collect medical information about the patient and analyze clinical data



- SC6 Ability to determine the principles and nature of treatment and prevention of diseases.
- SC8 Ability to determine tactics and provide emergency medical care.
- SC10 Ability to perform medical manipulations
- SC16 Ability to maintain medical documentation, including electronic forms
- SC24 Compliance with ethical principles when working with patients and laboratory animals

**Program learning outcomes as a result of studying the academic discipline:**

PRO1 To have thorough knowledge of the structure of professional activity. To be able to carry out professional activities that require updating and integration of knowledge. To be responsible for professional development, the ability for further professional training with a high level of autonomy.

PRO4 Highlight and identify leading clinical symptoms and syndromes (according to list 1); according to standard methods, using preliminary anamnesis data, examination data of the injured, knowledge about the person, his organs and systems, establish a preliminary clinical diagnosis (according to list 2).

PRO5 Collect complaints, anamnesis of life and diseases, evaluate the psychomotor and physical development of the patient, the state of organs and systems of the body, based on the results of laboratory and instrumental studies, evaluate information about the diagnosis (according to list 4), taking into account the age of the patient.

PRO14 Determine tactics and provide emergency medical care in emergency situations (according to list 3) in limited time conditions according to existing clinical protocols and treatment standards.

PRO17 Perform medical manipulations (according to list 5) in the conditions of a medical institution, at home or at work based on a previous clinical diagnosis and/or indicators of the patient's condition by making a reasoned decision, observing the relevant ethical and legal norms.

PRO24 To organize the necessary level of individual safety (own and the persons they care about) in case of occurrence 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:**

- structure and modern classification of combat injuries of the abdomen;
- medical and evacuation measures in case of abdominal injury;
- peculiarities of the nature of combat injuries to the abdomen, depending on the type of weapon used by the enemy ;
- clinical signs and diagnosis of combat injuries of the abdomen ;
- characteristics of the manifestations of traumatic disease in the case of abdominal injuries ;
- surgical tactics for combat injuries of the abdomen: terms, volume and sequence of surgical interventions ;
- surgical tactics for thoracoabdominal injuries ;
- about sobriety surgical treatment injuries bodies abdominal cavities with mine-explosives injuries and explosives abdominal injury ;
- application ultrasonic navigation in surgical treatment ;
- endovideosurgical treatment intervention wounded with combatants abdominal injuries at II-IV levels medical assistance ;
- from use endoscopic transpapillary and endovascular interventions aimed at cholestasis and hemostasis in wounds liver ;
- use and intervention sonography in treatment complications fighting abdominal injuries ;
- features of reconstructive and restorative processes operational interventions in the wounded with ileostomies and colostomies ;
- possibilities of using NPWT therapy in treatment complications firearms abdominal injuries ;



- features of reconstruction firearms defects soft tissues of the front abdominal walls ;
- surgical features treatment ventral hernia after operations on abdominal organs cavities due to abdominal injuries ;
- opportunities to use cellular technologies in treatment fighting abdominal injuries .

**Be able:**

- carry out sorting of the wounded at the stages of medical evacuation;
- to diagnose injuries of the abdominal cavity;
- to diagnose injuries of abdominal organs;
- diagnose thoracoabdominal injuries;
- provide first aid to those wounded in the abdomen;
- conduct primary surgical treatment of wounds ;
- to icon secondary in surgical in treatment of wounds ;
- conduct bandages ;
- impose bandages ;

**3. Content educational disciplines**

**Incendiary wound abdominal cavities**

**Content module 1. The concept of combat surgical trauma.**

**Topic 1. Organization and content of surgical care for the wounded in the war.**

Organization of surgical care. Levels of medical provision. Medical triage at the stages of medical evacuation. Scope and content of medical assistance at the stages of medical evacuation. Medical evacuation.

**Topic 2. Combat surgical injury.**

Structure and classification of combat surgical trauma. Ballistic and morphological characteristics of a gunshot wound. Blast injury.

**Topic 3. General principles of combat surgical injury treatment.**

Primary surgical treatment of the wound. Peculiarities of primary surgical treatment of a gunshot wound. Secondary surgical treatment of the wound. Repeated surgical treatment of the wound.

**Topic 4. Traumatic shock.**

Etiology and pathogenesis of traumatic shock. Classification, clinic and diagnosis of traumatic shock. Prevention and treatment of traumatic shock at EME (stages of medical evacuation).

**Topic 5. Traumatic disease.**

Basics of the concept and pathogenesis of traumatic disease. Clinical course of traumatic disease. Assessment of severity and principles of treatment of traumatic disease. Surgical tactics in the treatment of wounds and injuries.

**Content module 2. The concept of gunshot wounds to the abdomen.**

**Topic 6. Fire injuries of the abdomen (frequency, structure, classification)**

Frequency and structure of combat injuries to the abdomen. Classification. Characteristics of injuries to abdominal organs in combat conditions. Examples of formulating a clinical diagnosis for combat injuries of the abdomen.

**Topic 7. Peculiarities of the organization of surgical care for those wounded in the stomach at the levels of medical support.**



Treatment and evacuation measures for abdominal injuries in the region (organization, terms, types, content and scope of surgical care). Features of the nature of combat injuries to the abdomen depending on the type of weapon used by the enemy. Sorting principles, terms and methods of evacuating the wounded with a combat injury of the abdomen in the conditions of hostilities.

**Content module 3. Features of clinical manifestations and diagnosis of combat injuries of the abdomen.**

**Topic 8. Clinical signs and symptoms of combat injuries to the abdomen.**

General condition of the wounded. Characteristics of entrance and exit holes of a gunshot wound. Differential diagnosis between penetrating and non-penetrating abdominal injuries. Comparative characteristics of ultrasound examination in the scope of the FAST protocol, laparocentesis and video laparoscopy in the diagnosis of gunshot wounds of the abdomen.

**Topic 9. X-ray diagnosis of gunshot wounds to the abdomen.**

X-ray methods: X-ray, X-ray, computer tomography. Ultrasound diagnostics: comparison of standard ultrasound and ultrasound examination in the scope of the FAST protocol.

**Topic 10. Traumatic disease with abdominal injuries.**

Characteristics of the manifestations of traumatic disease in abdominal injuries. Objective assessment of the severity and prognosis of the course of the traumatic disease in the wounded with combat injuries of the abdomen.

**Content module 4. Surgical treatment of the wounded with combat injuries of the abdomen.**

**Topic 11. Surgical tactics for combat injuries of the abdomen.**

Terms, volume and sequence of operational interventions . Surgical tactics for thoracoabdominal injuries. The latest technologies in the treatment of gunshot wounds of the diaphragm. Peculiarities of surgical treatment of injuries to abdominal organs in case of mine-explosive injuries and explosive abdominal trauma. The use of modern magnetic surgical instruments in the treatment of gunshot wounds of the abdomen. Non-penetrating wounds of the abdomen, the use of ultrasound navigation in surgical treatment.

**Topic 12. Surgical treatment of damage to the hollow organs of the abdominal cavity.**

Operative interventions for injury of the stomach and duodenum: suturing of the stomach, marginal resection of the stomach, resection of the stomach. Duodenostomy . Enterostomy . Resection of the small intestine. Right-sided hemicolectomy . Resection of the sigmoid colon. Colostomy .

**Topic 13. Surgical treatment of damage to parenchymal organs of the abdominal cavity and extraperitoneal space.**

Operative interventions for liver damage. Operative interventions for spleen damage. Damage to the pancreas.

**Topic 14. Application of minimally invasive surgical interventions in the treatment of combat injuries of the abdomen and their complications.**

Endovideosurgical interventions in the treatment of wounded with combat abdominal injuries at II-IV levels of medical care. Application of endoscopic transpapillary and endovascular interventions aimed at cholestasis and hemostasis in liver injuries at IV level of medical care. Interventional sonography in the treatment of complications of combat injuries to the abdomen.

**Topic 15. Reconstructive and restorative operations on the anterior abdominal wall and organs of the abdominal cavity in the treatment of the consequences of a combat injury to the abdomen.**

Reconstructive and restorative surgical interventions in the wounded with ileostomies and colostomies . The use of NPWT therapy in the treatment of complications of gunshot wounds to the abdomen. Reconstruction of gunshot defects of soft tissues of the anterior abdominal wall.



Surgical treatment of ventral hernias after operations on abdominal organs due to abdominal injuries. The use of cellular technologies in the treatment of combat injuries of the abdomen.

**Test.**

**The structure of the academic discipline**

Names of topics	Number of hours					
	In total	Including				
		Lectures	Seminars	Practical	Laboratory	IWS
<b>Content module 1. The concept of combat surgical trauma.</b>						
Topic 1. Organization and content of surgical care for the wounded in the war. Organization of surgical care. Levels of medical provision. Medical triage at the stages of medical evacuation. Scope and content of medical assistance at the stages of medical evacuation. Medical evacuation.	6	0	0	2	0	4
Topic 2. Combat surgical injury. Structure and classification of combat surgical trauma. Ballistic and morphological characteristics of a gunshot wound. Blast injury.	6	0	0	2	0	4
Topic 3. General principles of combat surgical injury treatment. Primary surgical treatment of the wound. Features of primary surgical treatment of a gunshot wound. Secondary surgical treatment of the wound. Repeated surgical treatment of the wound.	6	0	0	2	0	4
Topic 4. Traumatic shock. Etiology and pathogenesis of traumatic shock. Classification, clinic and diagnosis of traumatic shock. Prevention and treatment of traumatic shock at EME (stages of medical evacuation).	6	0	0	2	0	4
Topic 5. Traumatic disease. Basics of the concept and pathogenesis of traumatic disease. Clinical course of	6	0	0	2	0	4

traumatic disease. Assessment of severity and principles of treatment of traumatic disease. Surgical tactics in the treatment of wounds and injuries.						
<i>Together according to content module 1</i>	30	0	0	10	0	20
<b>Content module 2. The concept of gunshot wounds to the abdomen.</b>						
Topic 6. Fire injuries of the abdomen (frequency, structure, classification) Frequency and structure of combat injuries to the abdomen. Classification. Characteristics of injuries to abdominal organs in combat conditions. Examples of formulating a clinical diagnosis for combat injuries of the abdomen.	6	0	0	2	0	4
Topic 7. Peculiarities of the organization of surgical care for those wounded in the stomach at the levels of medical support. Treatment and evacuation measures for abdominal injuries in the region (organization, terms, types, content and scope of surgical care). Features of the nature of combat injuries to the abdomen depending on the type of weapon used by the enemy. Sorting principles, terms and methods of evacuating the wounded with a combat abdominal injury in the conditions of hostilities.	6	0	0	2	0	4
<i>Together according to content module 2</i>	12	0	0	4	0	8
<b>Content module 3. Features of clinical manifestations and diagnosis of combat injuries of the abdomen.</b>						
Topic 8. Clinical signs and symptoms of combat injuries to the abdomen. General condition of the wounded. Characteristics of entrance and exit holes of a gunshot wound. Differential	6	0	0	2	0	4



diagnosis between penetrating and non-penetrating abdominal injuries. Comparative characteristics of ultrasound examination in the scope of the FAST protocol, laparocentesis and video laparoscopy in the diagnosis of gunshot wounds of the abdomen.						
Topic 9. X-ray diagnosis of gunshot wounds to the abdomen. X-ray methods: X-ray, X-ray, computer tomography. Ultrasound diagnostics: comparison of standard ultrasound and ultrasound examination in the scope of the FAST protocol.	6	0	0	2	0	4
Topic 10. Traumatic disease with abdominal injuries. Characteristics of the manifestations of traumatic disease in abdominal injuries. Objective assessment of the severity and prognosis of the course of the traumatic disease in the wounded with combat injuries of the abdomen.	6	0	0	2	0	4
<i>Together according to content module 3</i>	18	0	0	6	0	12
<b>Content module 4. Surgical treatment of the wounded with combat injuries of the abdomen.</b>						
Topic 11. Surgical tactics for combat injuries of the abdomen. Terms, volume and sequence of operational interventions . Surgical tactics for thoracoabdominal wounds. The latest technologies in the treatment of gunshot wounds of the diaphragm. Peculiarities of surgical treatment of injuries to abdominal organs in case of mine-explosive injuries and explosive abdominal trauma.	6	0	0	2	0	4

The use of modern magnetic surgical instruments in the treatment of gunshot wounds of the abdomen. Non-penetrating wounds of the abdomen, the use of ultrasound navigation in surgical treatment.						
Topic 12. Surgical treatment of damage to the hollow organs of the abdominal cavity. Operative interventions for injury of the stomach and duodenum: suturing of the stomach, marginal resection of the stomach, resection of the stomach. Duodenostomy . Enterostomy . Resection of the small intestine. Right-sided hemicolectomy . Resection of the sigmoid colon. Colostomy .	6	0	0	2	0	4
Topic 13. Surgical treatment of damage to parenchymal organs of the abdominal cavity and extraperitoneal space. Operative interventions for liver damage. Operative interventions for spleen damage. Damage to the pancreas.	6	0	0	2	0	4
Topic 14. Application of minimally invasive surgical interventions in the treatment of combat injuries of the abdomen and their complications. Endovideosurgical interventions in the treatment of wounded with combat abdominal injuries at II-IV levels of medical care. Application of endoscopic transpapillary and endovascular interventions aimed at cholestasis and hemostasis in liver injuries at IV level of medical care. Interventional sonography in	6	0	0	2	0	4



the treatment of complications of combat injuries to the abdomen.						
Topic 15. Reconstructive and restorative operations on the anterior abdominal wall and organs of the abdominal cavity in the treatment of the consequences of a combat injury to the abdomen. Reconstructive and restorative surgical interventions in the wounded with ileostomies and colostomies . The use of NPWT therapy in the treatment of complications of gunshot wounds to the abdomen. Reconstruction of gunshot defects of soft tissues of the anterior abdominal wall. Surgical treatment of ventral hernias after operations on abdominal organs due to abdominal injuries. The use of cellular technologies in the treatment of combat injuries of the abdomen.	6	0	0	2	0	4
<i>Together according to content module 4</i>	30	0	0	10	0	20
Test.	0	0	0	0	0	0
<b>Total : hours:</b>	90	0	0	30	0	60

### 5. Topics of lectures / seminars / practical / laboratory classes

#### 5.1. Topics of lectures

Lectures are not provided.

#### 5.2. Topics of seminar classes

Seminar classes are not provided.

#### 5.3. Topics of practical classes

No	Topic name	Number of hours
1	Topic 1. Practical class 1. Organization and content of surgical care for the wounded in the war. Organization of surgical care. Levels of medical provision. Medical triage at the stages of medical evacuation. Scope and content of medical assistance at the stages of medical evacuation. Medical evacuation.	2

2.	Topic 2. Practical class 2. Combat surgical injury. Structure and classification of combat surgical trauma. Ballistic and morphological characteristics of a gunshot wound. Blast injury.	2
3	Topic 3. Practical class 3. General principles of treatment of combat surgical trauma. Primary surgical treatment of the wound. Features of primary surgical treatment of a gunshot wound. Secondary surgical treatment of the wound. Repeated surgical treatment of the wound.	2
4	Topic 4. Practical class 4. Traumatic shock. Etiology and pathogenesis of traumatic shock. Classification, clinic and diagnosis of traumatic shock. Prevention and treatment of traumatic shock at EME (stages of medical evacuation).	2
5	Topic 5. Practical class 5. Traumatic disease. Basics of the concept and pathogenesis of traumatic disease. Clinical course of traumatic disease. Assessment of severity and principles of treatment of traumatic disease. Surgical tactics in the treatment of wounds and injuries.	2
6	Topic 6. Practical class 6. Abdominal fire injuries (frequency, structure, classification) Frequency and structure of combat injuries to the abdomen. Classification. Characteristics of injuries to abdominal organs in combat conditions. Examples of formulating a clinical diagnosis for combat injuries of the abdomen.	2
7	Topic 7. Practical class 7. Peculiarities of the organization of surgical care for those wounded in the stomach at the levels of medical support. Treatment and evacuation measures for abdominal injuries in the region (organization, terms, types, content and scope of surgical care). Features of the nature of combat injuries to the abdomen depending on the type of weapon used by the enemy. Sorting principles, terms and methods of evacuating the wounded with a combat abdominal injury in the conditions of hostilities.	2
8	Topic 8. Practical class 8. Clinical signs and symptoms of combat injuries of the abdomen. General condition of the wounded. Characteristics of entrance and exit holes of a gunshot wound. Differential diagnosis between penetrating and non-penetrating abdominal injuries. Comparative characteristics of ultrasound examination in the scope of the FAST protocol, laparocentesis and video laparoscopy in the diagnosis of gunshot wounds of the abdomen.	2
9	Topic 9. Practical class 9. Radiation diagnosis of gunshot wounds to the abdomen. X-ray methods: X-ray, X-ray, computer tomography. Ultrasound diagnostics: comparison of standard ultrasound and ultrasound examination in the scope of the FAST protocol.	2
10	Topic 10. Practical class 10. Traumatic disease with abdominal injuries. Characteristics of the manifestations of traumatic disease in abdominal injuries. Objective assessment of the severity and prognosis of the course of the traumatic disease in the wounded with combat injuries of the abdomen.	2
11	Topic 11. Practical class 11.	2



	Surgical tactics for combat injuries of the abdomen. Terms, volume and sequence of operational interventions . Surgical tactics for thoracoabdominal wounds. The latest technologies in the treatment of gunshot wounds of the diaphragm. Peculiarities of surgical treatment of injuries to abdominal organs in case of mine-explosive injuries and explosive abdominal trauma. The use of modern magnetic surgical instruments in the treatment of gunshot wounds of the abdomen. Non-penetrating wounds of the abdomen, the use of ultrasound navigation in surgical treatment.	
12	Topic 12. Practical class 12. Surgical treatment of damage to the hollow organs of the abdominal cavity. Operative interventions for injury of the stomach and duodenum: suturing of the stomach, marginal resection of the stomach, resection of the stomach. Duodenostomy . Enterostomy . Resection of the small intestine. Right-sided hemicolectomy . Resection of the sigmoid colon. Colostomy .	2
13	Topic 13. Practical class 13. Surgical treatment of damage to parenchymal organs of the abdominal cavity and extraperitoneal space. Operative interventions for liver damage. Operative interventions for spleen damage. Damage to the pancreas.	2
14	Topic 14. Practical class 14. Application of minimally invasive surgical interventions in the treatment of combat injuries of the abdomen and their complications. Endovideosurgical interventions in the treatment of wounded with combat abdominal injuries at II-IV levels of medical care. Application of endoscopic transpapillary and endovascular interventions aimed at cholestasis and hemostasis in liver injuries at IV level of medical care. Interventional sonography in the treatment of complications of combat injuries to the abdomen.	2
15	Topic 15. Practical class 15. Reconstructive and restorative operations on the anterior abdominal wall and organs of the abdominal cavity in the treatment of the consequences of a combat injury to the abdomen. Reconstructive and restorative surgical interventions in the wounded with ileostomies and colostomies . The use of NPWT therapy in the treatment of complications of gunshot wounds to the abdomen. Reconstruction of gunshot defects of soft tissues of the anterior abdominal wall. Surgical treatment of ventral hernias after operations on abdominal organs due to abdominal injuries. The use of cellular technologies in the treatment of combat injuries of the abdomen.	2
	Together	30

#### 5.4. Laboratory topics classes

Laboratory classes are not provided .

### 6. Independent work of a student of higher education

No	Title of the topic / types of tasks	Number of hours
1.	Topic 1. Preparation for practical class 1. Organization and content of surgical care for the wounded in the war.	4



	Organization of surgical care. Levels of medical provision. Medical triage at the stages of medical evacuation. Scope and content of medical assistance at the stages of medical evacuation. Medical evacuation.	
2.	Topic 2. Preparation for practical class 2. Combat surgical injury. Structure and classification of combat surgical trauma. Ballistic and morphological characteristics of a gunshot wound. Blast injury.	4
3.	Topic 3. Preparation for practical class 3. General principles of treatment of combat surgical trauma. Primary surgical treatment of the wound. Features of primary surgical treatment of a gunshot wound. Secondary surgical treatment of the wound. Repeated surgical treatment of the wound.	4
4.	Topic 4. Preparation for practical class 4. Traumatic shock. Etiology and pathogenesis of traumatic shock. Classification, clinic and diagnosis of traumatic shock. Prevention and treatment of traumatic shock at EME (stages of medical evacuation).	4
5.	Topic 5. Preparation for practical class 5. Traumatic disease. Basics of the concept and pathogenesis of traumatic disease. Clinical course of traumatic disease. Assessment of severity and principles of treatment of traumatic disease. Surgical tactics in the treatment of wounds and injuries.	4
6.	Topic 6. Preparation for practical class 6. Abdominal fire injuries (frequency, structure, classification) Frequency and structure of combat injuries to the abdomen. Classification. Characteristics of injuries to abdominal organs in combat conditions. Examples of formulating a clinical diagnosis for combat injuries of the abdomen.	4
7.	Topic 7. Preparation for practical class 7. Peculiarities of the organization of surgical care for those wounded in the stomach at the levels of medical support. Treatment and evacuation measures for abdominal injuries in the region (organization, terms, types, content and scope of surgical care). Features of the nature of combat injuries to the abdomen depending on the type of weapon used by the enemy. Sorting principles, terms and methods of evacuating the wounded with a combat abdominal injury in the conditions of hostilities.	4
8.	Topic 8. Preparation for practical class 8. Clinical signs and symptoms of combat injuries of the abdomen. General condition of the wounded. Characteristics of entrance and exit holes of a gunshot wound. Differential diagnosis between penetrating and non-penetrating abdominal injuries. Comparative characteristics of ultrasound examination in the scope of the FAST protocol, laparocentesis and video laparoscopy in the diagnosis of gunshot wounds of the abdomen.	4
9.	Topic 9. Preparation for practical class 9. Radiation diagnosis of gunshot wounds of the abdomen. X-ray methods: X-ray, X-ray, computer tomography. Ultrasound diagnostics: comparison of standard ultrasound and ultrasound examination in the scope of the FAST protocol.	4
10.	Topic 10. Preparation for practical class 10. Traumatic disease with abdominal injuries.	4



	Characteristics of the manifestations of traumatic disease in abdominal injuries. Objective assessment of the severity and prognosis of the course of the traumatic disease in the wounded with combat injuries of the abdomen.	
11.	Topic 11. Preparation for practical class 11. Surgical tactics for combat injuries of the abdomen. Terms, volume and sequence of operational interventions . Surgical tactics for thoracoabdominal wounds. The latest technologies in the treatment of gunshot wounds of the diaphragm. Peculiarities of surgical treatment of injuries to abdominal organs in case of mine-explosive injuries and explosive abdominal trauma. The use of modern magnetic surgical instruments in the treatment of gunshot wounds of the abdomen. Non-penetrating wounds of the abdomen, the use of ultrasound navigation in surgical treatment.	4
12.	Topic 12. Preparation for practical class 12. Surgical treatment of damage to the hollow organs of the abdominal cavity. Operative interventions for injury of the stomach and duodenum: suturing of the stomach, marginal resection of the stomach, resection of the stomach. Duodenostomy . Enterostomy . Resection of the small intestine. Right-sided hemicolectomy . Resection of the sigmoid colon. Colostomy .	4
13.	Topic 13. Preparation for practical class 13. Surgical treatment of damage to parenchymal organs of the abdominal cavity and extraperitoneal space. Operative interventions for liver damage. Operative interventions for spleen damage. Damage to the pancreas.	4
14.	Topic 14. Preparation for practical class 14. Application of minimally invasive surgical interventions in the treatment of combat injuries of the abdomen and their complications. Endovideosurgical interventions in the treatment of wounded with combat abdominal injuries at II-IV levels of medical care. Application of endoscopic transpapillary and endovascular interventions aimed at cholestasis and hemostasis in liver injuries at IV level of medical care. Interventional sonography in the treatment of complications of combat injuries to the abdomen.	4
15.	Topic 15. Preparation for practical class 15. Reconstructive and restorative operations on the anterior abdominal wall and organs of the abdominal cavity in the treatment of the consequences of a combat injury to the abdomen. Reconstructive and restorative surgical interventions in the wounded with ileostomies and colostomies . The use of NPWT therapy in the treatment of complications of gunshot wounds to the abdomen. Reconstruction of gunshot defects of soft tissues of the anterior abdominal wall. Surgical treatment of ventral hernias after operations on abdominal organs due to abdominal injuries. The use of cellular technologies in the treatment of combat injuries of the abdomen.	4
	<b>Together</b>	<b>60</b>

## 7. Teaching methods

**Practical classes:** conversation, solving clinical situational problems, demonstration and practice of manipulation skills according to list 5, instruction and practice of skills on simulation dummies.



**Independent work:** independent work with the textbook, independent solution of clinical tasks.

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

**Current control:** oral survey, testing, assessment of performance of practical skills, solution of situational clinical tasks, assessment of activity in class.

**Final control :** credit.

*The structure of the current evaluation in the practical class :*

1. Evaluation of theoretical knowledge on the subject of the class:
  - methods: survey, solving a situational clinical problem;
  - the maximum score is 5, the minimum score is 3, the unsatisfactory score is 2 .
2. Evaluation of practical skills and manipulations on the subject of the class:
  - methods: assessment of the correctness of the performance of practical skills
  - the maximum score is 5, the minimum score is 3, the unsatisfactory score is 2 .

#### Current assessment criteria for practical training:

Rating	Evaluation criteria
Perfectly "5"	The applicant is fluent in the material, takes an active part in discussing and solving a situational clinical problem, confidently demonstrates practical skills and interpretations of clinical, laboratory and instrumental research data, expresses his opinion on the subject of the class, demonstrates clinical thinking.
Good "4"	The applicant has a good command of the material, participates in the discussion and solution of a situational clinical problem, demonstrates practical skills and interpretations of clinical, laboratory and instrumental research data with some errors, expresses his opinion on the subject of the class, demonstrates clinical thinking.
Satisfactorily "3"	The applicant does not have sufficient knowledge of the material, is unsure of participating in the discussion and solution of a situational clinical problem, demonstrates practical skills and interpretations of clinical, laboratory and instrumental research data with significant errors.
Unsatisfactorily "2"	The applicant does not possess the material, does not participate in the discussion and solution of the situational clinical problem, does not demonstrate practical skills and interpretation of clinical, laboratory and instrumental research data.

Credit is given to the applicant who completed all tasks of the work program of the academic discipline, took an active part in practical classes, completed and defended an individual assignment and has an average current grade of at least 3.0 and has no academic debt.

Test carried out: at the last class before the beginning of the examination session - at ribbon system teaching, on to the last occupation - with a cyclical system of education. The credit score is the arithmetic average of all components on a traditional four-point scale and has a value that is rounded using the statistics method with two decimal places after the decimal point.

### 9. Distribution of points received by students of higher education

The obtained average score for the academic discipline for applicants who have successfully mastered the work program of the academic discipline is converted from a traditional four-point scale to points on a 200-point scale, as shown in the table:

#### Conversion table of a traditional assessment into a multi-point scale



<b>Traditional four-point scale</b>	<b>Multipoint 200-point scale</b>
Excellent ("5")	185 - 200
Good ("4")	151 - 184
Satisfactory ("3")	120-150
Unsatisfactory ("2")	Below 120

Multi-point scale (200-point scale) characterizes the actual success rate of each applicant in mastering the educational component. The conversion of the traditional grade (average score for the academic discipline) into a 200-point grade is performed by the information and technical department of the University.

According to the obtained points on a 200-point scale, the achievements of the applicants are evaluated according to the ECTS rating scale. Further ranking according to the ECTS rating scale allows you to evaluate the achievements of students from the educational component who are studying in the same course of the same specialty, according to the points they received.

The ECTS scale is a relative-comparative rating, which establishes the applicant's belonging to the group of better or worse among the reference group of fellow students (faculty, specialty). An "A" grade on the ECTS scale cannot be equal to an "excellent" grade, a "B" grade to a "good" grade, etc. When converting from a multi-point scale, the limits of grades "A", "B", "C", "D", "E" according to the ECTS scale do not coincide with the limits of grades "5", "4", "3" according to the traditional scale. Getters who have received grades "FX" and "F" ("2") are not included in the list of ranked getters. The grade "FX" is awarded to students who have obtained the minimum number of points for the current learning activity, but who have not passed the final examination. A grade of "F" is assigned to students who have attended all classes in the discipline, but have not achieved a grade point average (3.00) for the current academic activity and are not admitted to the final examination.

Applicants who study on one course (one specialty), based on the number of points scored in the discipline, are ranked on the ECTS scale as follows:

**Conversion of the traditional grade from the discipline and the sum of points on the ECTS scale**

<b>Evaluation on the ECTS scale</b>	<b>Statistical indicator</b>
A	Top 10% achievers
B	The next 25% of earners
C	The next 30% of earners
D	The next 25% of earners
E	The next 10% of earners

### 10. Methodological support

- Curriculum of the academic discipline
- Syllabus of the academic discipline
- Situational clinical tasks
- Methodical development of practical classes

### 11. List of questions for assessment

1. Frequency and structure of combat injuries to the abdomen.
2. Classification and characteristics of gunshot injuries of abdominal organs.
3. Rules for formulating a clinical diagnosis for combat injuries of the abdomen.
4. Treatment and evacuation measures for abdominal injuries in the area of hostilities (organization, terms, types, content and volume of surgical assistance).



5. Features of the nature of combat injuries to the abdomen depending on the type of weapon used by the enemy.
6. Sorting principles, terms and methods of evacuation of the wounded with a combat abdominal injury.
7. Clinical signs and diagnosis of combat injuries of the abdomen.
8. Comparative characteristics of ultrasound examination in the scope of the FAST protocol, laparocentesis and video laparoscopy in the diagnosis of gunshot wounds to the abdomen.
9. Characteristics of the manifestations of traumatic disease in abdominal injuries. Objective assessment of the severity and prognosis of the course of the traumatic disease in the wounded with combat injuries of the abdomen.
10. Surgical tactics for combat injuries of the abdomen: terms, volume and sequence of surgical interventions.
11. Surgical tactics for thoracoabdominal wounds.
12. Peculiarities of surgical treatment of injuries to abdominal organs in case of mine-explosive injuries and explosive abdominal trauma.
13. Non-penetrating wounds of the abdomen, use of ultrasound navigation in surgical treatment.
14. Endovideosurgical interventions in the treatment of wounded with combat injuries of the abdomen at II-IV levels of medical care.
15. Application of endoscopic transpapillary and endovascular interventions aimed at cholestasis and hemostasis in liver injuries.
16. Interventional sonography in the treatment of complications of combat injuries to the abdomen.
17. Reconstructive and restorative surgical interventions in the wounded with ileostomies and colostomies.
18. Application of NPWT therapy in the treatment of complications of gunshot wounds to the abdomen.
19. Reconstruction of gunshot defects of soft tissues of the anterior abdominal wall.
20. Surgical treatment of ventral hernias after operations on abdominal organs due to abdominal injuries.
21. The use of cellular technologies in the treatment of combat injuries of the abdomen

### **LIST OF PRACTICAL SKILLS, THE ACQUISITION OF WHICH IS CONTROLLED DURING THE ASSESSMENT**

#### **I. Analysis of laboratory and instrumental studies (according to list 4)**

1. pleural analysis liquid
2. analysis of ascitic liquid
3. synovial analysis liquid
4. urine analysis for Zimnytskyi
5. urine analysis for Nechiporenkom
6. alpha-amylase activity in blood and urine
7. pulse oximetry, indicators of acid-base status and blood gases
8. blood proteins and their fractions, C-reactive protein and procalcitonin
9. blood glucose, glycosylated hemoglobin,
10. oral tolerance test to glucose
11. blood lipids and lipoproteins and their fractions
12. blood hormones
13. serum ferritin, iron, and copper of blood



14. creatinine, blood and urine urea, club speed eye filtration
15. blood electrolytes
16. aminotransferases of blood
17. total blood bilirubin and its factions
18. coagulogram
19. uric acid, lactic acid of blood
20. alkaline phosphatase of blood
21. histomorphological study of a lymphatic biopsy nodes
22. study of the external function breath
23. standard ECG (at 12 leads)
24. endoscopic examination bronchi
25. endoscopic examination of the digestive tract tract
26. echocardiography and dopplerography
27. general analysis stool, fecal elastase-1
28. general analysis of blood
29. general analysis urine
30. general analysis of the spinal cord liquid
31. general analysis of the sternum punctuation
32. general analysis sputum
33. general immunological profile of blood
34. serological reactions in infectious diseases
35. express tests for viruses disease
36. amplification methods in infectious diseases (PCR, LLR)
37. serological reactions in autoimmune diseases
38. microbiological research of biological fluids and secretions
39. methods of instrumental visualization of the thyroid gland glands
40. methods of instrumental visualization of organs abdominal cavity
41. methods of instrumental visualization of organs chest cavity
42. methods of instrumental genitourinary visualization systems
43. methods of instrumental visualization of the skull, spine, spinal cord, bones and joints
44. methods of instrumental imaging of the chest glands
45. multi-point fractional study of bile and pH-metry of the stomach and esophagus
46. Assessment of the child's physical development using sigmoidal nomograms.
47. Assessment of growth according to centile nomograms.
48. Assessment of blood pressure according to centile nomograms, taking into account the centile assessment of the child's height.

## **II. Medical manipulations (according to list 5)**

1. Administer injections of medicinal substances
2. Measure blood pressure
3. Catheterize the bladder with a soft probe
4. Restore the patency of the respiratory tract
5. Perform artificial respiration, indirect heart massage
6. Install a nasogastric and orogastric tube
7. Perform thoracopuncture and drainage of pleural cavities
8. Perform laparocentesis
9. Perform primary surgical treatment of a gunshot wound



## 10. Perform temporary and final stoppage of bleeding

**III. Providing assistance in emergency situations (according to list 3)**

1. Traumatic shock
2. Acute respiratory failure
3. Acute heart failure
4. External or internal bleeding
5. Hemo- or pneumothorax
6. Fractures of the spine, pelvis, bones of the limbs

**12. Recommended literature****Main:**

1. Атлас бойової хірургічної травми (досвід антитерористичної операції / операції об'єднаних сил). Під загальною ред. В. І. Цимбалюка. Харків: Колегіум, – 2021. – 385 с.
2. Білий В. Я., Жаховський В. О., Лівінський В. Г. Місце та роль Воєнно-медичної доктрини України у формуванні системи медичного забезпечення військ і цивільного населення у воєнний час. Наука і оборона. 2015. №1. С. 9-14.
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2. Ball C.G. Current management of penetrating torso trauma: nontherapeutic is not good enough anymore / C.G. Ball // J. Can. Chir. – 2014. – Vol. 57, N 2. – P. 36–43.
3. Bhangu A, Nepogodiev D, Lal N, Bowley DM: Meta-analysis of predictive factors and outcomes for failure of non-operative management of blunt splenic trauma. Injury 2012; 43(9): 1337–46.
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### 13. Electronic information resources

1. <https://moz.gov.ua/> - Ministry of Health of Ukraine
2. [www.ama-assn.org](http://www.ama-assn.org) - American Medical Association / American Medical Association
3. [www.who.int](http://www.who.int) - World Health Organization
4. [www.dec.gov.ua/mtd/home/](http://www.dec.gov.ua/mtd/home/) - State Expert Center of the Ministry of Health of Ukraine
5. <http://bma.org.uk> - British Medical Association
6. <http://iss-sic.com/> - International Society of Surgeons