

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

**Faculty of international**

**Department of General and Military Surgery**

**Syllabus of the academic discipline  
" Gunshot wounds of the abdominal cavity"**

<b>Scope of the academic discipline</b>	Total number of hours per discipline: 90 hours, 3 credits. Semesters: XI-XII. 6 years of study.
<b>Days, time, place of educational discipline</b>	According to the schedule of classes. Department of General and Military Surgery. Odesa, str. Pastera 9, ave . Valikhovskiyi , 5, Multidisciplinary Medical Center of ONMedU . 1 surgical department, 2 surgical department
<b>Teacher(s)</b>	M.A. Kashtalyan, MD., professor, head of the department. Professors: MD., V. E. Vansovich, MD., MD., O.S. Gerasimenko. Associate professors: Ph.D., Drobkov O.L., Ph.D., Kvasnevsky O.A., Ph.D., Kvasnevsky Y.A., Ph.D., Kolotvin A.O., Ph.D., Ilyina-Stognienko V.Yu., Ph.D., Davydov D.M. Assistants: Ph.D., Romak O.I., Ph.D., Samarskyi I.M., Ph.D., Muradyan K.R., Bilash O.V., Pokhleбина V.B., Vityuk M.S.
<b>Contact Information</b>	Help by phone: Bilash Oksana Viktorivna, head teacher of the department 093-848-4048 Ilyina-Stognienko Viktoriya Yuriivna , responsible for organizational and educational work of the department 067-971-21-05 Zhebrakovska Maryna Yuriivna, senior laboratory technician of the department 050-316-10-91 E - mail : surgdep@onmedu.edu.ua Face-to-face consultations: from 2:00 p.m. to 5:00 p.m. every Thursday, from 9:00 a.m. to 2:00 p.m. every Saturday Online consultations: from 2:00 p.m. to 5:00 p.m. every Thursday, from 9:00 a.m. to 2:00 p.m. every Saturday. The link to the online consultation is provided to each group during classes separately.

**COMMUNICATION**

Communication with education seekers will be conducted in the classroom (face-to-face). During distance learning, communication is carried out through the Microsoft Teams platform, as well as through Outlook e-mail correspondence.

## ABSTRACT OF THE ACADEMIC DISCIPLINE

*Subject study of the discipline* - diagnosis and treatment of gunshot wounds of the abdominal cavity, determination of tactics, diagnosis, differential diagnosis, operative treatment.

*Prerequisites and post-requisites of the discipline (place of the discipline in the educational program):*

*Prerequisites:* Ukrainian language (by professional direction), foreign language (by professional direction), Latin language and medical terminology, medical biology, medical and biological physics, biological and bioorganic chemistry, human anatomy, histology, cytology and embryology, physiology, microbiology, virology and immunology, general surgery, hospital surgery.

*Post-requisites:* surgery, traumatology and orthopedics, urology, neurosurgery, anesthesiology and intensive care, emergency and emergency medical care .

*The goal of the discipline:* acquisition by the student of higher education 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.

*Tasks of the discipline:*

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.

*Expected results:*

*As a result of studying the academic discipline, the applicant 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 wounds ;
- about the feasibility of surgical treatment of injuries to the abdominal cavity in case of mine-explosive wounds and explosive abdominal trauma ;
- application of ultrasound navigation in surgical treatment ;
- endo -videosurgical interventions in the treatment of wounded with combat injuries of the abdomen at II-IV levels of medical care ;
- on the use of endoscopic transpapillary and endovascular interventions for the purpose of cholestasis and hemostasis in liver injuries ;
- the use of interventional sonography in the treatment of complications of combat injuries to the abdomen ;
- peculiarities of reconstructive and restorative surgical interventions in the wounded with ileostomies and colostomies ;
- possibilities of using NPWT therapy in the treatment of complications of gunshot wounds to the abdomen ;
- peculiarities of reconstruction of gunshot defects of soft tissues of the anterior abdominal wall ;

- peculiarities of surgical treatment of ventral hernias after operations on abdominal organs due to abdominal injuries ;
- opportunities in the use of cellular technologies in the treatment of combat injuries of the abdomen .

*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;
- carry out primary surgical treatment of wounds ;
- to iconize secondary to surgical treatment of wounds ; \_ \_
- make bandages ;
- apply bandages ;

## **DESCRIPTION OF THE ACADEMIC DISCIPLINE**

*Forms and methods of education*

The discipline will be taught in the form of practical classes ( 30 classroom hours) and the organization of the applicant's independent work ( 60 hours).

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

*Content of the academic discipline*

### **Gunshot wounds of the abdomen**

#### **Content module 1. The concept of gunshot wounds to the abdomen.**

##### **Topic 1. Fire injuries of the abdomen (frequency, structure, classification)**

Frequency and structure of combat injuries to the abdomen. Classification. Characteristics of damage to abdominal organs according to the data of the ATO/OJF. Examples of formulating a clinical diagnosis for combat injuries of the abdomen.

##### **Topic 2. 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. Principles of triage, terms and methods of evacuation of the wounded with a combat injury of the abdomen in the conditions of hostilities.

#### **Content module 2. Features of clinical manifestations and diagnostics of combat injuries of the abdomen.**

##### **Topic 3. 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 4. X-ray diagnostics 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 .

##### **Topic 5. 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 3. Surgical treatment of the wounded with combat injuries of the abdomen.**

#### **Topic 6. 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 7. 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. The use of endoscopic transpapillary and endovascular interventions for the purpose of 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 8. 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.

#### **Topic 9. Credit.**

#### *List of 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.
3. Вказівки з воєнно-польової хірургії. Під редакцією Я.Л. Заруцького, А.А.Шудрака – Київ, 2014. – 396 с.
4. Воєнно-польова хірургія. Керівництво за редакцією д.мед.н., проф. Я. Л. Заруцького і д.мед.н., проф. В.Я. Білого. Київ, 2018. 545 с.
5. Заруцький Я. Л. та ін. Воєнно-польова хірургія. Підручник за редакцією д.мед.н. проф. Я.Л.Заруцького і академіка НАМН України, д.мед.н., проф. В.М. Запорожана. Одеський медуніверситет. 2016. 416 с.
6. Davies, J. Open surgical simulation – a review / J. Davies, M. Khatib, F. Bello // J. Surg. Educ. – 2013. – Vol. 70, N 5. – P. 618–662.
- 7.

##### *Additional literature*

1. Aman, Z. Frequency of hepatic trauma in patients with abdominal firearm injuries / Z. Aman [et al.] // *KJMS*. – 2011. – Vol. 3, N 2. – P. 76–78.
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.
4. Bortolin M, Baldari L, Sabbadini MG, Roy N. Primary repair or fecal diversion for colorectal injuries after blast: a medical review. *Prehosp Disaster Med.* 2014 Jun;29(3):317-9. doi: 10.1017/S1049023X14000508.
5. Bradley M.J. Independent predictors of enteric fistula and abdominal sepsis after damage control laparotomy. Results from the prospective AAST open abdomen registry / M.J. Bradley [et al.] // *JAMA Surg.* – 2013. – Vol. 148, N 10. – P. 947–954.
6. Ciuffi S., Zonefrati R., Brandi M. L. Adipose stem cells for bone tissue repair. *Clin. Cases Miner. Bone Metab.* 2017. 14, N 2. P. 217-226.
7. De Lesquen H., Beranger F., Berbis J., Boddaert G., Poichotte A., Pons F., Avaro J. P. Challenges in war-related thoracic injury faced by French military surgeons in Afghanistan (2009-2013). *Injury.* 2016. 47, N 9. P. 1939-1944.
8. DuBose, J.J. Open abdominal management after damage-control laparotomy for trauma: A prospective observational American Association for the Surgery of Trauma multicenter study/ J.J. DuBose [et al.] // *J. Trauma.* – 2013. – Vol. 74, N 1. – P. 113–122.
9. Garst G.C. Delayed duodenal injury following abdominal gunshot wound /G.C. Garst [et al.] // *J. Trauma Acute Care Surg.* – 2014. – Vol. 77, N 5. – P. 796–797.
10. Gilbert, Kim; Rousseau, Guy; Bouchard, Caroline. Caspase-(8/3) activation and organ inflammation in a rat model of resuscitated hemorrhagic shock: A role for uric acid. *Journal of Trauma and Acute Care Surgery.* 86(3):431-439, March 2019.
11. Glasgow, S.C. Initial management and outcome of modern battlefield anal trauma / S.C. Glasgow [et al.] // *Dis. Colon. Rectum.* – 2014. – Vol. 57, N 8. – P. 1012– 1018.
12. Gybalo R. V., Tsema Ie. V., Batiuk A. I. The treatment results of patients with postoperative ventral hernias after multi-stage surgery of open abdominal gunshot wounds (improvement of hernioplasty-technique). *Journal of Education, Health and Sport.* 2020;10(7):216-223. eISSN23918306. DOI <http://dx.doi.org/10.12775/JEHS.2020.10.07.024>.
13. He HW, Liu DW, Long Y, Wang XT. The peripheral perfusion index and transcutaneous oxygen challenge test are predictive of mortality in septic patients after resuscitation. *Crit Care.* 17(3):R116.
14. Hoencamp R., Vermetten E., Tan E. C., Putter H., Leenen L. P., Hamming J. F. Systematic review of the prevalence and characteristics of battle casualties from NATO coalition forces in Iraq and Afghanistan. *Injury.* 2014. 45, N 7. P. 1028-1034.
15. Biffl W.L. Management guidelines for penetrating abdominal trauma / W.L. Biffl, E.E. Moore // *Curr. Opin. Crit. Care.* – 2010. – Vol. 16. – P. 609–617.

1. Бойко В.В., Лісовий В.М., Макаров В.В., редактори. Обрані лекції з військово-польової хірургії. Харків: НТМТ; 2018. 212 с. Герасименко О. С. Хірургічне лікування бойових ушкоджень живота у районі проведення антитерористичної операції. *Одеський медичний журнал.* 2017. №3(161). С. 34–38.
2. Герасименко О. С. Діагностика та хірургічне лікування ушкоджень органів черевної порожнини при мінно-вибухових пораненнях та вибуховій травмі живота. *Проблеми військової охорони здоров'я.* 2019. №51. С. 45-52.
3. Герасименко О. С. Хірургічне лікування бойових ушкоджень живота в умовах гібридної війни. *Сучасні медичні технології.* 2017. №4 (35). С. 22–25.
5. Герасименко О.С. Клінічно-організаційні принципи надання хірургічної допомоги та спеціалізоване лікування поранених з бойовою травмою живота в умовах АТО. Дисертація

- на здобуття наукового ступеня доктора медичних наук. Київ. 2021 р. 454 с.
6. Єнін Р.В., Герасименко О.С., Хорошун Е.М., Гайда Я.І., Кошиков М.О., Квасневський Є.А. Ендовідеохірургія в лікуванні поранень і травм живота в умовах локального конфлікту. Харківська хірургічна школа. 2019. №1(94). С. 153–155.
  7. Запорожан В.М., Майданюк В.П., Верба А.В., Герасименко О.С., Хорошун Е.М., Шаповалов В.Ю., Єнін Р.В. Взаємодія військової та цивільної медицини в АТО. Проблеми військової охорони здоров'я. 2016. Вип. 46. С. 304–307.
  8. Запорожан В.М., Майданюк В.П., Герасименко О.С., Каштальян М.М., Хорошун Е.М., Шаповалов В.Ю. Проблемні питання взаємодії військової та цивільної медицини в АТО. Вісник морської медицини. 2016. №2 (71). С. 180-181.
  9. Каштальян М.А., Герасименко О.С., Єнін Р.В., Квасневський О.А. Застосування ендовідеохірургічних технологій у лікуванні вентральних гриж після вогнепальних поранень живота. Вісник Вінницького національного медичного університету. 2018. Т. 22. №3. С. 471–473.
  10. Каштальян М.А., Герасименко О.С., Тертишний С.В., Єнін Р.В., Дхауаді Ф. Нові напрямки в лікуванні вогнепальних ран. Проблеми військової охорони здоров'я. 2017. Вип. 48. С. 360–366.
  11. Шаповалов В.Ю., Єнін Р.В. Хірургічне лікування вогнепальних поранень товстої кишки. Проблеми військової охорони здоров'я. 2017. Вип. 48. С. 64-70.
  12. Білий В.Я. Військова хірургія з хірургією надзвичайних ситуацій за ред. В. Я. Білого. Тернопіль, Укрмедкнига. 2004. 324 с.

*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

## ASSESSMENT

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

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

1. Evaluation of theoretical knowledge on the subject of the lesson:
  - 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 lesson:
  - 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 evaluation criteria in practical training**

Rating	Evaluation criteria
"5"	The education seeker 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 lesson, demonstrates clinical thinking.
"4"	The education seeker 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 lesson, demonstrates clinical thinking.
"3"	The education seeker 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.
"2"	The education seeker 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.

**The final control** in the form of a credit is evaluated on a two-point scale: - the grade "passed" is awarded to an education seeker who has completed the curriculum of the discipline and has no academic debt; the level of competence is high (creative); – the grade "failed" is assigned to an education seeker who has not completed the curriculum of the discipline, has academic debt (average grade below 3.0 and/or missed classes); the level of competence is low (receptive - productive).

*Possibility and conditions of obtaining additional ( bonus ) points: not provided.*

## **INDEPENDENT WORK OF EDUCATION SEEKERS OF HIGHER EDUCATION**

Independent work involves preparation for each practical session.

### **POLICY OF EDUCATIONAL DISCIPLINE**

*and Rescheduling Policy :*

- Absences of classes for non-respectable reasons will be worked out according to the schedule of the teacher on duty.
- Absences for valid reasons are worked out according to an individual schedule with the permission of the dean's office.

*Academic Integrity Policy :*

education seekers must observe academic integrity, namely:

- independent performance of all types of work, tasks, forms of control provided for by the work program of this educational discipline;
- references to sources of information in case of use of ideas, developments, statements, information;
- compliance with the legislation on copyright and related rights;
- provision of reliable information about the results of one's own educational (scientific) activity, used research methods and sources of information.

Unacceptable in educational activities for participants of the educational process are:

- the use of family or official ties to obtain a positive or higher grade during any form of control of academic performance or academic merit;
- use of prohibited auxiliary materials or technical means (cheat sheets, notes, micro-earphones, telephones, smartphones, tablets, etc.) during control measures;
- going through procedures for monitoring the results of training by fake persons.

For violation of academic integrity, education seekers may be held to the following academic responsibility:

- a decrease in the results of assessment of the control work, assessment in class, credit, etc.;
- retaking the assessment (test, credit, etc.);
- assignment of additional control measures (additional individual tasks, control works, tests, etc.);
- conducting an additional inspection of other works authored by the violator.

*Attendance and Tardiness Policy:*

Uniform: medical gown, surgical suit, cap, mask, change of footwear.

Equipment: notebook, pen, phonendoscope.

State of health: education seekers suffering from acute infectious diseases, including respiratory diseases, are not allowed to attend classes.

An education seeker who is late for a class can attend it, but if the teacher put " ab " in the journal, he must complete it in the general order.

*Use of mobile devices :*

Mobile devices may be used by education seekers with the permission of the instructor if they are needed for the assignment.

*Behavior in the audience:*

The behavior of education seekers and teachers in the classrooms should be working and calm, strictly responsible rules, installed Regulations on academic integrity and ethics of academic relations at Odessa National Medical University , in accordance with the Code of Academic Ethics and University Community Relations of Odessa National Medical University , Regulations on prevention and detection of academic plagiarism in research and educational work of higher education seekers, scientists and teachers Odessa National Medical University .