

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

Faculty of medicine, international

Department of general, military and children's surgery with a course of urology

**Syllabus of the academic discipline
Gunshot wounds of soft tissues. Wound ballistics.**

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| Scope of the academic discipline | Total number of hours per discipline: 90 hours, 3 credits. Semesters: V-VI. 3 years of study. |
| Days, time, place of educational discipline | 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 |
| Teacher(s) | 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., Pokhlebin V.B., Vityuk M.S. |
| Contact Information | 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 applicants 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 - in-depth study of gunshot wounds, clinical signs of wounds, features of the wound process of gunshot wounds, prevention and treatment of wound complications, primary and secondary surgical treatment of wounds, features of gunshot wound

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.

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 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 diagnosis and treatment of wounds, wound complications, including in cases of gunshot wounds of soft tissues, taking into account the ballistic component.

2. Mastering the skills of performing primary and secondary surgical treatment in cases of gunshot wounds of soft tissues, taking into account the ballistic component

3. Mastering the ability to determine tactics treatment in cases of gunshot wounds of soft tissues, taking into account the ballistic component and prevention of wound complications.

Expected results:

As a result of studying the academic discipline, the applicant must:

Know:

- clinical signs of a wound, wound complications, specifics of surgical treatment, ballistic properties of firearms.

Be able:

- Communicate with the patient, collect complaints, anamnesis of life and illness.
- 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.
- To organize the required level of individual safety (own and the persons he cares for) in case of typical dangerous situations in the individual field of activity.

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

FIRE INJURIES OF SOFT TISSUES. WOUND BALLISTICS.

Content module 1. The concept of wounds, including gunshot wounds

Topic 1. Definition, signs of a wound. Classification of wounds. Phases of the wound process. Features of a gunshot wound.

Modern gunshot wound. Definition. Wound. Fire wound. Clinical gunshot signs of a gunshot wound. Components of the wound. Early process, its phases. Classification of wounds: by origin; according to the nature of the wounded object; according to the degree of infection. Types of healing and phases of the wound process. Features of a gunshot wound.

Topic 2. Wound complications as consequences of a gunshot wound.

Wound complications: development of infection in the wound, bleeding from the wound, wound failure, hypertrophic scars and keloids. General principles of wound treatment and prevention of complications of the wound process after a gunshot wound.

Content module 2. First aid for gunshot wounds

Topic 3. The problem of the organization of medical care . The concept of asepsis and antiseptics. Rules for providing first aid for injuries. The concept of dressing and dressing. Individual dressing package. Applying bandages. Definition and classification of bandages. Covering and compression bandages. Bandages for immobilization and support. Bandaging methods.

Topic 4. Temporary stoppage of bleeding. Applying the harness and twisting. Types of bleeding. Signs of internal bleeding. Applying a tight bandage. Arterial pinch points to stop bleeding. Stoppage of blood with heavy bleeding. Applying a tourniquet. Superimposing a twist. Limb fixation with severe bleeding.

Topic 5. Evacuation-staged system of treatment of the wounded. Battlefield (first aid). The battalion medical center (first aid) complements the first medical aid. Regimental medical center (first aid). A separate medical battalion (qualified medical care) for the wounded in soft tissues. Specialized hospitals.

Content module 3. Surgical wound treatment.

Topic 6. Primary surgical treatment of a gunshot wound

Definition. Indications and contraindications for primary surgical wound treatment. The main types of primary surgical wound treatment. Stages of primary surgical wound treatment. Primary and primary-delayed sutures.

Topic 7. Peculiarities of surgical treatment of a gunshot wound.

General principles of surgical treatment of a gunshot wound. Stages of primary surgical treatment of a gunshot wound. Methods of closing a gunshot wound.

Topic 8. Secondary surgical treatment of a wound.

Infected wounds. Local and general signs of the inflammatory process. Classification of wound infection. Tetanus Emergency prevention of tetanus. Clostridial and putrefactive wound infection, features of surgical treatment. Indications and contraindications for secondary surgical wound treatment. Wound drainage techniques.

Topic 9. Traumatic shock. Development of the doctrine of traumatic shock. Etiology and pathogenesis of traumatic shock. Classification and clinic of traumatic shock. Diagnosis of traumatic shock. Treatment of traumatic shock.

Content module 4. Modern pathomorphological features of a gunshot wound

Topic 10. Wound ballistics.

Factors of formation of a gunshot wound. Phases of the temporary pulsating cavity. Design features and ballistic properties of modern projectiles. Morphology of a gunshot wound. Dependence of the morphology of the wound channel on the initial w. The main tactical and technical and ballistic characteristics of standard and special types of firearms. Tactical-technical and ballistic characteristics of listed types of firearms. Tactical-technical and ballistic characteristics of special types of firearms. The course of the wound process in gunshot wounds. Zones of impaired microcirculation in the wound channel. Factors contributing to the development of infection. Surgical treatment of gunshot wounds.

Topic 11. Wound ballistics and morphofunctional changes in tissues with gunshot wounds.

Wound ballistics. The theory of wound poisoning with gunpowder. Care theory. Theory of hydraulic action. The mechanism of a gunshot wound.

Topic 12. The structure of a gunshot wound.

Morphological and functional changes. Primary wound channel. Zone of contusion. Earthquake zone. The course of the wound process and wound healing. Clinical signs of a gunshot wound.

Topic 13. Pathogenesis of a gunshot wound.

Processes of membrane pathology. Morphofunctional changes in soft tissues of a gunshot wound. Endogenous intoxication syndrome. Phases of the wound process.

Topic 14. Pathogenetic bases of modern gunshot wound treatment.

Treatment of gunshot wounds of various localization. Zone of primary tissue destruction (necrosis). Characteristics of gunshot wounds. Surgical treatment. Indications for primary surgical treatment.

Topic 15. Control of learning practical skills.

List of recommended literature:

Main:

1. General Surgery. Textbook for students of higher medical educational establishments / [Lihonenko O.V., Zubaha A.B., Khimich S.D et all.]; Edited by Prof. S.D. Khimich, Prof. M.D. Zheliba / Kyiv AUS Medicine Publishing, 2019.- 608 p.
2. General Surgery. Textbook for students of higher medical educational establishments / [Lihonenko O.V., Chorna I.O. et all.]; Edited by Prof. Ja.S.Bereznickij, M.P.Zacharash, M.P.Mishalov,/ - Vinnica: New book- 2019. -344c
3. R.Kushnir. Lecture of General surgery for foreign students of II and III years of medical faculty. –Ternopil “Ukrmedkniga”,2018 – 318 p
4. Lyapis M. A. Methods of examination of a surgical patient / M. A. Lyapis. – Ternopil: Ukrmedbook, 2004. – 156 p.

1. Загальна хірургія: підручник / С. Д. Хіміч, М. Д. Желіба, , І. Г. Герич та ін.: за ред. професорів С. Д. Хіміча, М.Д. Желіби,. – К.: ВСВ «Медицина», 2018. – 608 с.
2. Загальна хірургія : [підручник для студентів вищих навч. закладів МОЗ України] / за ред.: Я. С. Березницького, М. П. Захараша, В. Г. Мішалова, В. О. Шідловського ; В. П. Андрющенко, Я. С. Березницький, А. В. Верба та ін. - Вінниця : Нова Книга, 2018. - 342 с.
3. Хірургія. (Підручник з загальної хірургії) /за ред..проф.Я.С.Березницького. – Дніпропетровськ, РВА „Дніпро VAL”, Т.1. – 2018. – 443с.

Additional:

1. Butyrsky A. General surgery. – Simferopol. 2014.- 478p
2. General surgery. Selected lectures Edited by prof. V. V. Mishchenko // V. Ye. Vansovych, N. D. Voloshenkova, D. M. Davydov, et other// Odessa 2019. 338p
3. Gostishcev V.K. General surgery/ The manual. –М.:Geotar-med, 2018. 220p
4. Schevchenko S. I. Surgery / S. I. Schevchenko and others. – Kharcov, 2004.
5. Kushnir R. Lectures of General surgery. – 2015.
- 6.Methodological recommendations on surgical patients care. – Vinnitsa medical national university, 2016.
7. Short practice of surgery. 24th edition.Vol.1.Edited by R.C.G.Russell, Norman S. Williams, Christopher J.K.Bulstrode. A member of the Hodder Headline Group. - London, 2018. – 738p.1. Butyrsky A. General surgery . – Simferopol . 2014. - 478 p

1. Амбулаторні хірургічні маніпуляції / за ред. Проф.. Польового В .П., Шкваровського І. В., Желіби М .Д. – Чернівці: Медуніверситет, 2018. – 252 с.
2. Десмургія : навчальний посібник / О. О. Виноградов, М. О. Ропасєва, О. І. Гужва, А. В. Радченко ; Держ. закл. «Луган. нац. ун-т імені Тараса Шевченка». – Старобільськ : Вид-во ДЗ «ЛНУ імені Тараса Шевченка», 2015. – 80 с.
3. Шаповал С.Д. Гнійно-септична хірургія./Навчальний посібник. – Київ ВСВ «Медицина» - 2019 – 192 с.
4. Невідкладні стани в хірургії. /Навчальний посібник для медичних ВНЗ I—III рівнів акредитації МОЗ України/ К. Бобак, А. Бобак, В. Киретов - Київ ВСВ «Медицина» - 2017 – 560с.

Electronic information resources

1. <https://moz.gov.ua/> – [Ministry of Health of Ukraine](#)
2. www.ama-assn.org - [American Medical Association / American Medical Association](#)
3. www.who.int - [World Health Organization](#)
4. 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

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 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 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 lesson, demonstrates clinical thinking. |
| "4" | The applicant has a good command of the material, participates in the discussion and solution of a situational clinical problem, demonstrates practical skills 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 acquirer does not have sufficient knowledge of the material, is unsure of participating in the discussion and solution of the situational clinical problem, demonstrates practical skills and interpretations of clinical, laboratory and instrumental research data with significant errors. |
| "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 is carried out: at the last lesson 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 mean of all components according to the traditional four-point scale and has a value that is rounded according to the statistics method with two decimal places after the decimal point.

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

INDEPENDENT WORK OF STUDENTS OF HIGHER EDUCATION

Independent work involves preparation for each practical session.

POLICY OF EDUCATIONAL DISCIPLINE

Deadlines 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:

Applicants 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, students 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: applicants suffering from acute infectious diseases, including respiratory diseases, are not allowed to attend classes.

A student who is late for class can attend it, but if the teacher has put "nb" in the journal, he must complete it in the general order.

Use of mobile devices:

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

Behavior in the audience:

The behavior of applicants 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 applicants, scientists and teachers Odessa National Medical University .