

National Pirogov Memorial Medical University, Vinnytsya

"APPROVE"

Acting Rector of HEI


Viktoriia PETRUSHENKO

"31" august 2023 y.

"AGREED "

Head of the Department Orthopedics
and Traumatology


professor of HEI Volodymyr FISCHENKO

"29" august 2023 year

SYLLABUS
of academic discipline
Military surgery

Specialty	222 Medicine
Educational level	the second (master's) level
Educational programme	For example, EPPDentistry, 2022
Academic year	2023-2024
Department	Orthopedics and Traumatology
Lecturer (if lectures are given)	PhD A.V.Makogonchuk
Contact information	<i>traumatology@vnmue.edu.ua, street Kyivska, 68</i>
Syllabus compiler	Assistant I.G. Kyryshchuk

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1. Status and structure of the discipline

Discipline status	Compulsory
Discipline code in EPP/ discipline place in EPP	EC19, discipline of professional training
Course / semester	5rd year (IXsemester)
The amount of discipline (the total number of hours/number of credits ECTS)	60 hours/2 credits ECTS
Number of content modules	1 modul
The structure of the discipline	Lectures - 8 hours Practical classes - 32 hours Independent work - 20 hours
Language of study	English
Form of study	Full – time (during quarantine limitation - remote learning)

2. Description of the discipline

Short annotation of the course, relevance. The discipline "Military Surgery" is selective. Its teaching is conducted in the 5th year as a separate module.

The study of the discipline "Military Surgery" gives students the opportunity to: receive training and practical skills in modern combat trauma: mechanical (traumatic) and gunshot wounds of various localizations, burns, combined, radiation and chemical injuries, traumatic illness and wound infection; lays the foundations of theoretical knowledge and practical skills in medical sorting of the wounded, providing them with pre-medical, first aid, qualified and specialized surgical care in modern hostilities and peacetime emergencies; to form professional knowledge and skills in the diagnosis and treatment of modern gunshot wounds and closed injuries of limbs and joints, skull and brain, spine and spinal cord, chest, abdomen, pelvis and pelvic organs, etc. at the stages of medical evacuation; to form the basic concepts of medical and evacuation support (forces, means, Role, etc.) in accordance with modern NATO standards and requirements.

Prerequisites. Normal anatomy, histology, cytology and embryology (structure of internal organs at different levels, their syntopy, skeletotopy, blood supply, lymph flow and innervation; formation of organs and systems in ontogenesis); physiology (functions of organs and systems, conditions of their implementation and interdependence); pathological anatomy, pathological physiology (morphological and functional disorders in organs and systems in different types of pathological processes, their relationship, course, manifestations, methods of termination); microbiology, immunology (the main pathogens of wound infection, their properties, aggression factors, identification methods; specific and non-specific factors of local and systemic protection); propaedeutics of internal medicine (methods of physical examination and additional diagnostics of the patient, typical changes at injuries and surgical diseases), radiology (types, principles of application of methods of radiological diagnostics, simeotics), pharmacology, clinical pharmacology (groups of drugs used in surgery and rules of their application)), general surgery with topographic anatomy and operative surgery (organization of surgical care, deontology and care of patients of surgical profile; wound science, hemostasis; basics of transfusiology; surgical infection, asepsis and antiseptics; syntopy, skeletotopy to internal organs, surgical surgical interventions), emergency medicine (types of losses, sorting of victims, medical and evacuation support). In addition, the mastering of the subject is closely interrelated with the study of all disciplines of surgical profile (anesthesiology and intensive care, abdominal, thoracic, vascular surgery, neurosurgery, otorhinolaryngology, traumatology, orthopedics, urology, etc.), as well as medical and non-medical disciplines.

The purpose of the course and its significance for professional activities. The aim of the course is to train a highly educated and erudite doctor who has mastered the basic knowledge, skills and abilities in military surgery. In the conditions of a hybrid war waged by the Russian Federation against the state of Ukraine, a doctor of any specialty must be ready to use these knowledge, skills and abilities in practice.

Postrequisites. The study of the course is necessary for the acquisition of theoretical and practical knowledge of etiology, pathogenesis, clinical manifestations, diagnostic methods, staged conservative and surgical treatment, modern combat trauma of various origins and different localizations, early and late complications, including sorting and evacuation wounded, stages and continuity of the treatment and rehabilitation process, and within the limits appropriate to the training of a general practitioner, taking into account the peculiarities of his specialization.

3. Learning outcomes.

- Upon completion of the study, students must:

Know:

- classification of modern combat injuries, thermal, chemical, electrical and radiation burns;
- structure of morphological changes of tissues in the wound canal in case of gunshot and mine injuries;
- main types of medical sorting of the wounded and burned;
- the scope of diagnosis and treatment of victims at the stages of medical evacuation;
- prevention of anaerobic infection at the stages of medical evacuation
- the amount of care for gunshot and mine injuries, burns, combined radiation and chemical damage during the medical evacuation stages;
- volume and rules of primary surgical treatment of gunshot, mine and explosive wounds in isolated and combined lesions;
- treatment of burn shock;
- classification of types of bleeding and severity of blood loss;
- methods of temporary cessation of bleeding;
- indications, contraindications and rules for blood transfusions and blood substitutes;
- definition, diagnosis and treatment program of traumatic shock;
- modern methods of correction of disorders of hemodynamics, respiration, metabolism and neuroendocrine disorders;
- classification and diagnosis of long-term crushing syndrome (STR);
- the amount of assistance to the wounded with STR on the battlefield and stages of medical evacuation;
- classification, diagnosis, treatment on the battlefield and stages of medical evacuation of closed and open bone fractures;
- classification, diagnosis, treatment on the battlefield and stages of medical evacuation of joint injuries;
- classification, diagnosis, treatment on the battlefield and stages of medical evacuation of damage to large blood vessels;
- classification, diagnosis, treatment on the battlefield and stages of medical evacuation of nerve injuries;
- classification, diagnosis, treatment on the battlefield and stages of medical evacuation of limb injuries;
- classification, diagnosis, treatment on the battlefield and stages of medical evacuation of closed injuries and gunshot wounds to the skull and brain;
- classification, diagnosis, treatment on the battlefield and stages of medical evacuation of closed injuries and gunshot wounds to the spine and spinal cord;
- classification, diagnosis, treatment on the battlefield and stages of medical evacuation of complications of combat chest trauma;
- classification, diagnosis, treatment on the battlefield and stages of medical evacuation of closed and open abdominal injuries;

- classification, diagnosis, treatment on the battlefield and stages of medical evacuation of gunshot fractures of the pelvic bones with and without damage to the pelvic organs;
- classification, diagnosis, treatment on the battlefield and stages of medical evacuation of wounds and closed injuries of the pelvis and pelvic organs.

Be able:

- classify modern combat trauma, thermal, chemical, electrical and radiation burns;
- organize the provision of surgical care in the field and in emergencies;
- carry out the main types of medical sorting of the wounded and burned;
- name the scope of diagnosis and treatment of victims at the stages of medical evacuation;
- organize measures to prevent anaerobic infection at the stages of medical evacuation
- provide first aid, pre-medical and first aid for gunshot and mine injuries, burns, combined radiation and chemical damage;
- to carry out primary surgical treatment of gunshot, mine and explosive wounds with isolated and combined lesions;
- develop a treatment program for burn shock;
- classify types of bleeding and severity of blood loss;
- apply methods to temporarily stop bleeding;
- demonstrate the determination of samples for blood compatibility of the donor and recipient;
- determine the indications and contraindications to blood transfusions and blood substitutes;
- identify and diagnose traumatic shock;
- develop a treatment program for traumatic shock;
- apply modern methods of correction of hemodynamic disorders, respiration, metabolism and neuroendocrine disorders;
- classify and diagnose the syndrome of prolonged crushing (STR);
- demonstrate the ability to provide first aid to a wounded with STR;
- to carry out modern methods of treatment of a syndrome of long crushing at stages of medical evacuation;
- classify and diagnose closed and open non-gunshot fractures;
- classify and diagnose gunshot wounds to the joints and complications;
- classify and diagnose gunshot wounds and damage to large blood vessels;
- classify and diagnose nerve damage, know the amount of first aid, pre-medical, first aid and qualified care for nerve damage;
- provide first aid, pre-medical, first aid for injuries of limbs and joints;
- classify and diagnose clinical manifestations of closed injuries and gunshot wounds to the skull and brain;
- provide first aid on the battlefield and stages of medical evacuation for skull injuries;
- diagnose symptoms of closed injuries and gunshot wounds of the spine and spinal cord;
- diagnose, provide first aid on the battlefield and demonstrate knowledge of treatment at the stages of medical evacuation in case of complications of combat chest trauma;
- classify closed and open abdominal injuries;
- diagnose closed abdominal injuries; demonstrate knowledge of treatment of victims at the stages of medical evacuation;
- interpret the clinical manifestations of gunshot fractures of the pelvis with damage and without damage to the pelvic organs;
- provide first aid for injuries and closed injuries of the pelvis and pelvic organs;

4. Content and logistic of the discipline

Module 1	9 semester 60 hours / 2 credits	Lectures № 1-4 Practical classes № 1-16 Topics for self- study № 1-10
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The course includes 14 topics.

Module 1

Thematic modules 1. General issues of traumatology.

Topic 1. War wounds;

Topic 2. Traumatic shock. Crush-syndrome;

Topic 3. Mines blast trauma and combined injuries;

Topic 4. Thermal injuries;

Topic 5. Bleeding and hemorrhage control;

Topic 6. Infection complications of war trauma;

Topic 7. Injuries of the brain, spine and spinal cord;

Topic 8. Thoracic injuries;

Topic 9. Abdominal and pelvic injuries;

Topic 10. Musculoskeletal injuries;

Topic 11. Summary.

The topics of the lecture course reveal the problematic issues of the relevant sections of the discipline.

Practical classes provide a theoretical justification of the main issues of the topic and the acquisition of the following practical skills and professional skills:

Practical experience

- Collection of anamnesis in a surgical patient.
- Examination of the patient: examination, percussion, palpation, auscultation.
- Determination of vital signs (pulse characteristics, respiratory rate, blood and central venous pressure)
- Evaluation of general urine and blood tests.
- Determination of blood group.
- Procedure for determining group and rhesus blood compatibility. Methods of biological testing.
- Prepare a system for blood transfusion and CPR.
- First aid for open and valvular pneumothorax.
- Primary wound treatment
- Temporary cessation of bleeding from the limb. Methods, places of pressing of the main vessels. Applying a tourniquet on a mannequin.
- Temporary cessation of bleeding from the torso and neck.
- Conducting mouth-to-mouth resuscitation
- Conducting a closed heart massage.
- Rationale and formation of the diagnosis.
- Fracture site blockade technique
- Perform a pleural puncture (simulate)
- Perform a pericardial puncture (simulate)
- Install the Bülow valve drainage system
- Decompress the stomach (procedure)
- Catheterize the bladder on a manikin. Method of suprapubic puncture

Professional skills

- classify modern combat trauma, thermal, chemical, electrical and radiation burns;
- to determine the structure of morphological changes of tissues in the wound canal in gunshot and mine injuries;
- organize the provision of surgical care in the field and in emergencies;
- carry out the main types of medical sorting of the wounded and burned;
- name the scope of diagnosis and treatment of victims at the stages of medical evacuation;
- organize measures to prevent anaerobic infection at the stages of medical evacuation
- provide first aid, pre-medical and first aid for gunshot and mine injuries, burns, combined radiation and chemical damage;
- to carry out primary surgical treatment of gunshot, mine and explosive wounds with isolated and combined lesions;
- develop a treatment program for burn shock;
- classify types of bleeding and severity of blood loss;
- apply methods to temporarily stop bleeding;
- demonstrate the determination of samples for blood compatibility of the donor and recipient;
- determine the indications and contraindications to blood transfusions and blood substitutes;
- identify and diagnose traumatic shock;

- develop a treatment program for traumatic shock;
- apply modern methods of correction of hemodynamic disorders, respiration, metabolism and neuroendocrine disorders;
- classify and diagnose the syndrome of prolonged crushing (STR);
- demonstrate the ability to provide first aid to a wounded with STR;
- to carry out modern methods of treatment of a syndrome of long crushing at stages of medical evacuation;
- classify and diagnose closed and open non-gunshot fractures;
- classify and diagnose gunshot wounds to the joints and complications;
- classify and diagnose gunshot wounds and damage to large blood vessels;
- classify and diagnose nerve damage, know the amount of first aid, pre-medical, first aid and qualified care for nerve damage;
- provide first aid, pre-medical, first aid for injuries of limbs and joints;
- classify and diagnose clinical manifestations of closed injuries and gunshot wounds to the skull and brain;
- provide first aid on the battlefield and stages of medical evacuation for skull injuries;
- diagnose symptoms of closed injuries and gunshot wounds of the spine and spinal cord;
- diagnose, provide first aid on the battlefield and demonstrate knowledge of treatment at the stages of medical evacuation in case of complications of combat chest trauma;
- classify closed and open abdominal injuries;
- diagnose closed abdominal injuries; demonstrate knowledge of the treatment of victims at the stages of medical evacuation;
- interpret the clinical manifestations of gunshot fractures of the pelvis with damage and without damage to the pelvic organs;
- provide first aid for injuries and closed injuries of the pelvis and pelvic organs

The student's independent work involves preparation for practical classes and correction of practical skills, study of topics for extracurricular work, preparation of presentations, tables, review of scientific literature and writing reviews on given topics for individual work. The control of mastering temporary independent audit work is carried out at various control classes and final control in the discipline.

Individual work includes preparation of reports for student scientific conferences, participation in student competitions and contests in surgery, participation in competitions of student research papers, research under the supervision of a teacher, participation in writing publications on the results of own research, creating illustrative material (videos, fragments) programs, etc.), work in the SSS of the department.

Thematic plans of lectures, calendar plans of practical classes, thematic plan of independent extracurricular work, volume and directions of individual work are published on the site of the department.

The route for obtaining materials: Department Orthopedics and Traumatology/ for students / Full-time education/ Medicine /5course /Educational materials/ or through the link <https://www.vnmdu.edu.ua/en/departament Orthopedics and Traumatology>. Access to the materials is carried out through the student's corporate account s000XXX@vnmdu.edu.ua.

5. Forms and methods of monitoring academic performance

Current control in practical studies	Methods: oral or written survey, testing, electronic survey, solving situational problems, examination of patients, interpretation of the results of physical and additional research methods, monitoring the implementation of practical skills. The student's knowledge of the topic and a certain section is assessed by the traditional assessment (5-
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	point system) in accordance with the requirements of the organization of the educational process in National Pirogov Memorial Medical University, Vinnytsya link: https://www.vnmu.edu.ua/en/general-information
Control of mastering the thematic section of the discipline at intermediate control lessons	Methods: oral or written survey, electronic testing, situational problem solving, control of practical skills
Final control of the discipline - differential credit	Methods: individual oral interviews, solving situational problems according to the regulations on the organization of the educational process in National Pirogov Memorial Medical University, Vinnytsya link: https://www.vnmu.edu.ua/en/general-information
Learning success diagnostic tools	Theoretical questions, clinically-oriented situational tasks, practical tasks, demonstration of practical skills, tests.

6. Assessment criteria

Knowledge assessment is carried out in accordance with the Regulations of the Academic process in National Pirogov Memorial Medical University, Vinnytsya
(link <https://www.vnmu.edu.ua/en/general-information>)

Continuous assessment	On a four point system of traditional assessments: 5 «excellent», 4 «good», 3 «satisfactory», 2 «unsatisfactory»
Midpoint separation assessment	On a four-point system of traditional assessments
Control of practical skills	According to the four-point system of traditional assessments
Pass-fail exam	On a 200-point scale (the arithmetic average grade for the semester is converted into points) Credited: 120 to 200 points Not credited: less than 120 points (See Grading Scale)
Final control of the discipline	Exam grade: 71-80 points - "excellent" 61-70 points - "good" 50-60 points - "satisfactory" Less than 50 points - "unsatisfactory" / did not pass
Discipline assessments:	Current academic assessment - from 72 to 120 points (conversion of the average traditional assessment of practical class on a 120-point scale): 60% of the grade for the discipline Final control - from 50 to 80 points: 40% of the grade for the discipline Individual work - from 1 to 12 points From 122 to 200 points in total.

Discipline Score Scale: National and ECTS

The sum of grades for all types of educational activities	ScoreECTS	Score on a national scale	
		For exam, course project (work), practice	for credit test
180-200	A	excellent	credited
170-179,9	B	good	
160-169,9	C		

141-159,9	D	satisfactory	
122-140,99	E	satisfactory	-
0-121,99	FX	unsatisfactory with the possibility of reassembly	is not credited with the possibility of reassembling
	F	unsatisfactory with a mandatory reexamination of discipline	is not credited with mandatory reexamination of discipline

7. Policy of discipline

The student has the right to receive high-quality educational services, access to contemporary scientific and educational information, qualified advisory assistance during the study of discipline and mastering practical skills. The policy of the department during the providing of educational services is a student-centered, based on normative documents of the Ministry of Education and the Ministry of Health of Ukraine, the Statute of the University and the Procedure for the Providing of Educational Services regulated by the main principles of the organization of the educational process in National Pirogov Memorial Medical University, Vinnytsya and the principles of academic integrity(<https://www.vnmdu.edu.ua/en/general-information>).

Adherence to the rules of National Pirogov Memorial Medical University, Vinnytsya, safety techniques in practical classes.

Requirements for preparation for practical classes. The student should be prepared for practical classes, test tasks for the current topic should be solved in a workbook, diagrams and tables are filled.

You should come to class on time, without delay. A student who is more than 10 minutes late for class is not allowed to the lesson and must re-work it in the established order.

In practical classes, the student must be dressed in a work uniform (medical gown, hat). Students who do not have a work uniform are not allowed to study.

The student must follow the rules of safety in practical classes and during the stay in the department.

When discussing theoretical issues, students should demonstrate tolerance, courtesy and respect for their colleagues and the teacher; when performing practical tasks, the workplace should be kept in order and cleaned after the practical work.

Usage of mobile phones and other electronic devices. The use of mobile phones and other electronic devices in the classroom is allowed only during electronic testing or interviews.

Academic integrity. When studying the discipline, the student must be guided by the Code of Academic Integrity and Corporate Ethics of National Pirogov Memorial Medical University, Vinnytsya (link: <https://www.vnmdu.edu.ua/en/general-information>). In case of violation of the norms of academic integrity during the current and final controls student receives a grade of "2" and must work it out to his teacher in the prescribed manner within two weeks after receiving an unsatisfactory assessment.

Missed classes. Missed classes are working out in the manner prescribed by Regulations of the Academic process in National Pirogov Memorial Medical University, Vinnytsya (link <https://www.vnmdu.edu.ua/en/general-information>) at the time of work out schedule (published on the website of the department

<https://www.vnmdu.edu.ua/en/department/department> Orthopedics and Traumatology) to the teacher on duty. To re-work the missed lesson, the student must provide a completed workbook protocol on the relevant topic, take a test and answer questions in writing or orally to the topic of the lesson.

The procedure for admission to the discipline final control is given in the Regulations of the Academic process in National Pirogov Memorial Medical University, Vinnytsya (link <https://www.vnmdu.edu.ua/en/general-information>). To the final control allowed students who do not have missed practical classes and received an average traditional grade of at least "3".

Additional points. Individual points in the discipline (from 1 to 12) that student can receive for individual work, the amount of which is published on the website of the department in the

educational methodical materials of the discipline, the number of points is determined by the results of IRS according to Regulation of the Academic process in National Pirogov Memorial Medical University, Vinnytsya (<https://www.vnmu.edu.ua/en/general-information>).

Conflict resolution. In case of misunderstandings and complaints to the teacher because of the quality of educational services, knowledge assessment and other conflict situations, student should submit his / her claims to the teacher. If the issue is not resolved, the student has the right to apply to the head of the department according to Complaints Consideration Procedure in National Pirogov Memorial Medical University, Vinnytsya (link <https://www.vnmu.edu.ua/en/general-information>)

Politics in terms of remote learning. Distance learning regulated by the Regulations of the elements of remote learning in National Pirogov Memorial Medical University, Vinnytsya (<https://www.vnmu.edu.ua/> General information). The main training platforms for studying are Microsoft Team and Google Meets. Practical classes, exercises and consultations during distance learning is published on the website of the department (<https://www.vnmu.edu.ua/> Department of Orthopedics and Traumatology/ to Students or [https://www.vnmu.edu.ua/en/department/Orthopedics and Traumatology](https://www.vnmu.edu.ua/en/department/Orthopedics%20and%20Traumatology)).

The procedure for receiving an "Air alarm" signal.

1. The teacher, who conducts classes with the study group, immediately conveys the signal to the students with the command "Attention! Air alarm!". Students pack their things, put on outerwear (in the cold season), leave the classroom, and, accompanied by a teacher, arrive at the shelter.
2. In the shelter, the rules of behavior and safety measures are followed, if possible, the teacher continues to conduct classes.

3. Stay in the shelter until you receive the "Airborne alarm sound" signal.

In the building, it is forbidden to smoke, make noise, carry dangerous devices, in particular for lighting, which can cause a fire, it is not allowed to move around the premises without a special need, it is necessary to observe discipline and move as little as possible. It is also forbidden to bring flammable substances or substances with a strong smell, bulky things, and bring animals to the shelter. For a complete rest, it is allowed to keep in the building or take with you light bedding and small pillows made of foam rubber, sponge rubber or other synthetic material.

The procedure for receiving the "Airborne alarm bounce" signal.

1. Students leave the shelter in an organized and fuss-free manner, arrive at the auditorium and prepare for further classes.
2. After making sure that all students have left the shelter, the teacher arrives at the classroom, checks the presence of students and continues the lesson.

Feedback from teachers is via messengers (Viber, Telegram, WhatsApp) or e-mail (at the teacher's choice) during working hours.

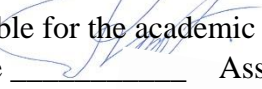
8. Educational resources.


1. Educational and methodological support of the discipline is published on the website of the department ([https://www.vnmu.edu.ua/en/ department of Orthopedics and Traumatology / for students](https://www.vnmu.edu.ua/en/department%20of%20Orthopedics%20and%20Traumatology%20for%20students)). Consultations are held twice a week according to the schedule.

2. The timetable and distribution of groups with assigned teachers are published on the web page of the department (([https://www.vnmu.edu.ua/en/ department Orthopedics and Traumatology / for students](https://www.vnmu.edu.ua/en/department%20Orthopedics%20and%20Traumatology%20for%20students))).

3. Questions to the intermediate and final semester control (credit) of the discipline are published on the web page of the department ([https://www.vnmu.edu.ua / en/ department Orthopedics and Traumatology / for students](https://www.vnmu.edu.ua/en/department%20Orthopedics%20and%20Traumatology%20for%20students)).

The syllabus of the discipline "**Military surgery**" was discussed and approved at the meeting of the Department Orthopedics and Traumatology (record № 1, dated "29" August 2023)

Responsible for the academic
discipline  Assistant Igor KYRYSHCHUK
(signature) (full name)

Head of the department  Professor of HEI Volodymyr FISCHENKO
(signature) (full name)